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DISABILITY THEMED COMMUNITY DIAGNOSIS OF RURAL POPULATION IN DHULIKHEL: A DIFFERENT STANDPOINT

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ABSTRACT

Background: Disability is the inability to perform an activity in the way or within the range considered normal for a human being. Disability occurs not only from musculoskeletal disorder but also from other causes such as dyspnea and urinary incontinence. This study was done to find out the prevalence of disability in three VDCs (Nayagaun, Kuttal and Nayabasti) of Dhulikhel, Kavre.

Materials and Methods: Standardized Nordic questionnaire and Nottingham questionnaire with MRC grading of dyspnea were adopted after translation and pre-testing for disability due to musculoskeletal disorder and dyspnea respectively. Similarly, pre-tested structured questionnaire was adapted from Norwegian Urinary Incontinence Questionnaire to identify disability due to urinary incontinence based on. Disability ID card holders were identified through door to door survey method. Descriptive analysis was performed. Micro health program was conducted for physiotherapy interventions in the identified population. Sustainability and awareness program was organized to disseminate knowledge about need of physiotherapy in these conditions.

Results: Among 1265 people surveyed in these VDCs, the total number of people identified with disabilities was 218. Among them, 15.9% (n=110) from Kuttal (N=690), 22.4% (n=70) from Nayabasti (N=313) and 14.5% (n=38) from Nayagaun (N=262) were identified with various disabilities. Among the identified cases in all three VDCs, only 5.9 % (n=13) had government disability ID card, with physical (3), hearing (2), speech (1), vision (2) and multiple disabilities (5). Apart from these people with disability card, there were disabilities caused due to dyspnea (16.5%, n=36), urinary incontinence (18.8%, n=41) and musculoskeletal problems (58.7%, n=128). The micro health program helped in improving the awareness among people about the disability and treatment through low-cost physiotherapy techniques.

Conclusions: The most common disabilities among population are due to musculoskeletal followed by dyspnea and urinary incontinence. The use of cost – effective aids and physiotherapy treatments was found beneficial as it increased awareness and proved an effective tool for education about prevention of diseases. The result of our study is useful to generate information on silent disability due to urinary incontinence and dyspnea. Our findings can be helpful for effective development of physiotherapy awareness programs to increase service utilization and thereby might contribute to both prevention and management of disability in community.

Key Words: Disability, Physiotherapy, Community diagnosis, Nepal

INTRODUCTION

Community diagnosis means the identification and quantification of the health problems in a community in reference to mortality and morbidity rates with ratios and identification of their correlates for the purpose of defining those individuals or groups at risk or those who requires health care.[1] It is also used to study the environmental, social and cultural features of the society. Usually, it is a comprehensive assessment of the health status of the community in relation to its cultural, social, physical, psychological and environmental conditions. The main purpose of community diagnosis is to expose the main problems affecting the community, which is based on the evidence from the survey and observations of the team and community members.[2] The focus of a community diagnosis program (CDP) is on the identification of the primary health needs and problems of the community.

Disability is the condition of difficulty in carrying out daily activities routinely and in taking part in social life due to

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problems in parts of the body along with obstacles created by physical, social and cultural environment.[3]Disabilities are an umbrella term, encompassing impairments, activity limitations, and participation restrictions.[4]

Disability is multifaceted, and the interventions to overcome the disadvantages associated with disability are multiple and systemic – varying with the context.[5] Disability can occur due to any systemic dysfunction such as musculoskeletal, respiratory, or urinary systems. The most widely acknowledged disability is due to musculoskeletal disorders. The low back problem was prevalent (48.8%) among the agricultural workers in India, followed by wrist-hand (46.6%) problems and pain in lower extremities (28.8%).[6]In a study in rural area of Eastern Nepal, the pain reported was mostly (44.0%) of musculoskeletal origin (viz. backache, multiple joint pain, generalized body ache, shoulder pain and knee pain).[7]

