



Identifying the Relationship Between Disability and Depression among Children: A Case Study in Kalutara District, Sri Lanka

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ABSTRACT

Purpose of the study: This study mainly aimed to identify the relationship between: (1) disability and depression; and (2) depression and its relations to age, gender, walking ability, self-care dependence, leisure activities, regular exercises, facilitated environment, satisfied peer relationships, and verbal abuse among children with physical disabilities.

Methodology: The research design of the study was correlational. A sample of 60 children (n=60) with physical disabilities between 6-15 years were selected by using the purposive sampling method. Quantitative data was collected through a disability scale, depression scale, and a questionnaire on demographic information. Data were analyzed by using IBM SPSS software.

Main Findings: Physical disability showed a significant positive relationship with depression. The study was unable to reveal a statistically significant gender difference of depression. The depression scores of participants showed a positive correlation with age while depression was showing negative relationships with ability to walk, self-care dependence, leisure activities, facilitated environment, satisfied relationship with peers, and having goals but not with regular exercises and verbal abuse by peers.

Applications of the study: Since the study revealed a potential alarming condition on mental health of children with disabilities, it is that to take prevention initiatives in mental health practice including medico-psychological interventions and social work practices. Further, research findings suggest elaborating existing methodology of educational, health, developmental and policy practices into an active and respectful engagement as well as impactful and responsive outcomes.

Originality of the study: The study enabled to extend the established positive relationship between disability and depression among adult population into child population also. Initially the research addresses the lack of comprehensive scientific research on developing disability-inclusive programmes in Sri Lanka. With understanding disability among children as a dimension of diversity, the research highlighted the need of a multi-disciplinary approach to move problem to solution.

Keywords: Disability, children, depression, physical disabilities, correlation

INTRODUCTION

Disability is diverse; therefore, the term ‘disability’ is used as an umbrella term for physical, mental, intellectual, or sensory impairments and participation restrictions relating to the negative aspects of interaction between an individual and environmental factors (UNICEF, 2022; WHO, 2023). Due to marginalization and discrimination, both individuals with disabilities and their family members expose to psycho-socio-economic vulnerabilities except the burden of disability itself. In this respect, literature has been growing interest in to identify the comorbidity of disability and psychological disorders. More specifically studies suggested that individuals with disability are at least three times more likely to experience depressive symptoms than the general population (Thompson, 2002; Kemp, 2006; Schulte, Mongrain, & Flora, 2008; Patricia et al., 2010; Rani et al., 2023).

Children with disabilities face unique challenges and stresses. But, as Cieza et al. highlighted when understanding child and adolescent health, disability is still received low priority (2021). According to Sinclair, and Xiang, children with disabilities showed a more vulnerability to injuries than children without disabilities (2008). Conversely, children with disabilities might experience maltreatment, feeling different from peers, the high incidence of bullying, struggle with schoolwork, and experience difficult medical procedure (Mephram, 2010; Legano et al. 2021; Han & Hock, 2023; Kadim et al., 2023). As O’Brian (1996) reported in dynamic behavioral issues among children with disabilities including drug abuse, sleeping problems, hyperactivity, depression, and autism. With clear identification of depression under child psychopathology (Kamphanus & Frick, 2008), researchers have been revealing the possible association between disability and depression among children also. For exploring the relationship between depression and physical disability, few studies have taken children as the sample but hardly any research studies in Sri Lanka. To fill the existing research gap, the present research was to identify the association between disability and depression among children with physical disabilities in Kalutara District, Sri Lanka.

BACKGROUND OF THE STUDY

Though individuals experience disability temporary or permanently in their life, according to WHO estimates 16% of the global population experience significant disability (2023). As mentioned in World Report on Disabilities ‘many people with disabilities, do not have equal access to health care, education, and employment opportunities, do not receive the disability related service that they require, and experience exclusion from everyday life activities’ (WHO

and the World Bank, 2011). 1.6 million (8.7%) individuals are living with disabilities in Sri Lanka (Open Government Partnership, 2023). As it is estimated 4% of all children in the country have disabilities, while 47% among them are under 14 years of age (Asian Development Bank, 2005).

