

**SYSTEMATIC REVIEW OF STIGMAS PRESENT AGAINST DISABLED CHILDREN GLOBALLY AND
HOW THESE STIGMAS VARY ACROSS REGIONS AND POPULATION
AND
COMPREHENSIVE REVIEW OF THE PERCEPTIONS AND ATTITUDES
THAT DISABLED CHILDREN FACE GLOBALLY**

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Abstract

Background: Current literature shows that disabled individuals are vulnerable compared to their abled body counterparts in a variety of measures. Likewise, disability itself has also been shown to vary across regions and cultures. Consequently, attitudes and perceptions toward these disabilities may also vary globally.

Methods: Literature searches using keyword searches were done based on search strings of “childhood disability” with other phrases. The outcome variables extracted from the literature include the following: region, population studied, a general description of the attitudes, a broader category into which the type of attitude falls and whether or not there were persistent negative attitudes toward disability. Meta analyses were done for outcomes (presence of negative attitude or not) reported in at least two papers for association with religious beliefs, cultural norms or regional variation.

Results: After key word search were done, an initial 114 articles were screened to be relevant to the topic. 15 articles had data extracted. Descriptive results compiled in a data table demonstrated that cultural and religious norms are associated with negative attitudes toward disability, with a variety of research articles illustrating that disabled children face stigma on the basis of cultural or religious beliefs. Meta analyses, however, did not demonstrate any statistical significance between the cultural, religious or regional factors in the likelihood of having negative attitudes toward disability.

Discussion: While the association between religion, culture and region with the likelihood of having negative attitudes was not found to be statistically significant, the presence of negative attitudes on the basis of culturally or religiously held beliefs, globally, does appear to exist on review of the literature. Future research may resolve the question on whether there are tangible influences on the negative attitudes that disabled children can experience. This could be done via increasing sample sizes for future analysis and by incorporating widespread surveys that specifically ask its participants about the origins of the attitudes they hold toward disabled children.

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Introduction

Current Situation

The intention of the Convention on the Rights of Persons with Disabilities (CRPD) was to ensure that individuals worldwide could enjoy equal rights, freedoms and respect compared to their non-disabled counterpart.¹ Having come into effect in 2008, CRPD, sponsored by the United Nations, has been signed and ratified by most nations worldwide. Several Articles in the CRPD refer directly to upholding goals to prevent and combat discriminations and stigmas that disabled individuals face. Namely, Article 8b: "...combat stereotypes, prejudices...to persons with disabilities...in all areas of life", Article 25a: "[to] provide persons with disabilities with the same range, quality and standard of...health care..." and Article 25f: "prevent discriminatory denial of health care...on the basis of disability" all clarify that the United Nations via the CRPD seek to rectify discriminatory behavior toward disabled individuals on the basis of both cultural attitudes and perceptions and in health care.

Indeed, UNICEF has defined disabled children as those who have "long term physical, mental, or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with other."² Furthermore, in the same report, UNICEF also claimed that "access to basic healthcare can be influenced by cultural attitudes as well as economic development" in referring to treatment of disabled children.

Yet, despite both the CRPD's pledge to combat perceived stigmas and the lack of resources disabled individuals face and UNICEF's recognition of the dismal state that disabled children are in worldwide, the disparity between the disabled and non-disabled pervades several facets of disabled people's lives globally. Research indicates that the status of disability remains a significant factor in unequal medical care for affected children and adults worldwide.

Significance

Individuals with disability appear to have worse health outcomes compared to their non-disabled counterparts. For example, in regard to adults, disabled individuals compared to their abled-body counterparts suffer a higher burden of chronic medical conditions, in addition to reporting worse access to care and insufficient emotional support.³ Consequently, research has also indicated severely disabled individuals are less likely to receive certain public and preventative health measures, like vaccines.⁴ Furthermore, disabled individuals are also significantly less likely to receive recommended screening measures, like mammograms or Pap smears.⁵ Regardless, these suggest that the disabled may be at a disadvantage to maintain their health. Moreover, disabled children are also vulnerable to these disparities and negative attitudes.

Despite universal healthcare in Taiwan, disabled children are much less likely to access various preventative health services compared to their peers.⁶ Similarly, in the United States, children with special health care needs with concurrent chronic emotional, behavioral, and developmental problems, such as disabled children, are more likely to have unmet medical needs compared to children with special health care needs, but no chronic emotional, behavioral, and developmental problems. Indeed, these differences have been shown to be particularly poignant for children in disenfranchised minority groups, like African American children.⁷ This information suggests that disabled children are vulnerable in that they receive lower quality management of their chronic medical conditions.

In addition to research demonstrating that disparities exist between disabled and non-disabled individuals, even in healthcare, disability itself has been demonstrated to vary on the basis of region and culture. For example, the patterns and characteristics of childhood disabilities themselves, like cerebral palsy, have been shown to be distinct when compared between high-income and low-income countries, despite children receiving the same medical diagnosis. For example, children with cerebral palsy in Bangladesh are reported to have worse cognitive skills and gross motor function compared to their age matched Australian counterparts.⁸ Similarly, cultural behaviors, traits, and attitudes have also been suggested to determine the severity in

outcomes of childhood disability. For instance, Finnish children with Autism Spectrum Disorder have higher verbal and non-verbal fluency and better comprehension of sentence structure compared to Egyptian children, likely due to cultural differences in communication and attitudes.⁹

Cultural attitudes toward disabled children have also been demonstrated to be the root cause for much of the negligence and violence that disabled children face in their communities. Negative attitudes toward “snake children” (i.e. children with Down Syndrome) in rural communities in Cote d’Ivoire are believed in the ethnography to stem from the practices of killing, abandonment and other abuses that these children suffer.¹⁰ In particular, discrimination in these communities stems from the basis that the overarching culture appears to view children with Down’s syndrome as awkward and abhorrent due to their movement issues and physical appearance—as mentioned, described by community members as “snake-like”. Consequently, these results from community interviews demonstrate how significant the affects of cultural, regional and religious attitudes are for children with disabilities.

Rationale

Research has demonstrated that there are clear disparities between disabled and non-disabled individuals in regards to the medical care they receive. Furthermore, disability itself has been shown to be different across regions and between high and low-income areas. The inequality that disabled individuals face, particularly in access to and utilization of medical care, necessitates more research to learn about why these disparities between disabled and non disabled individuals persist. Differences between regions and populations worldwide regarding the nature of disability and disabled people and the documented existence of culturally based violence and abuse toward disabled individuals suggest that there is an association between cultural, religious and regional differences and negative attitudes in how disability is viewed, and subsequently dealt with, on community, societal and national levels.

Consequently, a better understanding of what the attitudes and stigmas are toward disability and how these attitudes differ across regions can aid healthcare providers, policy makers,

families, and communities to better deal with the issues that disabled individuals, in particular children, face in their societies. Research put toward learning both what culturally and socially based stigmas disabled children face along with the cultural beliefs and perceptions are that influence attitudes across regions can be utilized to improve both disabled people's medical care and their participation in society. Because disabled children have been shown to be marginalized, any scientific insight on the relationship between cultural, religious or regional relationships with negative attitudes has merit in helping determine exactly how these attitudes influence and perpetuate the aforementioned disparities. The ultimate goal of this body of research and work is to help combat whatever stigmas and negative attitudes these children face on a cultural, religious and/or regional levels so that disabled children can more fully participate in their societies on equal basis with others. Thus, the question that this systematic review seeks to answer is the following: what stigmas are present against disabled children worldwide and how do attitudes toward disabled children vary across regions and populations? Indeed, this systematic review will be looking at the basis of attitudes toward disability and disabled individuals globally and how these attitudes are associated with culture, religion and regional variation via examination of both qualitative and quantitative perceptions of disability that authors of primary research articles have observed or studied.

