

Abstract

Learning Difficulty (LD) among primary school children has been identified as a global school health problem by health and educational authorities. Although, the problem has enormous social consequences at individual, family and society level, lack of research evidences has imposed a restriction in initiating strategic decisions for early identification and interventions in Sri Lanka. The present study was planned to gather basic research evidences which can be utilized to fill the existing gap in the field of LD in Sri Lanka.

The study was conducted among primary school children in grade three and grades four in the District of Kalutara to estimate the prevalence of LD, to identify behavioural comorbidities and risk factors of LD; and to describe maternal concerns towards parenting children with LD..

The study comprised four components. First component was development and validation of a screening instrument, Learning Difficulty Screening Questionnaire for Primary School Children [LDSQ (PSC)] in order to identify primary school children with LD. The second component included a descriptive cross sectional study to assess the prevalence of LD and to describe the behavioural comorbidities of LD among primary school children in grade three and grade four. The third was a case control study to identify selected risk factors of LD in a sample of children identified as cases and controls in the prevalence study, and the last was a qualitative study to describe maternal concerns towards parenting children with LD.

A 36 item teacher administered screening instrument, LDSQ (PSC) with three subscales, reading, writing and math was developed involving multiple steps during item generation and item selection. Judgmental validity of the tool was ensured during the process of development. Criterion validity was assessed against a gold standard which was the clinical judgment and separate cut off levels for each of the three subscales; reading (>45.5), writing (>41.5) and math (>50.0) were identified. Internal consistency reliability and the test retest reliability for subscales were found to be satisfactory.

model identified male sex (OR=6.1;95% CI=2.6-14.2), poor wealth quintile (OR=2.6; 95% CI=1.1-6.1), maternal age at delivery <20 & >35years (OR=11.9; 95% CI=3.6-39.7), Premature Baby Unit (PBU) stay >3days (OR=6.3; 95% CI=1.6-25.5), child needs special attention during infancy (OR=3.1; 95% CI=1.2-8.0), motor development delay (OR=2.8; 95% CI=1.01-7.8), Child with Special Health Care Needs (OR=5.2; 95% CI=2.1-13.3), family with >5 members (OR=4.3; 95% CI=1.7-10.8), family history of LD (OR=3.3; 95% CI=1.1-9.6) and home with violent disagreement pattern (OR=4.2; 95% CI=1.4-12.5) as risk factors of LD.

The qualitative component which included focus group discussions with mothers of children with LD revealed that most of these mothers were dissatisfied with the present life. Discussions identified four major thematic areas imposing psychological distress among mothers of these children. Uncertainty about future expectations, difficulties experienced in parenting children with LD and with superadded behavioural problems, stressful events experienced in family functioning and negative experiences gained during school involvement were the identified principal areas that were concerned by the mothers.

It was found that 18% of primary school children in Sinhala medium government schools in the District of Kalutara are having one or more type of LD. Often LD present as overlapping problems and significantly associated with behavioural problems. Risk factors of LD are multifactorial with biological as well as socioeconomic origin. Mothers of children with LD are concerned due to different reasons related to parenting of children with LD.

It was recommended that the Ministry of Health and Ministry of Education should work together to launch a comprehensive screening program at primary grade level and to identify high risk children at preschool level. Incorporation of teacher training programmes, mental health services, parent education programmes and multisensorial teaching methods would also help to minimize the social and psychological consequences at individual level as well as family level.

Key words: Learning Difficulty, Primary School Children, LDSQ (PSC).

The descriptive cross sectional study was carried out in a sample of 2020 grade three and grade four primary school children recruited using multi-stage cluster sampling method with probability proportionate to size of grade three and grade four children in the selected divisions. Altogether 101 clusters with a cluster size of 20 were included in the study. Of the 2020, 1864 primary care givers attended the interview thus making the response rate as 93%. Primary caregivers were interviewed on demographic and socioeconomic factors using demographic and socioeconomic Interviewer Administered Questionnaire.

Prevalence of LD in the study sample was estimated using the clinically validated cut off points of LDSQ (PSC) subscales. Prevalence of reading, writing and math learning difficulty was 12.6% (95% CI=11.1-14.1), 13.5% (95% CI=12-15.1) and 13.3% (95% CI=11.7-15.0), respectively. Prevalence of LD was 18% (n=336, 95% CI=16.3-19.8). The sample consisted of 4.4% (n=83) one type of LD, 5.8% (n=108) two types of LD and 7.8% all three types of LD.

Behavioural comorbidities of LD were assessed using teacher version of Strength and Difficulties Questionnaire (SDQ). It was found that 39.6% (n=133) of children with LD had emotional difficulties, 50.6% (n=170) had conduct problems, 68.8% (n=231) had hyperactivity and, 42.3% (n=142) had peer problems. All types of behavioral problems were significantly associated with LD ($p<.001$). It was also found that the presence of symptoms of mental health problems measured by Total Difficulty Score (TDS) was also significantly associated with LD ($p<.001$).

The case control study was conducted to determine the risk factors of LD. Children who had all three learning problems were recruited as cases and children without any learning problem were recruited as controls. The study was conducted among 137 clinically confirmed cases and 137 clinically confirmed controls. Maternal caregivers were interviewed using a Risk Factor Questionnaire to collect information on factors related to maternal perinatal period, infancy, development, early childhood, family and home physical environment. During the bivariate analysis, 26 variables were identified as having a significant relationship with LD. Of the 26 variables, 6 variables were excluded due to <10 events per variable and out of two variables measuring socioeconomic status one was excluded. Nineteen variables were included in the multiple logistic regression analysis. The