Summary Report: The Economic Costs of Exclusion and Gains of Inclusion of People with Disabilities

Evidence from Low and Middle Income Countries

With the landmark passing of the United Nations' *Convention on the Rights of Persons with Disabilities* (UNCRPD), ratifying countries pledged to promote the full inclusion of people with disabilities in all areas of society.[1] However, many nations have struggled to make significant progress in implementing the commitments set forth by the Convention. Consequently, people with disabilities are still experiencing persistent inequalities on almost all indicators of social, political, cultural and economic participation compared to the rest of the population.[2]

The extensive exclusion of people with disabilities from society is indefensible from a human rights and social justice perspective. However, while this may be widely acknowledged, there is a common perception that inclusive interventions are not financially feasible particularly in the resource-constrained settings of many low and middle income countries (LMICs).

Although the human rights case alone is sufficient to necessitate action, there is also evidence that promoting inclusion of people with disabilities is beneficial from an economic standpoint. Some individual studies have estimated the costs of exclusion and potential gains from inclusion in areas such as work or education, however a comprehensive economics-based argument has not been extensively detailed.

This report seeks to explore the potential pathways through which exclusion of people with disabilities may generate economic costs to individuals, their families and societies at large. Additionally, potential economic gains that may be realised through inclusion are investigated.

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[1] UN Enable. UN Enable: Latest Developments 2014. Available from: http://www.un.org/disabilities/
[2] World Health Organization. World report on disability: World Health Organization; 2011. Available from: http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf.

Part A: Main Findings of Systematic Review on Disability and Poverty

In total, 97 epidemiological studies from LMICs that examined the relationship between disability and poverty were included in the systematic review.

- The majority of studies (78 of 97, 80%) found a positive, statistically significant association between disability and economic poverty.
- This relationship was found across age groups, location, disability types and study designs.
- For studies that also measured the relationship between disability and unemployment, 12 of 17 (71%) found a statistically significant, positive relationship.

With 80% of studies reporting a link between poverty and disability, the results of this systematic review provide a robust empirical basis to support the theorized disability-poverty link.

Part B: Main Findings on Economic Costs of Exclusion and Gains of Inclusion of People with Disabilities

Part B focuses on education, work/employment and health; three key life areas in which people with disabilities experience widespread exclusion as a result of physical, attitudinal, financial and policy barriers.[3] The pathways of economic impact from exclusion/inclusion are summarized, along with supporting studies providing estimates of the costs/gains.

Education

Pathway 1: Earnings and labour productivity – Exclusion from education may lead to lower employment and earning potential among people with disabilities. Not only does this make individuals and their families more vulnerable to poverty, but it can also limit national economic growth.

- In Bangladesh, reductions in wage earnings attributed to lower levels of education among people with disabilities and their child caregivers were estimated to cost the economy US$54 million per year.[4]

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[3] ibid
[4] Project appraisal document on a proposed credit to the People's Republic of Bangladesh for a disability and children-at-risk project. Washington: World Bank; 2008.

However, promoting inclusion can lead to substantial gains:

- In Nepal, the inclusion of people with sensory or physical impairments in schools was estimated to generate wage returns of 20%.[5]
- In China, estimates indicated each additional year of schooling for people with disabilities lead to a wage increase of 5% for rural areas and 8% for urban areas.[6]
- Education can close the poverty gap between people with and without disabilities: across 13 LMICs, each additional year of schooling completed by an adult with a disability reduced the probability by 2-5% that his/her household belonged to the poorest two quintiles.[7]

Pathway 2: Non-employment costs and benefits – Increasing access to education can also have positive impacts in areas such as crime, control of population growth, health, citizen participation and gender empowerment, which in turn have financial and social consequences.

Work/Employment

Pathway 1: Individual earnings and household income - Exclusion from work/employment of people with disabilities may lead to lower income due to disproportionately high levels of underemployment/unemployment as well as lower pay-scales for performing the same work as individuals without disabilities.[1] In addition to challenges accessing formal employment, people with disabilities also face barriers to informal work and self-employment, due, for instance, to exclusion from micro-credit schemes.[2] Finally, caregivers may forgo work opportunities to assist family members with disabilities.