The outcomes that will be extracted will be assessments compiled by these authors of the attitudes—like stigma, prejudice, bias, intolerance and/or persecution etc.—that disabled children and their families in these studies face. These extracted outcomes will be both categorical by determining whether negative attitudes or stigma is present and qualitative by describing the particular characteristics and nuances of these perceptions as observed by the authors to view generally how these attitudes appear to vary. Consequently, the presence of these outcomes will be used to resolve the question of whether stigma is present worldwide. Additionally, outcome variables of what region and whether the attitudes discussed have a cultural and/or religious basis will be extracted to determine both if there is an association between these stigmas and cultural/religious attitudes and if this association varies across regions.

We hypothesize that stigma exists toward disabled children globally and that these stigmas do have significant cultural and/or religious associations. Consequently, we hypothesize that these attitudes and stigmas vary across regions; with lower income regions, such as Africa and Asia, possessing a stronger association with negative perceptions toward disabled children compared to higher income regions, such as North America and Europe.

Methods

Databases of Web of Science, PubMed and Embase were used to search for primary research articles discussing childhood disability and its perceptions. In each of the databases, the same keyword search strategies were utilized to obtain search results. The following phrases were keyword search strategies: “childhood disability”, “stigma”, “attitude”, “culture” and “religion.” Of note, searches were done with the keyword phrase of “childhood disability” combined with the each one of the other four aforementioned keywords so that literature obtained would include both searches. For the purposes of this systematic review, negative attitudes were defined as those suggesting that individuals felt that disabled individuals were a burden on the family or society, an embarrassment, were inherently less valuable than their abled body counterparts or were disabled due to the consequences of non-medical causes that were also viewed as negative in that cultural or religious setting (i.e. sins in a past life, a curse from a higher power etc.).

The inclusion criteria for database searches were primary research articles (including case studies) and English language. Exclusion criteria were review articles, book chapters and non-English language literature. Combinations of the keyword searches used and the number of results was compiled in Excel for each database. In order to organize data for quantitative and qualitative synthesis for this systematic review, the flow diagram outlined by Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) was used.¹¹ Figure 1 demonstrates the PRISMA flow structure. The first step of the PRISMA flow after compiling search results from keyword strategies was to remove duplicate results. After this step, the total number of records was screened for relevance. Articles remained included with they included a clear introduction, methods and results section (i.e. primary research article). Articles were eliminated based on the exclusion criteria: not having a clear introduction, methods and results section and no actual discussion of perceptions and attitudes toward disabled children.

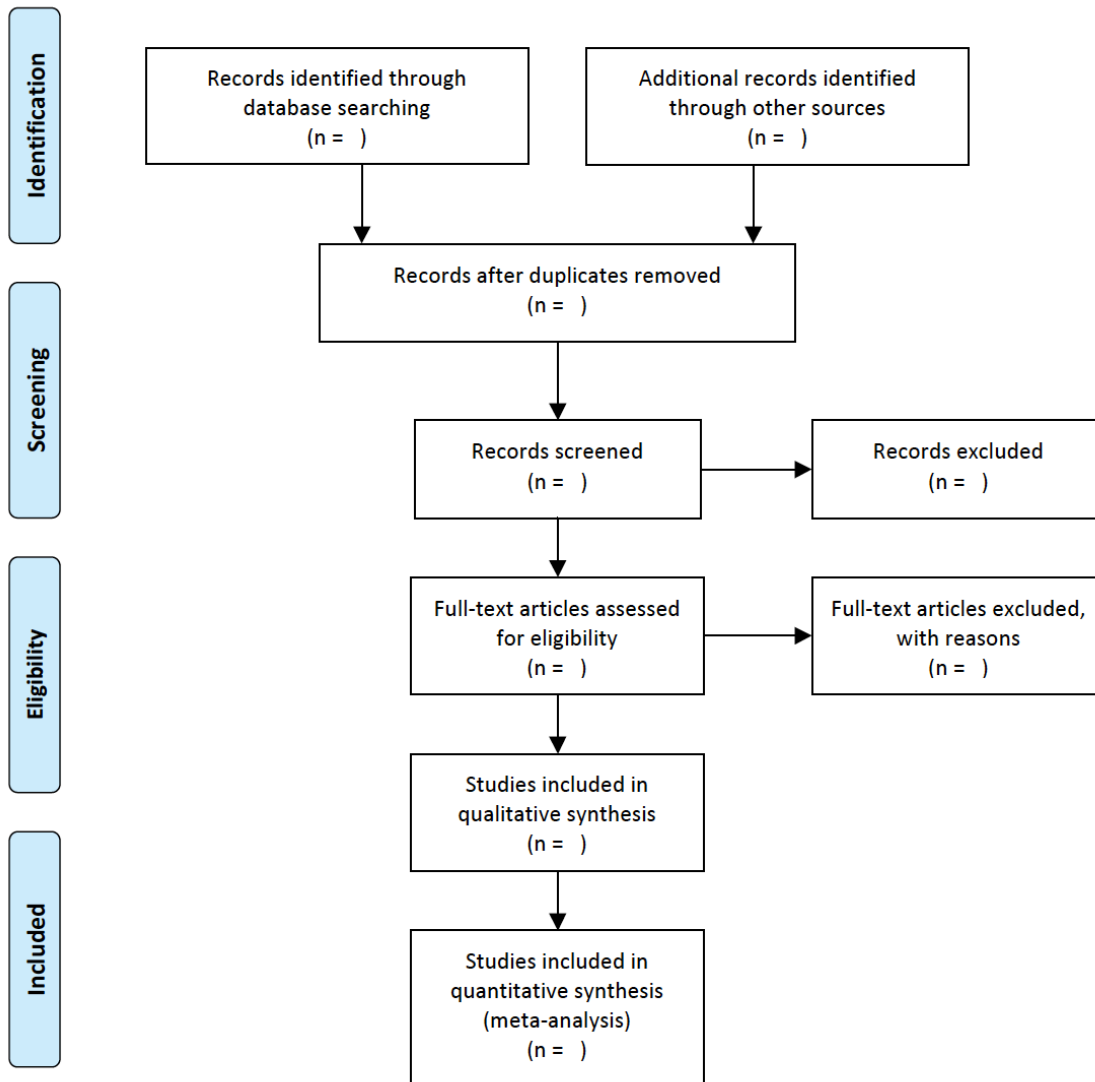


Figure 1: A diagram demonstrating the structure of the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) method that was used for this systematic review

Following the PRISMA flow, articles then remained if they actually described a relationship between an attitude by a particular group toward a disability (or disabilities)—mental, physical, social, and/or emotional—disabled individuals, institutions and resource used by disabled people, or policies that may affect disabled people’s lives. The final number of records was then obtained where defined outcome variables were extracted. The following variables will be extracted from each of the records at this point: region/geographic location, population studied, a description of the attitudes/beliefs/perception/observations obtained, a broader category into which the type of attitude/belief/perception/observation falls (i.e. cultural, religious, regional, national, socioeconomic) and whether or not the description relayed a negative attitude toward disability. These data were placed in a table for qualitative review.

Statistical analysis

Subsequently, meta-analyses were done for outcomes (presence of negative attitude or not) reported in at least two papers. For categorical data measured on the same scale, Odds Ratio and 95% CI were estimated. 2x2 factorial studies were extracted as two separate experiments (religion vs. non-religion; cultural vs. non-cultural, regional differences). These data were entered into the meta-analysis separately. Heterogeneity was quantified with the I^2 test; we deemed substantial heterogeneity to exist when I^2 exceeded 50%. Forest plots were drawn to present the effect size and relative weighting for each study and the overall calculated effect size. In view of potential heterogeneity, all data were synthesized with a random-effects model, with calculation of the τ^2 value.

