

## Occupational injuries sustained by caregivers in geriatric care homes of Kathmandu valley

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### ABSTRACT

**Background:** Ageing is an inevitable process. The population of elderly is increasing in Nepal. Caring of elderly at geriatric care homes is becoming popular. Caregivers take care of the elderly in the geriatric care homes. Occupational injuries are very common and no study has been done to document the injuries sustained by caregivers working in geriatric care homes in Nepal.

**Objectives:** To determine the prevalence of work related musculoskeletal disorders and the injuries sustained among care givers working in geriatric care homes in Nepal.

**Methods:** This is a descriptive cross-sectional study design. A convenience sample of 41 caregivers among geriatric care homes in Kathmandu valley aged between 20-45 years were included in the study. The Nordic musculoskeletal questionnaire was adapted to measure Musculoskeletal Disorders in the study population. Descriptive analysis of data was done. Type of injury was classified and their consequences observed.

**Results:** Caregivers (n=41) reported work related musculoskeletal disorders in six areas of the questionnaire: Neck4(9.75 %), Shoulder 8(19.5%), Elbow 4(9.75%), Low back 22(53.65%), Knee 5(12.19%) and ankle3(7.31%). Common types of injuries sustained were muscle strain, ligament sprain, joint pain, hernia etc. In most of the cases, caregivers had to take interventions like taking medications, exercises, rest while some were able to get away with minor symptoms.

**Conclusion:** The incidence of occupational injuries among caregivers is high. The existing training programs are not enough. A revision of the course work for training of caregivers is necessary

**Key words:** Caregivers, Geriatric, Occupational Injuries.

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### Introduction:

Caregivers are recognized as essential members of the rehabilitation team.<sup>1</sup> Following the debilitating consequences of ageing especially the impairments of body functions, and activity limitations, old aged people are often dependent on caregivers, especially family caregivers, for support to carry out activities of daily living<sup>2</sup> with implications on the quality of life of geriatric

people. The correlation between the incidences of work related musculoskeletal disorders (WMSD) and the working conditions is well known, particularly the physical risk factors associated with jobs. Psychosocial factors, stress and work strengthening seem to be parameters that increasingly contribute to the beginning of those disorders.<sup>3,4</sup>

In Nepal, individuals over 60 years of age are considered elderly.<sup>5</sup> According to the 2011 census of Nepal, there were 2.1 million elderly inhabitants,

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which constitute 8.1 percent of the total population in the country. Percentage of elderly inhabitants during the years 1951 was 5.0%, in 1991 was 5.8% in 2001 was 6.5%, and in 2011 was 8.1%, which shows that there has been a sharp increase in the number of elderly persons between 2001 and 2011.<sup>6</sup> The study done in three old age homes in Kathmandu in 2010 under Geriatric Center Nepal explored that more than half of the residents were diagnosed with at least one chronic health problem (hypertension, gastritis and arthritis) and all old age homes faced a lack of trained human resources and financial constraints<sup>7</sup>.

There are about 82 organizations (geriatric homes) registered with the government spread all over Nepal. These organizations vary in their organizational status (government, private, non governmental organization, personal charity), capacity, facilities, and the services they provide. Most of them are charity organizations. About 1,500 elders are living in these old-age homes at present.<sup>8</sup> These private organizations are providing services to elderly out of the individual's initiatives. The services and care, virtually, do not include aspects that are essential to cater elderly in old age home.<sup>9</sup>

Due to the vital and indispensable role played by caregivers, several studies have examined the impact of care giving on various constructs such as caregivers' stress, strain, burden and quality of life (QoL).<sup>10</sup>

Work-related musculoskeletal disorders have been recognized to be associated with various occupational risk factors, as well as work position, posture, physical force, vibration and movement, psychosocial stressors and individual issues.<sup>11</sup> Based on scientific reports, WMSDs can be attributed to occur during patient transferring activities. These duties have been recognized to be significant sources of musculoskeletal disorders which are exposed to transferring, dress changing, injection postures and handling of elderly.<sup>11</sup>

