Abstract

Introduction: Physical disability is a major public health priority worldwide. Throughout history, a shift from the biomedical perspective of dysfunction to a broader social understanding of disability including physical disability has been proposed. Information and assessment of physical disability and psychological impact of limb disabled in the Sri Lankan community is scarce. Even though there are services for the physically disabled they should be properly assessed after introduction at the community level. Therefore, the primary objective of this study was to describe the prevalence, extent and reasons for physical disability in Kandy Municipal Council area (KMC). In addition this study was aimed to describe the impact of limb disability on education, employment, economy, mental wellbeing and social life, their coping strategies and service utilization of limb disabled. Further, it was aimed to describe the psychological distress of limb disabled using a comparative group from the community.

Methods: In the present study physical disability is defined as physical impairment/s leading to activity limitation and participation restriction in an individual. Physical impairment/s are problem/s of neuro-musculoskeletal and movement related function/s. Activity limitation are problems in execution of a task by an individual while participation restrictions are problems in involvement in a life situation.

Study had three components. Component 1 with three parts was a descriptive cross sectional survey to determine the prevalence of physical disability among people aged 18 to 59 years in Kandy Municipal Council area (KMC). As the part 1of Component 1, validation of World Health Organization Disability Assessment Schedule-Version II (WHODAS II)-Tamil translation in the community was performed in the Matale Municipal Council area (MMC) before its application in the main study. Part 2 was to develop and validate a study instrument to screen physical impairment- Physical Impairment Diagnostic Tool (PIDT). Part 3 included determination of prevalence of physical disability among 2460 adults aged 18 to 59 years in KMC area and to describe the demographic and socio-economic characteristics, extent and reasons for physical disability.

Component 2 was a comparative study to describe psychological distress among those with limb disability (n=61) and age and sex matched controls with no disability (n=61) from the community.

Component 3 was designed to describe the impact of limb disability on education, employment, and economy, mental wellbeing and social life, and the coping strategies adopted by limb disabled and utilization of services by them using qualitative research method (in-depth interviews).

Results: WHODAS II-Tamil showed good judgmental validity and high internal consistency (Cronbach's alpha=0.9) with a good inter observer variability. The lowest level of agreement as derived from kappa coefficient was 0.8.

PIDT-Sinhala and PIDT-Tamil demonstrated a good judgmental validity and good inter observer variability. The lowest level of agreement for PIDT-Sinhala and PIDT-Tamil given by kappa coefficient was 0.8 each.

Mean age of study participants in the community survey was 36.8 years (range=18-59 years). A majority were males (50.9%, n=1251), Sinhala (69.7%, n=1715), Buddhist (67.7%, n=1665) and were married (92.8%, n=2283). Among them, majority were educated beyond primary education (82.4%, n=2026), currently employed (56.3%, n=1384) and had a monthly household income less than Rs 30,000/= (58.8%, n=1446).

The prevalence of physical disability in the KMC area was 4.2% (95% CI: 3.5-5.1, n=103). The age adjusted physical disability prevalence for males and females were 2.6% (95% CI: 2.4-2.8) and 4.4% (95% CI: 4.2-4.6) respectively. Mean age of the physically disabled was 42.7 years (SD=11.5) and the majority belonged to the age group of 40 to 59 years (62.1%, n=64). Majority among the physically disabled 70.9% (n=73) were females, 79.6% (n=82) were married, majority were educated beyond primary education (69.9%, n=72) while 75.7% (n=78) were currently unemployed and 48.5% (n=50) had a monthly household income of less than Rs 30,000/=. There were significant associations between presence of physical disability and age (p=0.0), sex (p=0.0), ethnicity (p=0.0), religion (p=0.0), marital status (p=0.0), education status (p=0.0) and monthly household income (p=0.0).