Results

PubMed, Web of Science and Embase were the primary research databases used in this systematic review. Keyword searches included the phrase “childhood disability” and another term such as “culture”, “stigma”, “attitude” or “religion”. Tables 1, 2 and 3 illustrate the results from PubMed, Web of Science and Embase search results respectively. From the three databases, a total of 648 articles were obtained. 125 of those articles were duplicates across the three databases. Of the 523 remaining, only 114 based on review of titles appeared relevant to the topic of this systematic review. Subsequently, based on review of the abstract, 46 of those papers actually discussed negative attitudes toward disabled children. Lastly, 15 of the 46 papers were included in the final selection for this systematic review, as the rest did not present clear data in their results section regarding how participants viewed disability and the sources for these attitudes. Table 4 highlights these findings.

For the 15 papers remaining, the following data was compiled into Table 5: region, population studied, general description of attitudes, whether or not a negative attitude was present and broader category of aforementioned attitudes (cultural, religious or regional). Of the 15 papers, eight demonstrated that its participants displayed negative attitudes toward disability from a variety of sources, regional, religious and cultural. Seven of the papers demonstrated that participants held favorable attitudes toward disability.

Common themes for negative attitudes toward disability were centered on either participants themselves feeling or experiencing that disabled individuals were viewed as unequal in their societies and that disability was viewed as a punishment. Furthermore, as descriptions from Table 5 demonstrate, many of the negative attitudes described toward disability suggest that participants or those in their community had a strong sense of pity toward disabled children.

Search	Number of Articles (w/ duplicate)
childhood disability, culture	147
childhood disability, stigma	11
childhood disability, attitude	109
childhood disability, religion	9
Total	276

Table 1: Number of articles from PubMed Database with different keyword searches

Inclusion Criteria: Articles (for PubMed selections made are the following: case reports, clinical study, clinical trial, comparative study, journal article, meta analysis, observational study, randomized control trial) and English language

Exclusion criteria: Review article, non-English language

Keyword Search	Number of Records (w/ duplicates)
childhood disability, culture	86
childhood disability, stigma	46
childhood disability, attitude	153
childhood disability, religion	7
Total	292

Table 2: Number of articles from Web of Science Database with different keyword searches

Inclusion Criteria: Article, English language

Exclusion Criteria: Review article, non-English language

Search	Number of Articles (w/ duplicate)
childhood disability, stigma	4
handicapped children, cultural anthropology or culture AND stigma	4
childhood disability, culture	8
childhood disability, religion	4
childhood disability, attitude	60
Total	80

Table 3: Number of articles from Embase Database with different keyword searches

Inclusion Criteria: Article, English language, human subjects

Exclusion Criteria: Review articles, non-English language

Total # of Records	648			Reason for Exclusion:
Total # w/o duplicates	523	Total # excluded	125	Articles were duplicates
Total # screened	114	Total # excluded	409	Articles not discussing disabled individual and stigma/culture/attitude/religion
Total # of records where outcome variables will be extracted)	46	Total # excluded w/ reason	68	Articles either not relevant to disabled children directly, do not discuss attitude, discuss public health more than attitudes, do not provide clear associations between attitude/culture/religion and disability
# of studies to be included for synthesis	15	Total # excluded	31	Articles did not have clear data in the results section of how many participants held negative attitudes and how these attitudes were characterized

Table 4: Cumulative table of articles pulled from the three databases following a PRISMA flow for systematic reviews

Geographic Location	Population	Article	Description	Category	Overall Negative Attitude (stigma toward disabled)?
United Kingdom	British Pakistanis	Croot et al. ¹²	Families face stigmas within cultural groups. Many families cite theological reasons for disability	Religious	Yes
Pakistan	Urban Pakistani (parents)	Mirza et al. ¹³	Concern that children will be abused by community members. Parental beliefs that caring for a child was a pious act for Allah, despite stigma	Religious	Yes
Pakistan	Urban Pakistani (parents)	Lakhani et al. ¹⁴	Disability is the result of fate, a sense of stigma and self-blame toward parents. Disabled children still contribute positively to their lives	Religious	Yes
Libya and United Kingdom	University students/staff at disabled children's schools	Benomir et al. ¹⁵	Compared to UK counterparts, Libyan participants had higher rates of feeling that disabled individuals should be more excluded from society	Regional	Yes
Canada	South Asian immigrants	Daudji et al. ¹⁶	All mothers described child's disability on medical terms, many felt God had a role. Strong belief in child's cognitive abilities and rehabilitation. Mothers felt less stigma in Canada than back in South Asia	Religious	Yes
Puerto Rico	Puerto Rican families with disabled children	Gannoti et al. ¹⁷	Cultural belief present that disabled children are weak or fragile. Family's felt the need to be extra nurturing. Fear of emotionally stressing a disabled child	Cultural	No

Cambodia	Cambodian Parents of disabled children	Morgan et al. ¹⁸	Of the study participants, some parents attributed biomedical causes to a child's disability, while an equal amount believed in more traditional causes, like spirits or karma	Cultural	No
Vietnam	Vietnamese caregivers of disabled children	Ngo et al. ¹⁹	Parents felt that they and their children faced greater social exclusion than their counterparts. Participants often felt that a child with a disability will not be able to get a job or get married, discrediting them as individuals	Cultural	Yes
Nepal	New mothers	Simkhada et al. ²⁰	Participants tended to believe that disabilities were mostly physical, but felt that disabled individuals deserve equal status with others, deserve to have leadership positions and get married. Attitudes generally positive. Not much belief in karma or fate for causes of disability	Cultural	No
Canada	Italo-Canadian mothers	Carr et al. ²¹	Many mothers of disabled children in this group cited a variety of traditional reasons for their child's disability, ranging from the evil eye, punishment for wrong doing or "bad blood"	Cultural	Yes
Netherlands	Parents	de Boer et al. ²²	Primary school parents felt disabled children were included in a classroom/social group at their local school positively. Parents felt less strongly about those children with profound intellectual and mental disability	Regional	No

Malawi	HIV + children and their siblings	Devendra et al. ²³	HIV + much more likely to have a disability compared to their HIV - siblings. Parents often report that they faced stigma toward disability as a medical barrier for their HIV + children	Regional	Yes
United States	Preschool children	Diamond et al. ²⁴	Preschool children who had regular contact with disabled classmates has significantly higher measurements of acceptances toward disabled individuals compared to those who did not	Regional	No
United States	African American parents of disabled children	Evans et al. ²⁵	African American parents often felt that religion and community was essential for supporting them with disabled children. They did not any particular stigma, but felt that Church and familial involvement were positive factors	Cultural	No
United States	Mexican American parents	Mardiros et al. ²⁶	Parents easily attributed a child's disability to a particular medical diagnosis and remained hopeful that science and God would help find a cure "someday". A variety of religious reasons and bases were given for why mothers had disabled children. Children not considered ill or sick	Religious	No

Table 5: Categorical and descriptive data pulled from the fifteen primary research articles at the end of the PRISMA flow with columns representing, region, population, author, description of attitude, general category of attitude and whether or not a negative attitude is present or not

Notably, cultural and religious themes of karma, “the evil eye” or divine punishment were mentioned in these papers, across geographic regions, but appeared more prevalent in both African and Asian societies and ethnic groups. Additionally, although biomedical rationale for disability was mentioned in every paper, participants often attributed these cultural and/or religious sources as highly relevant to the cause of a child’s disability.