Women's health is strongly connected to gender devaluation, especially because of the high levels of maternal malnutrition and son preference, which lead to early and multiple births at short intervals.[8]As "easy" as it may be to collect and identify mortality data, it is tedious to identify information about maternal morbidities more specifically. Studying gynecological morbidities is challenging since these issues are considered a taboo topic in Nepal, which makes talking about it very difficult.[9] All these factors could have led to urinary incontinence prevalence in Nepal. Urinary incontinence is a frequent complaint among Nepalese women, albeit a poorly studied one. Since pelvic floor disorders can be one of the prominent problems that women face, it has to be examined thoroughly.[10]

Disability in old people with chronic obstructive pulmonary disease is time and again underestimated.[11] In epidemiological studies of older population, dyspnea forecasts both functional decline and mortality[12, 13] possibly because of its ability to predict cardiovascular death.[14] There are few data on dyspnea and its effect on quality of life. In Nepal, COPD covers for 43% of the non-communicable disease burden, and 2.56% of hospitalizations[15, 16],which is one of the leading causes for elicitation of symptoms of dyspnea.The reported prevalence of dyspnea varies from 62% of people at age of 65 to 16% of age 59.[17]

There are various physiotherapy treatment methods for musculoskeletal disorders with symptoms of neck pain, back pain, knee pain and ankle pain. Also, there are ample evidences of dyspnea management technique [18, 19] and treatment approaches for reducing urinary incontinence through pelvic muscle strengthening exercises.[20-22] Yet, there is very less awareness about the role of physiotherapy in all these conditions leading to disability and lowered quality of life (QOL) in rural population of Nepal. Hence, with the cases identified through this study, the aim was also to provide them with awareness program about cost-effective physiotherapy protocol and group education sessions.

This main aim of the study was to find out the prevalence of disability in three VDCs (Nayagaun, Kuttal and Nayabasti) of Dhulikhel, Kavre. The specific objectives of the study were to find out prevalence of musculoskeletal disability and identify disability card holders, to find out the burden of disability due to urinary incontinence and dyspnea, which are one of the ignored aspects of disability. The study further aim to conduct awareness program about cost-effective physiotherapy treatment and group education sessions.

MATERIALS AND METHODS

This study was conducted as a part of community- based learning where the fourth year students of BPT were sent for placement in three VDCs of Dhulikhel (see Table 1 for demographic details), with the aims of acquainting with common problems in the community and learning to conduct micro health programs. For each group, there was a faculty for supervision. The local health workers and community leaders were also involved in the project. Written consents were duly taken from District health office for conducting the survey and micro health program. The tools used included pre-tested questionnaires and written consents were taken from the participants.

Study Tools

For identifying the disability among rural population due to musculoskeletal problems, the questionnaire was formulated based on Standardized Nordic Musculoskeletalquestionnaire[23] and pre-testing was done. This questionnaire aims at identifying the musculoskeletal symptoms which may lead to disability in completing ADLs (Activities of Daily Living) in epidemiological studies, and not developed for clinical diagnosis.[24]

To recognize the disability caused due to dyspnea, questionnaire were formed based on Medical Research Council (MRC) grading of dyspnea and Nottingham Extended Activity of Daily Living (NEADL) scale. The NEADL scale has higher sensitivity and negative predictive value in identifying such disability in older people.[11] The MRC grading of dyspnea scale is a more cost-effective indicator of disability but not widely accepted, which is a reliable and valid method for evaluating physical impairment.[25] The strong correlations between MRC scores and quality-of-life indices suggest that NEADL scale may also be cost-effective indicator of physical impairment.[26]

Pre-tested structured questionnaire was developed to identify disability due to urinary incontinence. The questionnaire

was designed to assess the impact of urinary incontinence on Activities of Daily living and social participation. This questionnaire was adopted from Norwegian Urinary Incontinence Questionnaire.[27]The disability card owners were also identified through doorto door survey, where the participants were asked to show their disability card.

Door to door survey method was used, where each subject were interviewed to fill the questionnaire. The survey was conducted at most of times in early morning hours when the subjects were in their houses and not yet proceeded to the fields for their daily work. The survey was conducted for two weeks by using purposive sampling method. If any family member in the house was missed in the first day, it was followed up in the next day. The snowball method was also used so as to avoid chances of missing any subjects. In this method, the respondents were asked to identify the next possible subject for the study.