- In Bangladesh, estimates indicated that exclusion of people with disabilities from the labour market results in a total loss of US$891 million/year; income losses among adult caregivers adds an additional loss of US$234 million/year.[8]
- In Morocco, lost income due to exclusion from work was estimated to result in national level losses of 9.2 billion dirhams (approximately US$1.1 billion).[9]
- In South Africa, lost earnings averaged US$4,798 per adult with severe depression or anxiety disorder per year (about half of GDP per capita) totalling US$3.6 billion when aggregated to the national level.[10]

[5] Lamichhane K. Disability and barriers to education: evidence from Nepal. Scandinavian Journal of Disability Research. 2013;15(4):311-24
[6] Liao J, Zhao J. Rate of Returns to Education of Persons with Disabilities in Rural China. 2013.
[7] Filmer, D. (2008). Disability, poverty, and schooling in developing countries: Results from 14 household surveys. *World Bank Economic Review*, 22(1), 141-163. doi: 10.1093/wber/lhm021
[8] Project appraisal document on a proposed credit to the People's Republic of Bangladesh for a disability and children-at-risk project project. Washington: World Bank; 2008.
[9] Collectif pour la promotion des droits des personnes en situation de handicap. Etude sur le coût économique de l'exclusion du marché du travail des personnes en situation de handicap au Maroc. 2011
[10] Lund C, Myer L, Stein DJ, Williams DR, Flisher AJ. Mental illness and lost income among adult South Africans. Soc Psychiatry Psychiatr Epidemiol. 2013 May;48(5):845-51

However, inclusion could lead to substantial gains:

- In Pakistan, it was estimated that rehabilitating people with incurable blindness would lead to gross aggregate gains in household earnings of US$71.8 million per year.[11]

Pathway 2: Labour productivity and contribution to GDP - Excess unemployment among people with disabilities, combined with unaccommodated attitudinal, physical and communication barriers that lead to lower job productivity, can affect the GDP of a country:

- Metts (2000) calculated that economic losses from lower productivity among people with disabilities across all LMICs amounted to between US$473.9-672.2 billion a year.[12]
- Buckup (2009) estimated that costs from lower labour productivity amounted to approximately 1-7% of GDP in 10 LMICs.[13]
- Smith (1996) et al calculated global annual productivity cost of blindness was $168 billion in 1993.[14]
- Frick et al (2003) estimated that globally, unaccommodated blindness and low vision cost $42 billion in 2000. Including productivity loss from caregivers of blind individuals increased the total by $10 billion.[15]

Pathway 3: Impact on social assistance spending and tax revenue – Inclusion of people with disabilities in work/employment can lead to greater economic self-sufficiency. Consequently, fewer individuals may require social assistance (in countries where it is available), decreasing overall demand on often financially-strapped programmes. Additionally, increasing labour force participation of both people with disabilities and their caregivers increases a country's potential tax base, which could increase government revenue. For example:

- In the Philippines, it was estimated that excess unemployment among individuals with unrepaired cleft lip and palate cost the government between US$8-9.8 million dollars in lost tax revenue.[16]

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[11] Lund C, Myer L, Stein DJ, Williams DR, Flisher AJ. Mental illness and lost income among adult South Africans. Soc Psychiatry Psychiatr Epidemiol. 2013 May;48(5):845-51
[12] Metts RL. Disability Issues, Trends and Recommendations for the World Bank. 2000.
[13] Buckup S. The price of exclusion: the economic consequences of excluding people with disabilities from the world of work. Geneva: International Labour Office, 2009.
[14] Smith AF, Smith JG. The economic burden of global blindness: price too high! British Journal of Ophthalmology. 1996;80:276-7
[15] Frick KD, Foster A. The magnitude and cost of global blindness: an increasing problem that can be alleviated. American Journal of Ophthalmology. 2003;135(4):471-6
[16] Muntz HR, Meier JD. The financial impact of unrepaired cleft lip and palate in the Philippines. Int J Pediatr Otorhinolaryngol. 2013

Although other studies in LMICs are lacking, data from supported employment projects in Scotland suggest that every £1 spent on the programme led to a savings of £5.87 due in large part to decreased need for disability/welfare benefits and increased tax income.[17]

Pathway 4: Profitability for businesses – While empirical evidence in LMICs is lacking, companies in high income countries have found that employees with disabilities have greater retention rates, higher attendance and better safety records and matched productivity compared to employees without a disability.[18] These savings can generate substantial gains:

- In the US, concerted efforts by major companies Walgreens and Verizon to employ significant numbers of people with disabilities saw gains such as a 20% increase in productivity and a 67% return on investment, respectively.[19]

Health

Although empirical or modelling data on the economic impact of exclusion of people with disabilities in health is particularly lacking, the following represent theoretical pathways through which costs or gains may be realised:


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Pathway 1: Spiralling medical costs and the poverty cycle – Inability to access and receive appropriate timely health care may result in continuously poor or worsening levels of functioning among people with disabilities – including the development of additional disabling conditions – that lead to higher personal and societal medical and productivity costs in the long term.[20]

Pathway 2: Impact on public health interventions – Failure to include people with disabilities in public health interventions can impede the effectiveness and efficiency of these programmes. Further, as a result of exclusion, people with disabilities may experience avoidable medical/productivity costs and governments may end up spending more in parallel care and treatment programmes for preventable health conditions.