The lack of negative attitudes toward disability appeared to be relatively positive in nature. On qualitative review, disability was more often attributed to biomedical sources (genetics, birth difficulties, physical disease) for participants that did not have negative attitudes toward disability. Notably, in North American studies, biomedical causes were prevalent in how participants chose to explain disability. A common theme for participants who viewed disability relatively favorably was the idea that having a child with a disability was a blessing. Participants who noted that religion or cultural forces were important in their lives and who had positive thoughts about disability often incorporated sentiments of how having a disabled child was a blessing from God since they had the opportunity to perform a sacred task in caring for a child that most others would find too challenging. Some participants who viewed disabled children relatively favorably felt that their own religious and cultural institutions contributed positively to disabled individuals by offering community support and respite. Table 5 demonstrates these descriptions.

Meta analyses were done to determine the association between negative attitudes and religious sources, negative attitudes and cultural sources and negative attitudes and different regions. Figure 1 demonstrates that those with strong religious attitudes and beliefs are 5.7 times as likely to hold negative attitudes toward disabled individuals than those without religious beliefs. However, this association was determined not to be statistically significant as the odds ratio includes 1 (0.10, 333.97). Figure 2 demonstrates the Egger’s bias for negative attitudes and religious vs. not religious attitudes with a p value of 0.45, confirming these results not to be statistically significant.

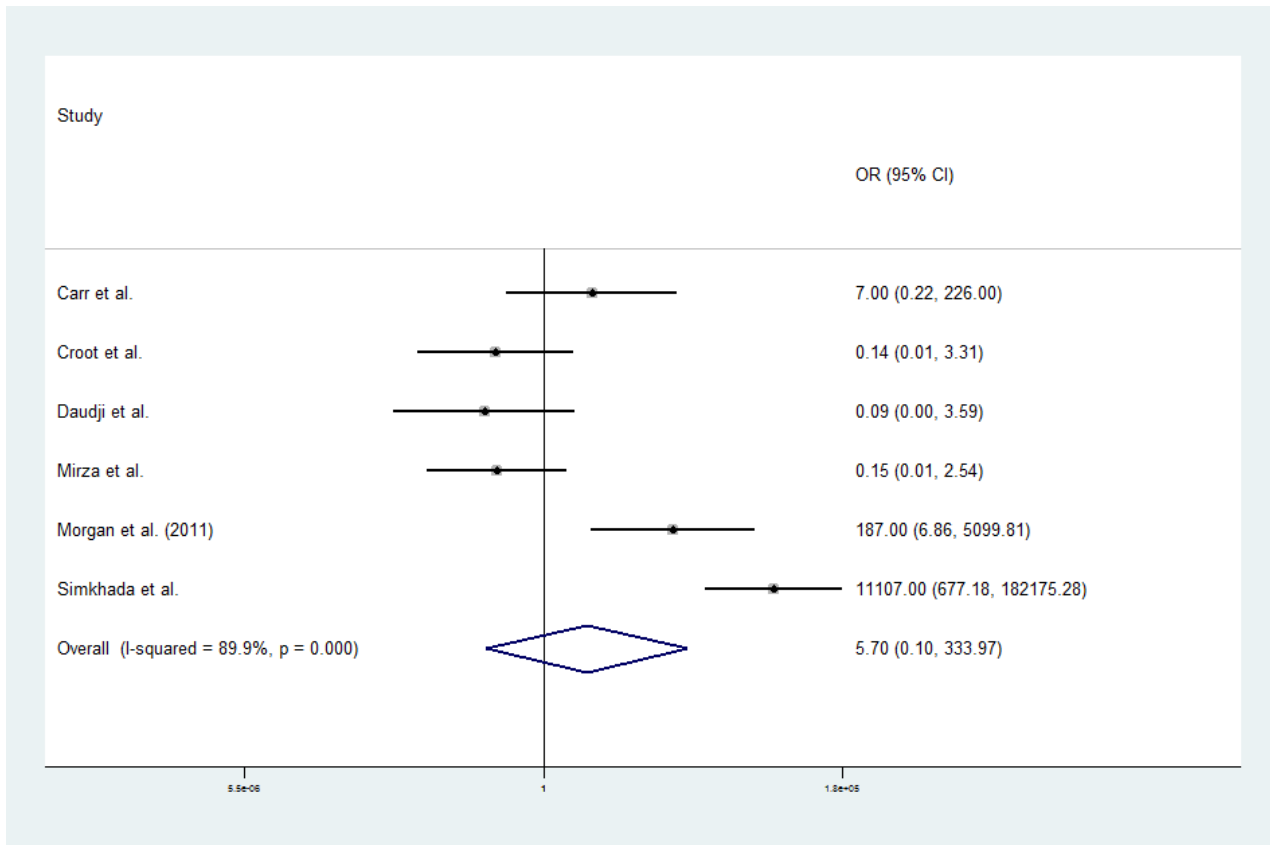


Figure 2: Forest plot of likelihood of negative attitude on the basis of religion. Combined Odds Ratio 5.70 (0.10, 333.97)

Figure 3 similarly demonstrates in its forest plot that those with strong cultural attitudes are 4.56 times as likely hold negative attitudes to disabled individuals than those without strong cultural attitudes. Likewise, the overall odds ration included 1 (0.19, 111.17) with Figure 4 demonstrates an Egger's bias diagram with a p value of 0.66.

Figures 5 demonstrates that the European region was associated a 30% increased likelihood of holding negative attitudes toward disabled children compared to the North American region. Yet, the African and Asian region had a 61% decreased likelihood of holding negative attitudes compared to the North American region. Although figure 5 demonstrates in the forest plot that while the data between North America vs. Africa and Asia were less homogenous compared to North America vs. Europe, both relationships were not significant as Odds Ratios also included 1. Figure 6 demonstrates the associated Egger's bias for negative attitudes and regions and illustrates a p value of 0.69 and 0.27 for North America vs. Europe and North America vs. Asia & Africa respectively.

The data from these meta analyses demonstrate that while cultural and religious attitudes are associated with an increased likelihood of negative attitudes toward disability, these results are not statistically significant. Additionally, while region does seem to associate with increased likelihood if holding negative attitudes toward disabled children, these associations are similarly not deemed to be statistically significant.