Literature have persistently advocated the significance of a more inclusive and accessible society for all. But individuals with disabilities are more likely to experience multiple deprivations in health, education, healthcare, employment, income, justice, social support, and higher risk in physical and sexual violence than their non-disabled peers specifically in low- and middle -income countries (WHO, 2011; Suleman & Rahman, 2020; Mitra et al., 2013, Rohwerder, 2015). Children with disabilities are amongst the most marginalized and discriminated against children in the world (Rohwerder, 2015; Saher & Batool, 2022). Available literature unquestionably demonstrated how children with disabilities experience varying forms of discrimination from mainstream society (Manty, 2017; Biritwum et al., 2001 & Shang, 2011). Further they are often isolated from socio-economic, cultural, and political opportunities (WHO & World Bank, 2011, p. 263). For example, stigmatization leads lack of registration of birth of children with disabilities, which acts as a main barrier to their participation and visibility in the society. Though the study population of the present study is relatively low, it is important to notice that how much they are vulnerable stigma, discrimination, cultural prejudices, ill-perceptions, and shocking invisibility (UN, 2023; UNICEF, 2023).

Researchers have alarmed the possibility of conversion physical limitations into increased mental health risk. Cole & Denduhuri (2003) in their systematic review identified that bereavement, disability, sleep disturbance, prior depression, and female gender put adult population at risk for depression. Physical illness and physical disability are stressors that may precipitate major depression (Carson, Butcher & Mineka, 1996). The association between physical limitations and depressive symptomatology flows from limitations to depression rather than reverse direction (Gayman, Turner & Cui, 2008). Concluding that depression is frequent among individuals with disabilities and as a individuals' adjustment to a distressing reality (Psarra & Kleftaras, 2013). Studies have acknowledged that the prevalence of major depression is higher in women than men (Cyranowski et al., 2000; Ford & Erlinger, 2004; Albert, 2015) and particularly women with disabilities are more likely to experience more depressive symptoms in adult population (Hughes, 2006; Noh et al., 2016). Yet, Marsh &

Wolfe (2008) stated that the gender difference of depression is undetectable among younger children.

Understanding the characteristics and risk factors for depression in Sri Lanka serves as a precondition to understand the association between depression and disability in Sri Lankan context. The prevalence of lifetime-ever DSM –IV depressive disorder was considerably lower (6.6%) within a Sri Lankan sample than in Western context (12.8%) and 16.6% in USA (Ball et al., 2010). Rajapakse and Sivapalasingam (2011) described presenting prominent somatic symptoms, moderate level of depression and considerable higher female proportion of seeking treatments as some main characteristics of the clientele at a psychiatric clinic in territory care hospital in Sri Lanka. Available literature revealed few risk factors for prevalence of depression among Sri Lankan Children including genetic effects, early school leaving, poor standard of living, stressful life events, poor parental care, and adverse childhood experience on intimate partner violence perpetration (Ball et al., 2010; Fonseka, Minnis, & Gomez, 2015; Lee & Hock, 2023).

As for exploring the relationship between the depression and disability some research hypothesized the role of potential moderate variables. Literature affirmed that female gender as an effect modifier more than a risk factor while identifying that female disability groups showed more depressive symptoms (Noh, 2016). Strawbridge et al. described engaging in high level of physical activities as a positive consequence for exclusion of depression among older population (2002). Older age, gender, social deprivation, family composition, the mental health of child's primary care giver, family functioning and child management practices increased the risk of psychopathology among children and adolescents with intellectual disabilities (Emerson, 2003). According to Greenglass, Fiksenbaum & Eaton (2006) even depression has a positive relationship with functional disability among aging population social support was positively associated with depression. Research suggest that having healthy friendship is fluid to best assist to children with disabilities too (Gordon, Feldman & Chiriboga; 2005).