A majority (42.7%, n=44) had physical disability onset between 40 to 59 years of age. Among the physically disabled, 98.1% (n=101) had limb/s affected and 1.9 % (n=2) had spine affected. Principal site affected was lower limbs (74.8%, n=77). There were 34 % (n=35) with unilateral lower limbs affected, 33% (n=34) with bilateral lower limbs affected, 2% (n=2) had unilateral upper limb affected, 8.2% (n=9) had bilateral upper limbs affected. Both upper and lower limbs were affected among 20.4% (n=21), spine was affected among 1.0% (n=1) while both spine and limbs were affected among 1.0 % (n=1). Among the physically disabled, 77.7% (n=80) had one site affected while 22.3% (n=23) had more than one site affected.

Intermittent pain (89.3 %, n=92) and joint swelling (17.5%, n=18) were the commonest complaints among limb disabled. Among them 4.9% (n=5) used assistive devices. Among the physically disabled, 82.5 %(n=85) participated in social activities and 23.3% (n=24) was unable to travel alone. Spouse was the major source of assistance for physically disabled (52.4%, n=54).

Rheumatological conditions were reported among 63.1% (n=65) of physically disabled being the commonest medical condition related to physical disability. Orthopaedic conditions were observed among 12.6 % (n=13) while 11.7% (n=12) had congenital deformities. Trauma was a reason for disability among 13.6% (n=14).

A majority of the limb disabled used services provided by the Ministry of Health (86.1%, n=87) and 69.3% (n=70) used private sector services, 15.8% (n=16) used Government Aurvedha services and 2% (n=2) used Social Service Department services. Strikingly, limb disabled used more than one treatment modality. A majority utilized Allopathic treatment (93.1%, n=94) and 36.6% (n=37) used Ayurvedic treatment, 4% (n=4) Chinese acupuncture, 2% (n=2) homeopathy and 61.4% (n=62) ritualistic treatment methods. Among the ritualistic treatments obtained, a majority (41.9%, n=26) made wows for the god *("bara weema")*. Among the most common causes believed for obtaining ritualistic treatments were effect of god (45.2%, n=28) and planetary influences (29.0%, n=18). Problems in service utilization was encountered by 65.3% (n=66) of the limb disabled. Financial problems (62.1%, n=41), long queues at hospital (22.8%,n=15) (57.4%) and accessibility problems (12.1%, n=8) were the barriers for obtaining treatment for people with limb disability.

Psychological distress was significantly higher among limb disabled compared to comparatives without limb disability (p=0.0).

The in-depth interviews among those with limb disability revealed that there had been an impact on education if the onset of limb disability was at an early age of life. Participants came out with effects on their occupation, economy, marriage, social life and the psychological well-being due to their limb disability condition. Some limb disabled people were stigmatized from their own families, friends, neighbours and society. Those who had disfigurement were embarrassed over their disfigurement and were sad. Almost all interviewees had feelings of sadness, loneliness, distress and shame. They have adopted varied coping strategies like finding solace in engaging in religious activities, engaging in recreational activities, engaging in their job, expressing anger, being alone and drawing emotional support from family and relatives to alleviate stress arising from limb disability condition and its consequences.

Conclusions and recommendations: WHODAS II-Tamil is a valid and a reliable tool to assess activity limitation and participation restriction among adults aged 18-59 years in the community. PIDT-Sinhala and PIDT-Tamil are valid and reliable tools to assess physical impairments among adults aged 18-59 years in the community. Both quantitative and qualitative research methods show that the limb disabled experience psychological distress and measures to improve psychological well-being of people with limb disability are necessary. Counseling programmes would be helpful to manage psychological distress of the physically disabled in the community. Community home based care services need to be developed and implemented to ensure rehabilitation, proper referrals and psychological well-being among those with limb disability. Rehabilitation programmes should be implemented targeting the people with severe limb disability especially who are without proper family and community support.

Key words: Physical disability, prevalence, psychological distress, coping strategies, utilization of services, limb disability