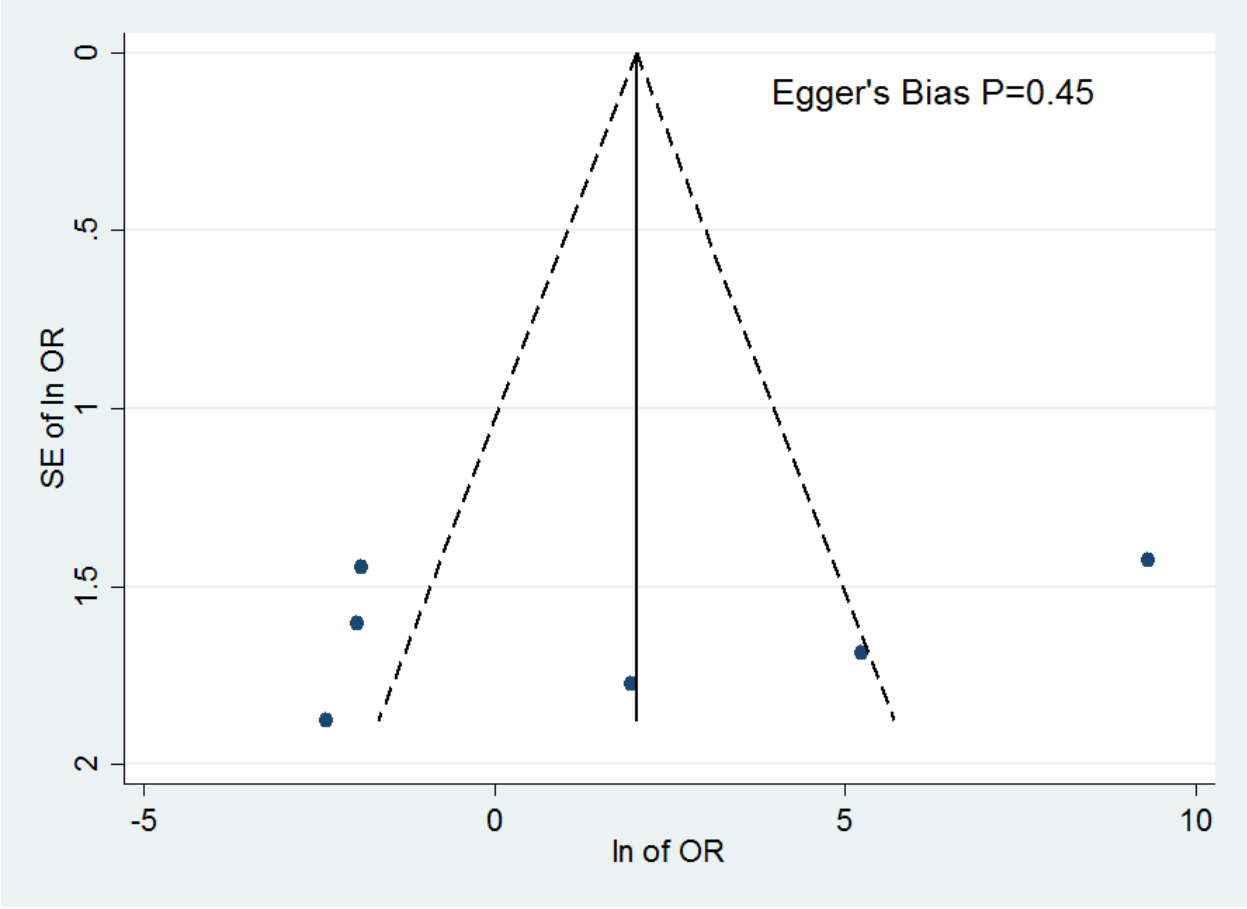


Figure 3: Egger's bias diagram for likelihood of negative attitudes on basis of religion. P value of 0.45



Figure 4: Forest plot of likelihood of negative attitude on the basis of culture. Combined Odds Ratio 4.56 (0.19, 111.17)

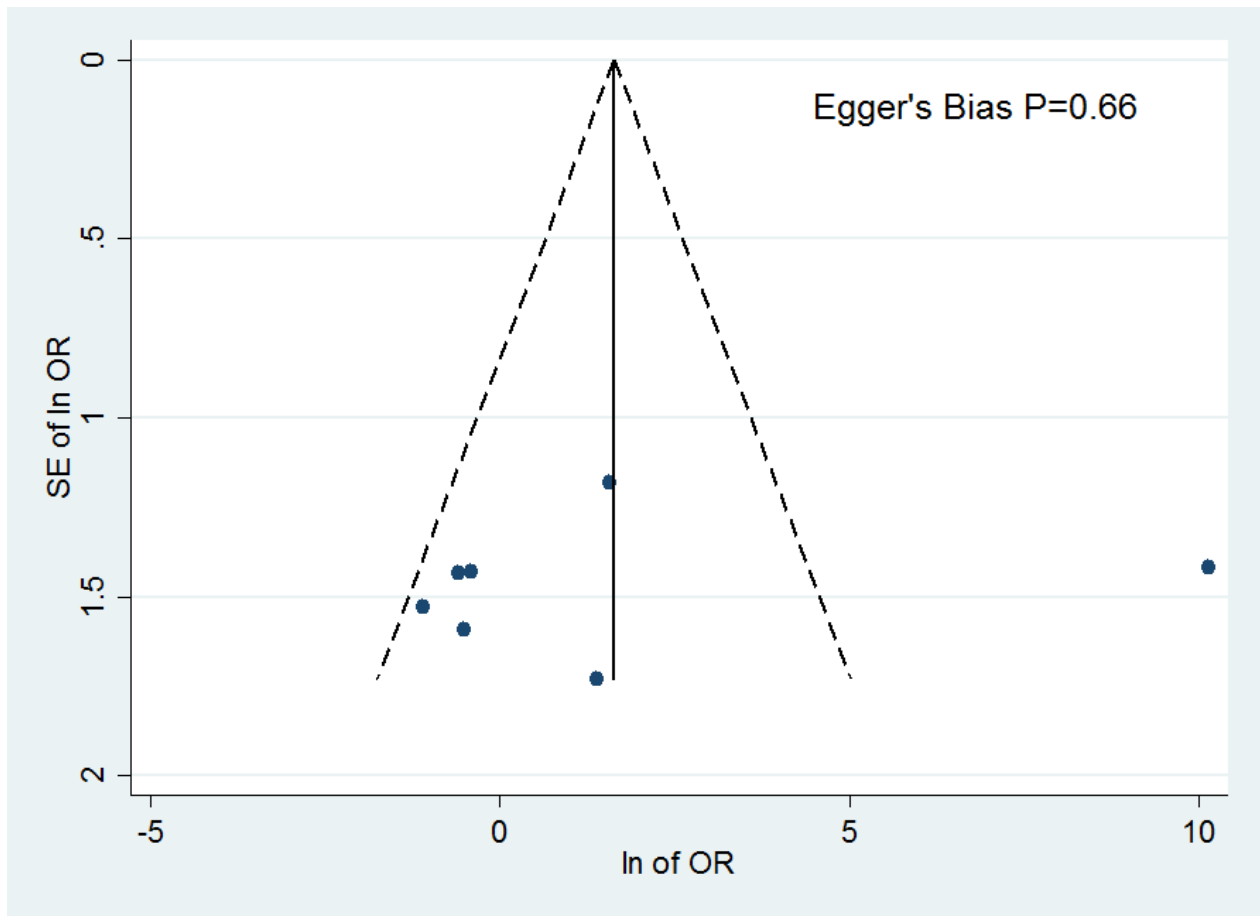


Figure 5: Egger's bias diagram for likelihood of negative attitudes on basis of culture. P value of 0.66