As a part of the project, after the survey was completed, micro health program was conducted for physiotherapy interventions in the identified population. For each sub-group of conditions identified for musculoskeletal disorders like back pain, neck pain and knee pain, group exercises were taught with the aim of raising awareness about physiotherapy and to help create a self-help group. These micro health program included education sessions with interactions and exercise sessions. Similar micro health program were conducted for sub-groups of urinary incontinence and dyspnea.

Sustainability and awareness program was organized to disseminate knowledge about need of physiotherapy in these conditions. As a part of sustainability program, community leaders and school teachers and health professionals were taught about the basic physiotherapy management.

Statistical Analysis

Descriptive analysis was performed to calculate the percentage of various disabilities in the three VDCs, using IBM SPSS Statistics version 20.

RESULTS

The total population among in three VDCs is 2246, but only 1265 people were surveyed (see table 1). Among these, the total number of people identified with disabilities was 218. Among them, 15.9% (n=110) from Kuttal (N=690), 22.4% (n=70) from Nayabasti (N=313) and 14.5% (n=38) from Nayagaun (N=262) were identified with various disabilities. Among the identified cases in all three VDCs, only 5.9 % (n=13) had government disability ID card, with physical (3), hearing (2), speech (1), vision (2) and multiple disabilities (5). Apart from these people with disability card, there were disabilities caused due to dyspnea (16.5%, n=36), urinary incontinence (18.8%, n=41) and musculoskeletal problems (58.7%, n=128) (See figure 1).

In Kuttal, among the total number of disabilities (N=110) identified, there were 57% with musculoskeletal problems, 20 % with urinary incontinence and 17% with dyspnea problems, whereas only 6% had been identified with a disability card. In Nayabasti, among the total number of disabilities (N=70) identified, there were 44% with musculoskeletal problems, 21% with urinary incontinence and 14% with dyspnea problems, whereas only 7% had been identified with a disability card. In Nayagaun, among the total number of disabilities (N=38) identified, there were 66% with musculoskeletal problems, 11% with urinary incontinence and 18% with dyspnea problems, whereas only 5% had been identified with a disability card.

Among all cases of musculoskeletal problems in the three VDCs, there were cases of low back pain (n=67, 52.3%), multi-joint pain (n=30, 23.4%), knee pain (n=20, 15.6%), shoulder pain (n=6, 4.7%), neck pain (n=2, 1.6%), hip pain (n=2, 1.6%), ankle pain (n=1, 0.8%) (See figure 2). Whereas, there were 35.2% male and 64.8% female suffering from disability due to musculoskeletal disorders. Similarly, there were more females (72.2%) affected by dyspnea than males (27.8%).

The identified population was also provided with interventions through physiotherapy treatment. For each sub-groups of disability, interventions were provided through basic physiotherapy management, ergonomic advices, group exercise and counseling sessions. Out of 218 cases, 94 cases (43.1%) were intervened with 136group treatment sessions (See figure 3). There were two intervention sessions provided for each sub-groups at an interval of 1 week. There were16 cases with disability due to dyspnea, 63 cases with disability due to musculoskeletal problems and 37 cases due to urinary incontinence that were provided with interventions.

During the project, for cases of dyspnea and severe physical disability, the physiotherapy management was provided at doorstep as most of the subjects declined for coming to the community center due to severity of dyspnea.

DISCUSSION

In this study, the musculoskeletal disability is the most prevalent among all type of disability. In this study, the more than half of the populationhas low back pain (52.3%), which is similar to findings of a study, with low back pain prevalence at 60%among rural farmers in a district of India.[28]In another study, the lower back problem was predominant (48.8%) among the farmers and it was followed by wrist-hand (46.6%) problems and lower extremities pain (28.8%).[6]

The lower back problems among farmers might be due to strongly bent posture for a long period during performing reaping and uprooting operation during rice cultivation. It could also be due to frequent twisting of the waist and being compelled to adopt an awkward kneeling posture during performing uprooting task. When activity was held for long periods or was carried out in uncomfortable stooping postures, did appear to result in significantly higher proportions of disc diseases.[29] The risk of low back disorder is increased as a function of lateral and twisting motions of trunk.[30]