METHODOLOGY

To reveal the patterns of relationship between disability and depression, the current study was designed as a correlational study.

Sample, Sampling method

The sample consisted of 60 children in age 6-15 with four main types of physical disabilities according to International Classification of Functioning, Disability and Health:

- (a) seeing and related functioning,
- (b) hearing and vestibular functions,
- (c) voice and speech functioning, and
- (d) neuro-muscular- skeletal and movement- related functions.

With regard of gender, 30 children were males and rests were females. According to the living arrangements of children, 30 participants were from home while rest were in children's homes. The sample was selected from three children's homes, five schools and through ten home visits in Kaluthara District. The purposive sampling method was used to recruit potential participants who having the ability to communicate verbally or through sign languages. Children with mental retardation were excluded from the sample.

Materials

Utilizing a brief questionnaire on demographic characteristics of participants, and two scales (the Depression Scale and the physical disability scale), the data was collected.

The questionnaire on Participants' demographic characteristics consisted with five sub-categories: general information, education, physical activities, leisure time, environmental factors and meaning of life.

The depression level of participants was evaluated by using a depression scale which has 20-item quinary variables. Participants were asked to indicate how often they felt each experience during the past week; as an example, I felt like I was too tired to do things. Responses for statements were summed across the 20 items to provide a score ranging from zero to 80. Since the depression scale was developed to the present research, more attention was given to verify its validity and reliability. It was marked with 'Cronbach's α ' reliability coefficient ($\alpha=.776$). Furthermore, question number 2, 12 and 17 carried out the same meaning to identify internal consistency of responses. The depression scale was designed including possible behavioral symptoms of depression as identified in ICD-10 Classification of Mental and Behavior Disorders. Since the focus group was children, an additional attention was given to understand the possible behavioral symptoms which are unique to children. According to Marsh & Wolfe (2008), children express depression as combined feelings of sadness and loss of interest. Due

to significance of key symptom, to grasp its expression question 2, 3, 17 and 18 were designed. Since ideas or acts of self-harm or suicide was not recognized as a possible childhood behavioral symptom by Mash & Wolfe (2008), it was not added into the depression scale.

The physical disability scale was also consisted of a 20-item quinary rating scale including nine sub-divisions: dressing, arising, eating, walking, hygiene, reach, grip, activities, and communication. To understand diversity of physical disabilities, each item involved a 5- point scale. Within each item higher scores have indicated greater physical limitation. Before conducting the study, the test-retest technique was used to construct the reliability of the disability scale. Through selecting five children with physical disabilities, the scale was tested twice. In addition to that certain simple activities and observation were followed parallel to the scale. These activities and observation made researcher understand accurate picture of response.

Procedure and Analytic Approach

The research took place in selected school settings, home, and children's' home premises in Kaluthara District, Western Province, Sri Lanka. All principals and teachers at 'Special Educational Unit', matrons and administers at children's homes, and parents were informed about aims and the procedure of the research. Apart from the verbally described consent, the participated children and their guardians were clearly described that there was no right or wrong answers, any comment or attitude was welcome, none of the answers was judgmental, confidentiality would be maintained throughout the research procedure and afterward, ability to leave at any time if they showed dislike to continue. Children who volunteered to participate were selected and interviewed. With concerning the characteristics of the sample, the data collection materials were used as structured interviews though they were originally scales and a questionnaire.

Before conducting interviews, interviewer introduced herself in friendly manner and then asked their preference to discuss further. The process continued about 30-45 minutes, each child provided answers to the questionnaire on demographic information, the depression scale and finally the physical disability scale. The interviewer read the questions in simple understandable manner to each participant and ticked according his/her answers. In addition to verbal communication, the interviewer continued conversation using non-verbal, sign language with the assistance of the guardian of the participant. All these techniques of communication were used to make participants understand the exact meaning of each item in scales and

questionnaire. When filling disability scale some small activities were conducted with participants; as an example, stand up from a strait chair, lift a full glass to mouth, pick up small thing, and walking few steps on a flat ground. These activities confirmed responses to the disability scale. At the end of procedure, the researcher thanked each participant for his/her participation in the research. Special gratitude was given to all principals, teachers in special educational units, matrons and administers at children's homes, and parents. Throughout the research process from designing to reporting, the researchers abide to ethical considerations developed by American Psychological Association (Smith, 2003).