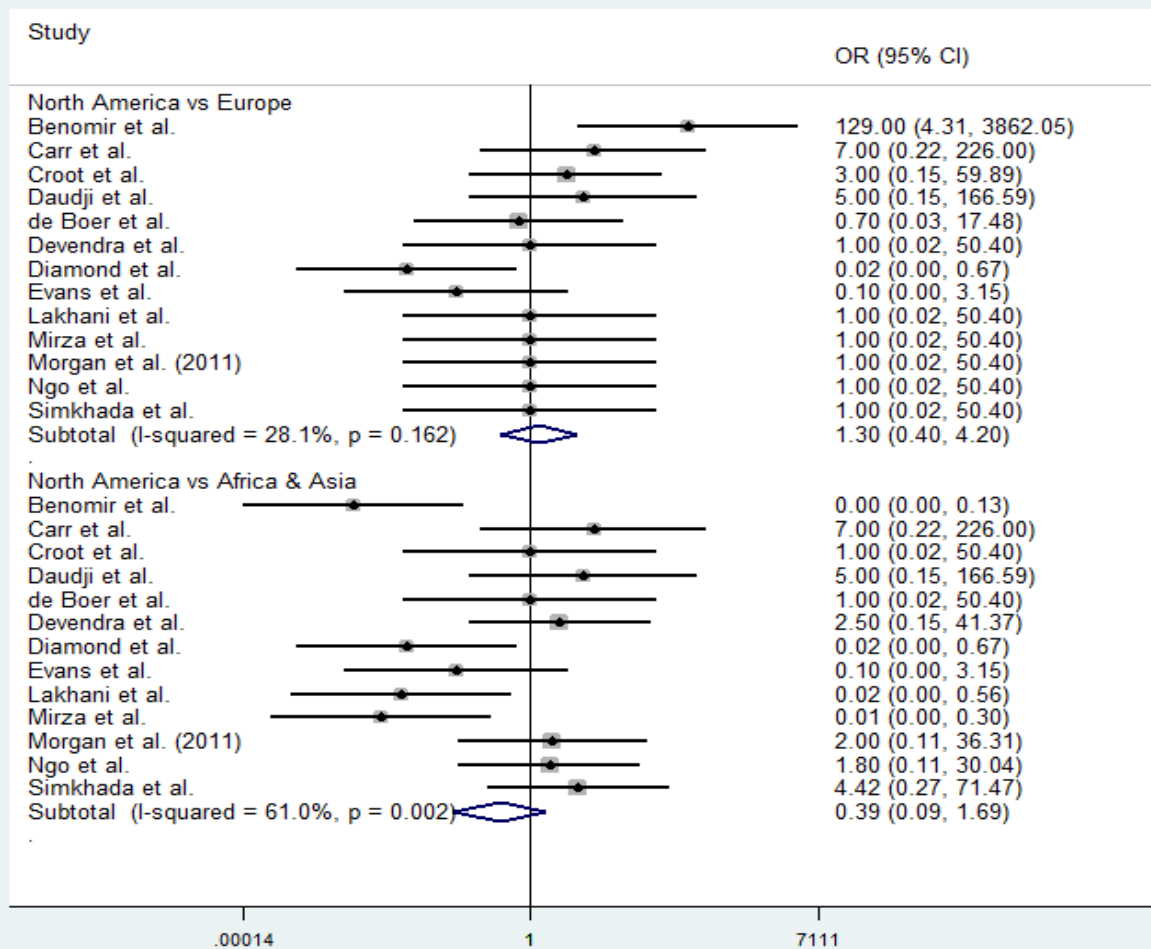


Figure 6: Forest plot of how likely region (Europe in top half and Asia and Africa in bottom half) are associated with holding negative attitudes when compared to North America. Combined Odds Ratio for North America vs. Europe is 1.30 (0.40, 4.20). Combined Odds Ratio for North America vs. Africa and Asia is 0.39 (0.09, 1.69).

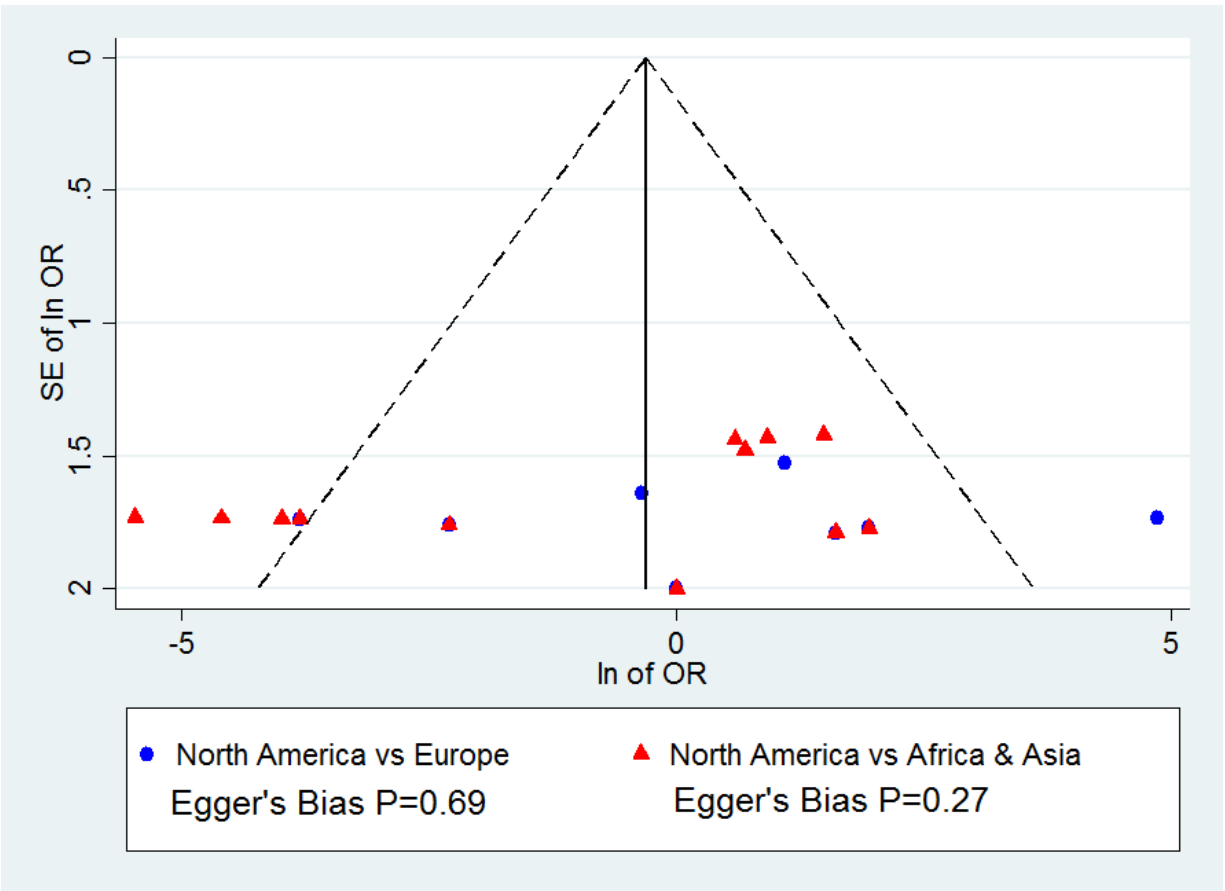


Figure 7: Egger's bias diagram for association with region and negative attitudes for North America vs. Europe (blue dot) and North America vs. Africa & Asia (red triangle). P values of 0.69 and 0.27 respectively

Discussion

The qualitative results shown in Table 5 indeed demonstrate that negative attitudes toward disabled children do exist globally and that these attitudes have been described as having basis in cultural and religious beliefs. In these papers, authors detailing stories of participants who expressed that they or their children faced significant stigma in their communities due to a variety of beliefs, spanning from culturally held ones that disabled children could not contribute to society-at-large to religious ones that disabled children were recipients of an evil eye and victims of supernatural forces. As expected, review of the literature and outcomes extracted displayed several nuances both in how disability was described and how it appeared to be associated with cultural and religious etiologies. From beliefs in Vietnam illustrating that participants felt that disabled children are not able to get a job, get married or achieve other standardized societal expectations to a Puerto Rican study expressing the idea that while disabled children are fundamentally weaker than their counterparts, they deserve to be nurtured, it is evident that different the variety of beliefs encompassing disability is diverse. Meta analyses demonstrated that while there appear to be associations with cultural and religious beliefs with negative attitudes toward disability, these associations are not statistically valid. Regardless, the presence of these clear, poignant examples in the literature and pervasive discrepancies in how disabled children fare globally suggests that stigma is truly present against disabled children, though the broader association to culture and religion at large is unclear.

Qualitative review of Table 5 also demonstrates that appears to be regional variation in the likelihood of holding negative attitudes toward disabled individuals. Studies focusing on disability within Africa or Asia tended to contain descriptions that focused on negative aspects or causes for disability, with a few notable exceptions. Caregivers in Malawi noted that despite their children being HIV positive, their disabled children faced additional discrimination in society and in health care settings. However, as with the association of negative attitudes with culture and religions, certain papers displayed relatively positive attitudes toward disability from individuals in Africa and Asia. Socio-economically advantaged parents in Karachi, Pakistan tended to feel that their disabled children contributed quite positively in their own lives and

communities. Despite what appears to be a wider trend in how disability is perceived globally, meta analyses regarding the relationship between region and negative attitude also demonstrated that there is no significant association of increased likelihood of negative attitudes with a particular region. As such, statistical analyses done state that our hypotheses—that negative attitudes toward disability would be associated with cultural, religious and regional variables—was refuted. We failed to reject the null hypothesis—no relationship between negative attitudes with religion, culture and/or region—for this systematic review based on aforementioned analyses.