In this study, there are more females affected with disability due to musculoskeletal problems as compared to males. In a similar study, the highest prevalence of musculoskeletal pain (31.4%) among males was in agricultural/dairy workers whereas it was noted for female agricultural workers (44.7%).[31]Females had high prevalence of MSD complaints than males with back pain accounting for more than 50% of the total complaints, which could be due to the extra burden of household work and taking care of child.[32]

This study revealed that there was higher percentage of knee related disability. During cultivation, the farmers are compelled to adopt same postures during work for a long time. The male workers work in kneeling posture during uprooting job, whereas, female workers adopt squatting posture.All these tasks are repetitive in nature, which may be related to musculoskeletal disorders (MSD).[6] Similar findings were also illustrated from the study of Michelson *et al*.[33] Markolf *et al* reported that due to overloading of static load on knee joints during continuous bent posture the subjects might feel pain in the lower extremities.[34]

The prevalence of the dyspnea in this study is similar to a study in Australia where prevalence of dyspnea among respondents was 8.9%.[35] Whereas, in a study conducted among older population living at home, there was prevalence rate of dyspnea of 32.3%, who had poorer functional status and lower quality of life.[17] The prevalence and the intensity of chronic breathlessness experienced in the community has previously been reported.[36] The effect of dyspnea on functional status and quality of life has been proven to be substantial. [17]It could also be related to underlying psychological morbidity, which was significantly increased in dyspnea subjects.

This study also showed that females were more suffering with disability due to dyspnea than males. Another study conducted in Nepal, identified a significant proportion of the COPD burden as being borne by women (six female sufferers for every ten cases of COPD).[37] The causative factor could be the extensive use of firewood by women living in rural communities putting women at increased risk of exposure to indoor air pollution for comparatively long periods of time. The same finding of biomass fuel being associated with COPD has been stated by several studies conducted in Nepal and other developing countries, with women being disproportionately affected.[38-40]

In this study, there is evidence of disability due to urinary incontinence leading to lower quality of life. Generally, Nepalese women have three main responsibilities: reproduction and child bearing, household maintenance, and income earning. In rural areas, the women's burden of work is considered to be 12%–22% greater than the men's, and these women must work hard in order to gain acceptance in their husbands' homes.[41]All these social factors can lead to stress on the pelvic organs and dysfunction resulting in urinary incontinence.

It is already shown that the patients with urinary incontinence had inferior mental health and quality of life.[42]In a research in Turkey (2005), it was found out that UI had a negative impact on the quality of life of 87.2% of these patients with mild to moderate severity.[43] Urinary incontinence is an important factor linked with functional decline in women living in their own homes.[44]

Through the survey, it was also found that the women were reluctant to talk about their incontinence problem. According to the Nepal Demographic and Health Survey 2011, 40% of Nepalese women are literate. This could have led to less awareness about importance of health care seeking for urinary incontinence. A recent study in rural Nepal determined that one perceived barrier to health carewas a woman's feeling of shame. Thus, a "culture of silence" and "laaj" (i.e., shame about reproductive health)restricts women from talking about pregnancy and itsrelated problems.[45]

One of the other findings of this study was that many were not interested to make the disability identity card, citing that there is least use of it. This indicates that there is poor awareness among general population about the government systems for benefitting the differently abled populations. The Disability Protection and Welfare Act 1982 ADof Nepal[46] could not bring much improvement, since its implementation has not been effective. The people are still not sensitive to the rights and entitlements of persons with disabilities.

There was also poor awareness regarding physiotherapy among the rural community, which is as expected since physiotherapy is still a young profession with a history of only 30 years. There is an urgent need to change the attitudes towards physiotherapy in Nepal in order to provide high quality physiotherapy services for Nepalese people.[47]The micro health program was conducted to improve the awareness among people about the disability and treatment through cost-effective physiotherapy techniques. Through the intervention program, the community was provided physiother-

apy treatment for each sub-group. But, the outcome was not assessed objectively in this study, which should be done in future studies. Through the sustainability program, the school health teachers were educated about the importance of physical exercise training for children.