[17] Durie S, Wilson L. Six Mary's place: social return on investment report. Edinburgh: 2007.
[18] Australia Chamber of Commerce and Industry. Employ outside the box - the business case of employing people with disabilities. 2012; UN Enable. Employment of persons with disabilities 2007
[19] International Labour Organization. Disability in the Workplace and the ILO Global Business and Disability Network 2011; Houtenville A, Kalargyrou V. People with Disabilities Employers' Perspectives on Recruitment Practices, Strategies, and Challenges in Leisure and Hospitality. Cornell Hospitality Quarterly. 2012;53(1):40-52
[20] McIntyre D, Thiede M, Dahlgren G, Whitehead M. What are the economic consequences for households of illness and of paying for health care in low-and middle-income country contexts? Social science & medicine. 2006;62(4):858-65

Pathway 3: Downstream effects of poor health – Poor health can have negative consequences for both education and employment.[21] For example, consistently poor health can lead to low educational attainment, which in turn is strongly linked to lower lifetime earning potential. Additionally, poor health can decrease job productivity, and if persistent, can lead to job losses or forced reduction in hours.

However, efforts to improve the health status of individuals with disabilities can lead to greater participation in employment and education, resulting in economic gains:

- In China, a randomized control trial involving individuals with schizophrenia found that those who received individualised family-based interventions (consisting of counselling and drug supervision) worked 2.6 months more per year than those who did not receive the treatment.[22]
- In Bangladesh, children who were provided with assistive devices (hearing aids or wheelchairs) were more likely to have completed primary school compared to those who did not receive any supports.[23]

Conclusions and recommendations

- From a human rights and social justice perspective, the widespread exclusion of people with disabilities from society is unequivocally unacceptable.
- The evidence from this study emphasises that exclusion is also untenable from an economic perspective: not only does exclusion create a significant economic burden for individuals and their families, but it can also carry substantial costs to societies.
- As 80% of studies in the systematic review reported a link between disability and poverty, it is essential that greater efforts are made to include people with disabilities in poverty alleviation and development programmes and policies. A twin-track approach of both disability-specific initiatives in conjunction with adaptations to make mainstream interventions more inclusive, will be needed for greatest impact.
- Inclusion may lead to a range of potential economic gains. For example, inclusion in:
    - education can lead to greater wage returns and closing of poverty gaps;
    - work/employment can lead to aggregated gains in household earnings, greater economic self-sufficiency, and decreased reliance on social assistance. Increased labour force participation also may lead to higher tax payment and government revenue; and
    - health care can protect or improve functioning and well-being, which in turn may foster greater participation in education and employment. Also, making public health interventions inclusive can lead to savings for governments, for example, by decreasing costs for parallel care and treatment programmes.

[21] Sachs J. Macro-Economics and Health: Investing in Health for Economic Development. Geneva: WHO, 2001.
[22] Xiong W, Phillips MR, Hu X, Wang R, Dai Q, Kleinman J, et al. Family-based intervention for schizophrenic patients in China. A randomised controlled trial. The British Journal of Psychiatry. 1994;165(2):239-47
[23] Borg J, Ostergren PO, Larsson S, Rahman AA, Bari N, Khan AN. Assistive technology use is associated with reduced capability poverty: a cross-sectional study in Bangladesh. Disability & Rehabilitation Assistive Technology. 2012;7(2):112-21

- These three life areas are interlinked. Inclusive education alone for example will likely have limited economic impact if investments in education are not matched with future job opportunities for people with disabilities. Inclusion of people with disabilities in all aspects of society is therefore imperative for the maximum benefits to be realised.
- Further empirical research is needed to understand the extent, magnitude and scope of exclusion costs and the economic impact of inclusion. Inputs that are needed include:
    - high-quality, representative data on disability, including prevalence (general and disaggregated by type/severity and age) and measures of social, political and economic participation;
    - data on individual and state level costs of inclusion collected through research as well as on-going monitoring of costs within programmes implementing inclusive strategies; and
    - longitudinal studies of economic changes over time at the individual and societal level following the introduction of inclusive interventions.

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A full copy of the main report is available at: http://disabilitycentre.lshtm.ac.uk