In mitigating the discrepancy between what appears to be common theme in the literature—that disabled children do experience stigma based on cultural/religiously held beliefs and that these beliefs may vary in likelihood across region—and the lack of statistical significance on meta analyses, we consider the possibility of a type II error, as we failed to reject the null hypothesis. Our relatively small sample size of primary research articles for the analyses conducted may have contributed to this phenomenon. Furthermore, the majority of primary research articles on the topic themselves employ a small number of participants, further increasing the likelihood of a type II error. While we cannot ascertain that a larger sample size both in primary research articles or individual participants pooled for meta analyses would lead to statistically significant findings, it may have altered the results obtained.

Future Directions

Further research is needed to examine if whether there are cultural and religious associations with the negative attitudes disabled individuals face. While meta analyses did not reveal any statistically significant results, future research would benefit from incorporating more research articles in analyses to increase sample size. Additionally, to expand our scope of knowledge regarding the topic of childhood disability and its attitudes that affect those disabled children, increasing surveys to collect data from the communities on the stigmas these children face and why they are present is of great use. By incorporating standardized questionnaires in medical offices and social work visits for caregivers and children alike on what stigmas and attitudes they face has the benefit of expanding the depth of our understanding on the issues that not only individual children face, but also the disabled community at large. Utilizing such efforts in higher income nations like the United States or United Kingdom can serve as a model for lower-income nations where the issues that face disabled children are severe.

Conclusion

The stigma against disabled children is present though highly difficult to quantify. On review of the primary literature concerning attitudes toward childhood disability globally, it appears that there is basis of culture, religion and region on how likely negative attitudes are to be present. Although meta analyses do not currently demonstrate these results in any statistical significance, the plight that disabled children face worldwide warrants more research to both determine and clarify why these stigmata are present. By delving into further research on the topic, specific interventions aimed combat these attitudes can be created. Ultimately, the goal of this body of work is to ensure that disabled children receive equal and fair treatment, both in medicine and in their communities.

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**COMPREHENSIVE REVIEW OF THE PERCEPTIONS AND ATTITUDES
THAT DISABLED CHILDREN FACE GLOBALLY**

Introduction

Disability is strikingly common globally. As defined by UNICEF and UN, disabled children refers to individuals under 18 who have “long term physical, mental, or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with other.”¹ Estimates from UNICEF suggest that 15% of the world’s population, nearly 1 billion people, live with some form of disability. Furthermore, disabled children may number up to 150 million, with 13 million children living with severe disabilities.

Moreover, current reports from UNICEF and the United Nations demonstrate a concern for the prejudices and disparities that disabled children face around the world, particularly in low income nations, regions or populations. Furthermore, UNICEF itself reports that, within a global context, disabled children’s ability to access healthcare and other resources may very well be “influenced by cultural attitudes” among other factors.² In order to combat the disparities and discriminations that disabled individuals face, the United Nations established the Convention on the Rights of Persons with Disabilities (CRPD).

Signed and ratified by most nations worldwide, the CRPD also, in particular, mentions in its articles the relationship between attitudes and perceptions and disabled children.³ For example, Article 8b specifically refers to the goal of “...combat[ing] stereotypes, prejudices...to persons with disabilities...in all areas of life” in order to elucidate the UN’s recognition via the CRPD that cultural factors and prejudices may impact several facets of disabled individuals’ lives. In continuation, the CRPD also clarifies in Articles that one of its many goals is to “prevent discriminatory denial of health care...on the basis of disability,” which continues to demonstrate the UN’s commitment to treat disabled individuals equitably to their non disabled counterparts.

However, despite policy based interventions and an understanding that disabled children suffer disparities, the current literature demonstrates both that disabled individuals consistently suffer discrimination and worse outcomes in health care. Indeed, statements from UNICEF and the UN imply that there may be a cultural basis for the perceptions and treatment toward disabled children. Consequently, similar literature also shows that cultural attitudes and

perceptions can often be isolated as a reason for the aforementioned discrimination and outcomes. Moreover, the current literature also describes the variety of existing attitudes and perceptions toward disabled children globally. This comprehensive literature review will, therefore, discuss not only the disparities present toward disabled individuals, but also the varying perceptions of disabled children globally that are present in the literature.

Disparities of Disability

Current literature demonstrates that disabled individuals, in a variety of ways, have worse health outcomes compared to their non-disabled counterparts. In their paper, Havercamp et al. discuss how disabled individuals not only have more chronic health problems, but also have less access help and insufficient emotional support.⁴ In considering disabled individuals' health and health management, Diab et al. and Pharr et al. also note in their separate that severely disabled individuals are also less likely to receive certain public health and preventive measures, like vaccines, mammograms and Pap smears.⁵⁶ In particular, the literature here describes that the source of these disparities may be due to healthcare providers' perception of disabled individuals' lives and behaviors—i.e. disabled individuals not being sexually active and therefore not “needing” Pap smears. In particular, there is a strong presence in the literature that disabled children are also victim to these disparities and negative attitudes.

For example, Tsai et al. note that despite the presence of universal healthcare in Taiwan, disabled children were much less likely to access various preventative health services compared to their non-disabled counterparts.⁷ Likewise, Inkelas et al. noted in their study that disabled children with concurrent chronic medical conditions are more likely to have more unmet needs compared to control disabled children without chronic medical conditions. In particular, these differences in their study were compounded by ethnicity as African American disabled children with chronic medical conditions had the highest levels of unmet care.⁸ Work from the both Tsai et al. and Inkelas et al. suggest that disabled children, by nature of being disabled, are at a greater disadvantage in achieving healthcare goals. In particular, in considering separate populations, Inkelas et al. suggest that disenfranchised minority groups, like African American disabled children fare worse than their non African-American counterparts.

Disabled children have also been shown in the literature to subject to outright violence and neglect, often stemming from cultural ideas and perceptions. For instance, Bayat notes in her study of rural communities in Cote d'Ivoire that cultural attitudes toward disabled children accounted for the abandonment, abuse and killing in community settings.⁹ Through interviews, Bayat describes that negative attitudes toward children with Down syndrome (or “snake

children” as they are referred to by community members) are viewed as abhorrent and awkward due to their physical movements and characteristics. Consequently, cultural attitudes elicited in these interviews reveal the effects of the perceptions and attitudes on the lives of children with disabilities.

Overall, the literature has shown that disabled individuals suffer clear disparities both in health and healthcare management, with disabled children being particularly vulnerable population. Similarly, disabled children have also been shown to suffer abuse, violence and neglect for a variety of reasons, including the cultural attitudes and perceptions toward disability in the communities that they live in.

Disability Across Culture

Importantly, a review of the literature demonstrates that despite a standardized view and definition of disability set by policy-making organizations, namely UNICEF and the UN, the manifestation and characteristics of disability vary greatly across cultures and regions. Benfer et al. in their paper notes that the characteristics of cerebral palsy varied between a high-income and low-income country, despite children having the same diagnosed medical condition. By utilizing the Gross Motor Function Classification System and the same raters, they determined that children with cerebral palsy in Bangladesh had worse cognitive skills and gross motor function compared to their Australian counterparts.¹⁰ Likewise, Elsheikh et al. in their research also determined that some nuanced aspects of childhood disability vary across culture. As evidenced by their neuropsychological assessments, Finnish children with Autism Spectrum Disorder were shown to demonstrate significantly higher verbal and non-verbal fluency in addition to better comprehension of sentence structure compared to peer Egyptian children.¹¹ Indeed, Elsheikh et al. speculate that differences in language and socialization of children in these largely different cultures may be the basis for why ASD varies between the groups. In regards to disability across culture, the literature here clearly demonstrates that the features of individual physical and mental disabilities is amenable to change based on the cultural environment of the disabled child.