CONCLUSIONS

The most common disabilities identified are musculoskeletal followed by dyspnea and urinary incontinence. The results of our study are useful to generate information on silent disability due to urinary incontinence and dyspnea. Our findings can be helpful for effective development of physiotherapy awareness programs to increase service utilization and thereby contribute to both prevention and management of disability in community.

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Table 1: General information about ward no. 6 of Dhulikhel municipality

Place	Total houses	Total population	Male	Female
Ward 6 (Municipality Census,2011)	394	2246	1108 (%)	1138 (%)
Kuttal	134	690	373 (%)	317 (%)
Nayabasti	90	330	163 (%)	150 (%)
Nayagaun	46	262	130 (%)	132 (%)

*According to Municipality Census, 2011, Ward No. 6

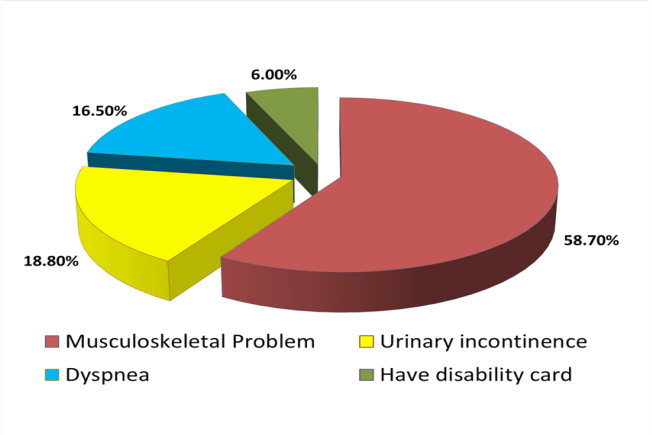

Figure 1: Types of disabilities identified in Kuttal, Nayabasti and Nayagaun

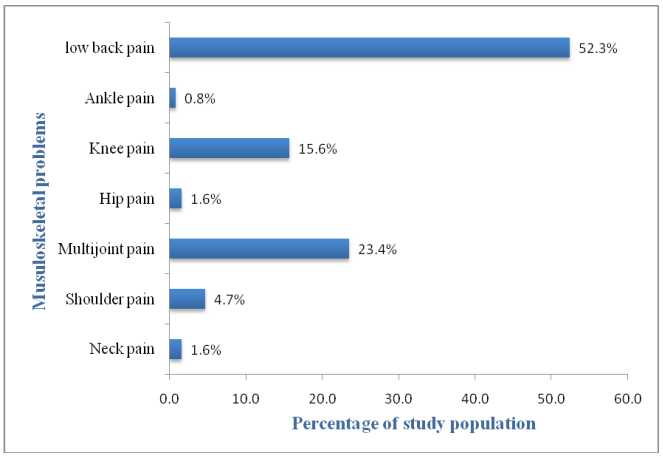

Figure 2: Distribution of musculoskeletal problems in Kuttal, Nayagaun and Nayabasti VDC

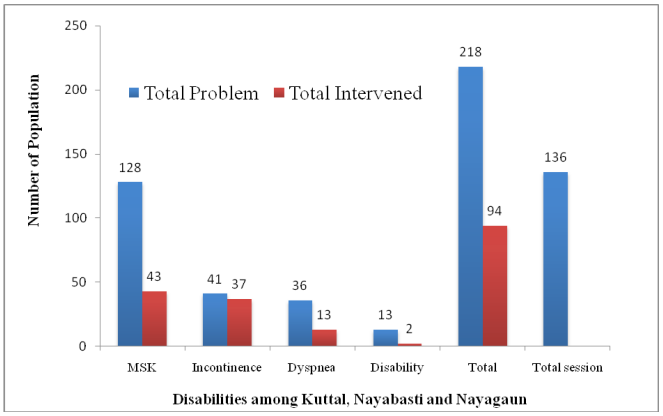

Figure 3: Number of disabilities observed in Kuttal, Nayabasti and Nayagaun with intervention done in two sessions

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