The nature of the working in the care homes related to care of patients such as transferring, moving and other manual works causes musculoskeletal disorders mainly in back, shoulder, arm, wrist, and the neck. Caregivers of elderly patients have suffered injuries as a result of lifting and handling patients.<sup>12</sup> It is however troubling that despite the potential risk of musculoskeletal symptoms among caregivers, only few studies have addressed the subject matter of which, one study involving stroke caregivers focused only on low back pain.<sup>10</sup>

We, therefore, studied caregivers' knowledge and training in patient handling and the injuries sustained by caregivers. This would provide an insight into the enormity of the problem which will in turn provide an empirical basis, and impetus for seeking out training needs and providing effective preventive and therapeutic interventions.

## Methodology

This study was carried out during January 2019 among caregivers in Kathmandu, randomly selected from among all the care homes of Kathmandu (Nepal). The selection criteria chosen as

### **Inclusion Criteria:**

Age: between 20 years to 45 years ; all males and females; Educational qualification: all level; working experience more than one year, Caregivers working in geriatric care homes of Kathmandu valley

### **Exclusion Criteria:**

Any type of postural deformities; Any history of recent injury/trauma or accident ; Spinal surgery or any other surgery in any part of the body ; Any neurologic disorders ; Limb length discrepancies or any Lower limb deformities and Retired ; Pregnant and severely fallen ill recently.

Descriptive statistics was carried out for all subjects to assess exposure risks and demographic information. An observational cross-sectional study design was adopted. A self administered questionnaire, together with an invitation letter and information about the study, was distributed by hand. Reliability of the questionnaire was conducted by piloting the questionnaire with 5 care givers of geriatric care home in Kathmandu. The researcher made an appointment a few days later to come back to collect the completed questionnaire.

Informed consent was obtained from all the participants. Voluntary participation was done from the eligible participants fulfilling the inclusion criteria and exclusion criteria. Nordic musculoskeletal questionnaire (NMQ) which is a tool used to measure musculoskeletal disorders was selected.<sup>13</sup> Nepali version of the scale was used in the present study. NMQ Nepali translation was done using forward and backward translation method. Face and content validity was established for the Nepali version of NMQ. The NMQ can be used as a questionnaire or as a structured interview.

### The caregivers

Caregivers were working in geriatric care homes. Some of them had received training in patient handling. Others had no formal training. Knowledge of ergonomics was also noted among caregivers.

### The Patients

The patients considered in this study were old aged male and female patients. These patients required minimal to full assistance. The cause of disability were stroke, parkinsonism, alzheimer's disease, arthritis, paraplegia, motor neuron disease, head injured patients.

## Results

50 questionnaires were distributed to caregivers meeting the criteria, however, only 41 were counted eligible for data collection. Barthel scale was used to measure performance in activities of daily living (ADL).<sup>14</sup> Mean Barthel score of patient was 7/20 (range 0-14). Median weight of patient was 60 kg. Median age of caregiver was 27.

**Table 1:** Joint wise classification of overall injuries (WMSD) in caregivers

Prevalence of Injuries	Response	Frequency (n)	Percentage (%)
Neck	Pain	4	9.75
Shoulder	Pain	8	19.5
Elbow	Pain	4	9.75
Low back	Pain	22	53.65
Knee	Pain	5	12.19
Ankle & feet	Pain	3	7.31

The descriptive statistical analysis of data n=41 showed the mean age of caregiver was 28.53 years. Body region wise analysis of prevalence of musculoskeletal disorders is shown in Table 1. Almost all caregivers had injured themselves and developed some kind of pain in associated body parts. Eleven caregivers had

developed muscle strain in back, neck and scapular muscles. Five persons suffered ligament strain in ankle, shoulder and one among them had a grade 1 tear of ligament around knee. Twenty one persons complained of pain directly in the joints. Two caregivers also developed hernia and four other caregivers had injuries of other types like physical assault by patient, minor wounds while falling down during handling heavy patients (Table 2).