The relationship between depression and disability and the relationship between depression and influential third variables (Age, walking ability, self-care dependence, regular exercise, leisure activities, environmental factors, having goal) were analyzed with the use of Person Correlation coefficient. The gender difference in depression among children with physical disabilities was calculated via Independent Sample t-test.

RESULTS

Descriptive characteristics of the sample

Age of the children in the sample ranged from 6 to 15 years with the mean age of 12.07 years (SD= 1.716). As table 1 illustrated, from the sample forty children (66.7%) were able to walk independently, while seven (11.7%) children were using walkers and thirteen (21.7%) were unable to walk. Out of participants thirty-five (58.3%) had self-care dependence, only nineteen (31.7%) used to practice regular exercises, thirty-one (51.7%) engaged in some leisure activities, forty-nine (81.7%) had facilitated environment to move or play with peers, and only twenty-three (38.3%) children satisfied of existing relationships with their friends. Furthermore, eleven (18.3%) were verbally abused by peers in relation to their disability, and nineteen (26.7%) had clearly set their future goals.

Table 1.

Descriptive characteristics of the sample

Variables		n (%)
Age (y)	Range 6-15	
	Mean 12.07	
Gender	Male	30
	Female	30
Ability of walking	Independent	40 (66.7%)
	Uses Walkers	07 (11.7%)
	Unable to walk	13 (21.7%)

Having Self-care dependence	Yes	35 (58.3%)
	No	25 (41.7%)
Doing Regular Exercise	Yes	19 (31.7%)
	No	41 (68.3%)
Doing Leisure Activities	Yes	31 (51.7%)
	No	29 (48.3%)
Having facilitated environment to play/move	Yes	49 (81.7%)
	No	11 (18.3%)
Having satisfied friendships	Yes	23 (38.3%)
	No	37 (61.7%)
Experiencing verbal abuse by peers	Yes	11 (18.3%)
	No	49 (81.7%)
Having a goal	Yes	16 (26.7%)
	No	44 (73.3%)

The Correlation between Disability and Depression

Table 2 illustrated the correlation between disability and depression among children with physical disabilities. The table reveals a statistically significant positive correlation between disability and depression ($r = .772, p < .01$).

Table 2.

Pearson Correlation between Disability and Depression

	Scores of Depressions
Score of disability	.772**

Note ** $p < .001$

Gender and Depression

Even the results found a higher intensity of depression score among female participants ($M = 29.10, SD = 9.93$) than male participants ($M = 27.07, SD = 9.79$) the female preponderance was not statistically significant ($t(58) = -.76, p > .05$).

Table 3.

Comparison means of scores according to Gender

	Female Participants N=30) M (SD)	Male Participants (N=30) M (SD)	t
Score of depression	29.1 (9.79)	27.17 (9.93)	-.76

Correlation between Selected Influential Third Variables

The association between age and scores of depressions among children with disabilities were significant ($r = .341, p < .01$). More particularly two variables (age, scores of depressions) were positively correlated. Additionally, the variable ‘ability to walk’ showed a statistically significant negative correlation with depression ($r = -.376, p < .01$). Except this negative correlation, five other influential variables including Self-care dependence ($r = -.495, p < .01$), Having Leisure Activities ($r = -.425, p < .01$), Facilitated environment to play/move ($r = -.52, p < .01$), Satisfied relationship with peers ($r = -.619, p < .01$), and having goals ($r = -.596, p < .01$) presented negative association with depression.