Perception and attitudes toward childhood disability: North American and European experiences

Current literature regarding the perceptions and attitudes toward childhood disability is diverse. A variety of geographic locations and populations have been studied. In North America, the literature demonstrates that perceptions and attitudes vary greatly depending on particular subpopulations studied.

For instance, in their study regarding South Asian immigrant mothers in Canada and their disabled children, Daudji et al. utilized interviews to ascertain what attitudes and perceptions this subculture of mothers had toward disabled children. Mothers described a mixture of both traditional and western perceptions of their child's disability.¹² Notably, nearly all the mothers who participated in this study reported that they and their children experience less stigma in Canada than back in their respective native countries.

Within a different ethnic group in Canada, Carr et al. reported that their study of Italo-Canadian mothers of disabled children demonstrated that these women held traditional views as the cause of their child's disability.¹³ Of note, both first generation and second generation Italo-Canadian women cited "bad blood," a punishment for previous wrong doings and *malocchio*, or the "evil eye" as to why their child was disabled.

Similarly within the United States, attitudes toward disability vary greatly depending on the particular population or ethnic group analyzed. Mardiros et al. in their analysis of Mexican American parents' understanding of childhood disability noted that parents believed and attributed their child's disability to a clear medical diagnosis.¹⁴ However, simultaneously, these parents held a strong belief that their God could help cure their child and that sin could be a reason for why mothers had children with disabilities. Furthermore, in a different study on African American parents' perception of childhood disabilities, Evans et al. noted that they perceived their experiences with their disabled children positively, as the families in the study tended to report that their use of the local Church and other community support had helped them immensely.¹⁵

In considering other Hispanic populations in North America, Gannoti et al. delve into beliefs regarding Puerto Rican families' views on disabled children. Among the interviews conducted was a strong belief among the participants that disabled children were weaker and more fragile than their peers.¹⁶ Additionally, families stated that while they greatly loved disabled children, they also viewed them as emotionally weak; thereby needing to have their feelings protected.

Similarly, some surveys done of European families demonstrate tolerance of disability but negative attitudes toward its inclusion in broader education. Parents of primary school children in the northern Netherlands felt favorable attitudes toward disabled children, but still had some negative beliefs regarding the conclusion of disabled children with their peers. In particular, there was a negative correlation between experience with disability and strong beliefs in inclusion of disabled individuals.¹⁷

Attitudes toward disability in North America and Europe range greatly from accepting biomedical rationales and cherishing disabled children to cultural beliefs regarding perceived punishment—for mother or child—and weakness for disabled children. The literature demonstrated such findings and diverse perspectives from a variety of ethnic and minority groups present in North America.

It can be assumed much of these attitudes and perceptions, particularly in North America are learned. Cultural influences abound in North American populations due to their diversity and heterogeneity. In considering how young children view disability, evidence demonstrated that pre-school aged children who had contact with disabled peers had much higher rates of acceptance and positive thoughts toward their disabled classmates compared to children who were not exposed to disabled peers.¹⁸

Perception and attitudes toward childhood disability: Life in lower income countries

Because of South Asia's unique and diverse cultural landscape, the current literature describes a variety of attitudes and perceptions present toward disabled children in the region.

In order to study the attitudes of parents of disabled children in Karachi—Pakistan's largest city—Lakhani et al. (2013) utilized interviews of mothers of children with severe intellectual disability who were attending a special needs day care. Mothers felt that their disabled children contributed positively to their and their family's lives, despite some stigma that they faced.¹⁹ However, participants also noted that they felt that disability was the result of fate; many families attributed their child's condition to God's will. Likewise, Mirza et al. in studying attitudes from groups of Pakistani parents described similar attitudes.²⁰ Indeed, participants felt that caring for a disabled child was a "pious" act for Allah, even if they feared the stigma their child faced in the community. Moreover, these participants also noted that they had strong concerns that others would abuse their child since community members may not value disabled children.

Simkhada et al., in their work, also report attitudes that new mothers in rural Nepal had toward disabled children.²¹ Although, the mothers included in the study did not themselves necessarily have a disabled child, the majority of the women felt that true disability was mostly physical and that disabled children deserve to be treated equally, and as adults, deserve to get married and play a role in their communities. Attitudes were described as generally positive and mothers rarely felt that traditional sentiments of karma or fate were a cause of disability.

While the literature seems to suggest that attitudes toward disabled children in Pakistan are more traditional/religious in nature than those in Nepal, both populations and cultures studied felt that disabled children were worthy of dignity. Nepali participants in particular tended to view disabled children and the causes of their disability on more equitable and biomedical terms respectively.

Vietnamese culture appears to disability on similar terms like those participants in South Asia. Parents of disabled children in Vietnamese surveys felt tangibly that they were often excluded socially from other families. Of note, several families voiced concern regarding how their children would be able to achieve normal milestones culturally reserved for non-disabled children—marriage, jobs, having children etc.²² In neighboring Cambodia, the concern regarding disabled children’s welfare also appears to stem from traditional ideas and modalities of success. While some participants noted their concern that their disabled children would not participate in cultural milestones like marriage, many simply attributed the disability to causes like karma.²³ Again, notably, the diversity of beliefs regarding disability in Cambodia mimics the diversity seen in the Western Hemisphere, namely that some families felt they could attribute biomedical causes of disease over traditional beliefs for disability.

Perception and attitudes toward childhood disability: Cross-cultural

In directly comparing differing cultural attitudes toward childhood disability, Benomir et al. compared the attitudes present toward individual with intellectual disabilities in respondents in the United Kingdom and Libya.²⁴ Respondents in the study were students at universities and staff at schools for individuals with intellectual disabilities in both the United Kingdom and Libya. Of significance, the study utilized values for “Exclusion”, a measurement of the desire to exclude intellectually disabled individuals from community life, and “Empowerment,” a measure of whether respondents believe that disabled people should be able to make their own decisions, compared to their Libyan counterparts. British respondents reported significantly lower values for “Exclusion” scale and higher values for “Empowerment” compared to their Libyan counterparts. Benomir et al.’s work suggests that people in Libya and United Kingdom not only hold different perspectives on disability, but also that individuals in the United Kingdom are more likely to believe that disabled individuals should be more included and independent than their Libyan counterparts.

Conclusion

Disability is present in every corner of the world and disabled individuals make up a significant portion of the global populations. Existing literature has not only documented the existence of disparities in health, healthcare and community involved between disabled individuals and their peers, but also has revealed that disabled children form a particularly vulnerable subpopulation. Indeed, as the literature as shown, perceptions and attitudes toward disabled children often stem from root cultural, religious and/or regional beliefs. Indeed, while the general trend from the literature seems to suggest that individuals living in North America may hold both more biomedical reasons for disability and beliefs that disabled children should be treated equally, understanding the how attitudes differ among population in similar regions provides a richer understanding of how nuanced perceptions of disability are.

Consequently, compiling general summaries of how various populations face and value childhood disability has the utility to allow for targeted approaches to effect change in the myriad of communities that disabled children inhabit. Disability varies greatly across region and current literature is teeming with several examples of from families, scientists and disabled individuals themselves on how this disability affects daily life. The cultural bases of such attitudes intersect both anthropologic and medical disciplines as disabled children do consistently have worse healthcare outcomes than their peers. Further reviews would benefit from a rich cataloging of these attitudes based on culture and geography so that both anthropologists and healthcare providers can better understand how to assist those disabled in their societies and globally.

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