**Table 2 (a & b):** Injuries sustained by caregivers during caring and their consequences

#### a. Injury to caregivers

Injury/ Effect	No. of cases
Muscle strain	11
Ligament sprain/tear	5
Joint pain	21
Hernia	2
Other injuries	4

#### b. Consequences of injury to care givers

Needed analgesia	18
Put up with minor symptoms	14
Referred to hospital	2
Had to take leave from work	7

Eighteen caregivers had to take analgesics to get rid of the pain. Fourteen caregivers did not do any intervention and were on their own with minor symptoms. Two caregivers were referred to hospital since the symptoms were worse. Seven caregivers had to take leave from work to help the symptoms subside and carryout interventions like physical therapy and rest.

Thirty caregivers had received formal caregivers training however twenty-five caregivers had no knowledge of ergonomics and safe practices during work and nearly everyone was suffering from some kind of work related injury.

**Table 3:** Overall and gender wise demographic characteristics of respondents

Demographic characteristics /factors	Overall, (n= 41)	Male, (n= 20)	Female, (n= 21)
Age	28.53	28.8	28.49
Weight	62.5	68	57
Knowledge of Ergonomics	16	9	7
Formal Caregiver Training	30	16	14

## Discussion

This study found only 30 out of 41 (73%) caregivers were provided training for their job but no handling skills had been updated or reassessed during care home stay.

In the UK 'The Cavendish Review' recommended preparing health care assistants (caregivers) for their roles and providing them 'Care Certificate', which is a standards for health and social care workers to ensure compassionate, safe and high quality care. This also includes providing mandatory training such as moving and handling, infection control etc.<sup>15,16</sup>

In Nepal, due to lack of proper training and courses for caregivers, they do not have proper idea of handling old people like transferring, mobilizing, positioning, basic warm-up exercises and specialized focused exercises. Due to this, lots of musculoskeletal problems and injuries are commonly seen. Musculoskeletal health is vital aspect of physical health and directly related to the psychological and social health too.

Caretakers are in high risk of physical disorders and injuries. It directly results in decreased work efficiencies. Caregivers suffer from psychological health problems such as fatigue, anxiety and depression.<sup>17-19</sup> Their training also did not include knowledge about body mechanics which is very useful in protecting oneself and the patient as well. This enlightens the fact that the kind of training given to caregivers is not up to the mark and the issues of safe practice and injury prevention at work is not addressed. Also the caregivers were mostly dependent on manual handling of patients. They were not aware of the equipment which could help them to make work easier in lifting patients and assisting. Patient transfer as a workload and health risk issue has had considerable attention from the early 1990s, when research began to demonstrate benefits from the use of mechanical lifting equipment and friction-reducing devices.<sup>20,21</sup>

The most common symptom resulting from injury amongst caregivers was back pain. Back pain is common in health professionals, especially amongst

nurses and physiotherapists. The Royal College of Nursing, UK, recommends a weight limit of 30 kg for a safe single-handed lift<sup>11</sup>. However, all the patients surveyed in our study weighed more than 30 kg, yet lifting was often done by a single caregiver.

Research show that interventions combining measures as education, training, ergonomic assessment, upgrading transfer equipment, development of quality tool and forms, and no-lifting politics, reduce the risk of musculoskeletal disorders among the health care staff<sup>22-25</sup>.

Most of the time caregivers are left alone to lift or handle patients single handedly as the ratio of patient to caregiver is very low. One caregiver looks after four to five or sometimes even more patients. Lack of initiative from the government level in defining the standards of care homes and the nature of care may be one of the causes.

Criteria for a model residential care home (like permanent building, necessary infrastructures and space, appropriate catering system, regular healthcare and medicines, provision for mental and physical relaxation such yoga, pilgrimages) should be set up and strictly followed.<sup>9</sup> The role of care takers becomes very much crucial, so a standard international level training should be provided which should be appropriately accredited. Regular reassessments and workshops should be conducted.

## Conclusion

The prevalence of WMSD is very high. The amount of caregivers do is significantly higher as compared to the international standards. The training they get is not adequate. As a result almost everyone complain of occupational injury. Many of the musculoskeletal disorders could be avoided by proper use of body mechanics while working. Necessary intervention programs like exercise interventions by physiotherapists and capacity building workshops could be conducted. There is an urgent need to design courses for caregivers that would help them work safely in the field

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