Table 4.
Correlation between Selected influential third variables

Variable	Depression
Age	.341**
Waking ability	-.376**
Self- care dependence	-.495**
Leisure Activities	-.425**
Facilitated environment to play/move	-.520**
Satisfied relationship with peers	-.619**
Having goals	-.596**

Note ** $p < .001$

The result of the present study offered no evidence about the association between regular exercise ($r = -.05, p > .01$), Verbal abuse by peers ($r = -.002, p > .01$).

DISCUSSION

Moreover, it is noteworthy that many studies in Western and Sri Lankan context provided evidence on female preponderance in depression among individuals with physical disabilities (Cole & Dendukuri, 2003; Wijerathne et al, 2004; Rajapakse & Sivapalasingam, 2011; Chen et al, 2012; Noh, 2016). The current study discovered that female participants experienced a higher percentage depression than male counterparts but failed to discover significant gender difference in depression and disability. However, this finding agreed with Marsh and Wolfe’s identification of gender indifference in depression among younger children (2008).

The negative relationship between physical activities (ability to walk and self-care dependence) and depression was confirmed through this study, except regular exercise. These negative relationships corroborate with previous research (Strawbridge et al, 2002; Motl et al, 2009;

Azar, Ball, Salmon, & Cleland, 2010). Failure to observe the association between regular exercises and scores of depressions might be seen as inconsistency of previous study (Chen et al, 2012). It is important to identify that the research sample of prior studies was adult population. Hung et al (2010) have revealed significant association of a child's functional independence and walking ability with parental mental health. It is obvious that these findings concur with findings of present research. It is understandable that child's functional dependence or self-care dependence and walking ability are not only related with parental mental health, but with child's mental health, more particularly with depression.

However, depression was found a significant negative relationship with leisure activities. This finding does not stabilize with some other study that states depression shows no significant association with leisure activities (Wijerathne et al, 2004). More particularly, it is understandable that in contrast elderly and aging population children often engage playing as their main physical and leisure activity, rather following formal regular physical exercises. The definition of leisure activity might provide different dimension to children, comparing other age groups.

Unless children are given respectful and supportive environment that promote their strengths, they can be developed a relationship with psychological issues. Facilitated environment to move with peers leads to break up experiences of social isolation. Identified a novel negative relationship between facilitated environment and depression in present research provides some clues to discover the importance of environmental factors.

Children with disabilities experience being excluded from play and peer relationship. The revealed negative association having satisfied relationship with peers and depression among brought out an aspiration to move problem to solution in relation to mental health of children with disabilities. Though results failed to prove the association between nick names and depression, among environmental factors both facilitated environment to play or move and satisfaction of friends were found negative relationships with scores of depressions in children with physical disabilities. This study clarified the relationship between meaning of life (future goal) and depression.

LIMITATIONS OF THE STUDY

The study had some methodological limitations that may have affected the results. Utilizing the purposive sampling method, a small sample size, lack of representativeness of the sample due to excluding diverse forms of disabilities and socio-cultural diversity constrained the

generalizability of findings into the study population in Sri Lanka. Despite these limitations, it is essential to identify that no previous study has illustrated the importance of psychological perspective to understand physical disability and its relation to depression within children with physical disabilities.

CONCLUSION

The identified significant positive correlation between disability and depression among physically disabled children in Kalutara District underlined the possible prevalence of psychopathology among this particular risk group. It is further suggested the necessity of providing additional care for the mental health of children with disabilities. From practice and service perspective study drew attention to identify complex links between depression with walking ability, physical activities, leisure Activities, facilitated environment to play/move, satisfied peer relationships and goal setting behaviour. For moving from the problem to solution the findings of the study provide an initial step to uncover the relationship between disability and depression. An in-depth study is needed to identify psycho-social approach to understand further possible correlations, risk, and protective factors. Knowledge from such attempt could develop context-specific approach for healthcare professionals, psychologists, social workers, community leaders and family members to enhance mental-wellbeing of children with disabilities. The study further concludes the importance of inclusion of children with disabilities into their social-environmental context. From a policy perspective, a comprehensive approach is needed to deliver accessible, effective, and diverse practices and choices within their community.

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