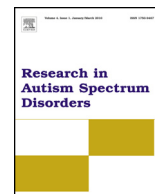




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# Research in Autism Spectrum Disorders

Journal homepage: <http://ees.elsevier.com/RASD/default.asp>

## Self-reported awareness and coping behaviors of low back pain among institutional caregivers for people with intellectual, autistic and associated multiple disabilities



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### ARTICLE INFO

#### Article history:

Received 26 October 2014

Accepted 27 October 2014

Available online 19 November 2014

#### Keywords:

Intellectual disability

Autism

Low back pain

Awareness

Coping behavior

Perception

### ABSTRACT

This study aimed to investigate the self-reported knowledge and coping behaviors for low back pain (LBP) among institutional caregivers for people with intellectual, autistic and associated multiple disabilities and to gather information about factors that affect these coping behaviors in the workplace. A cross-sectional survey was conducted to recruit 1073 caregivers (response rate of 89.5%) from 15 medium to large disability welfare institutions in this study. This study specifically developed a scale to examine objective (10 question items) and subjective knowledge (one question item) of LBP and its coping behaviors (10 question items). The mean score of objective knowledge of LBP was 7.15 (range of 0–10; over 70% correct). A total of 54.2% of respondents expressed that they had a low level of subjective knowledge of LBP, and 45.8% of respondents had a high level. The study also found that many objective knowledge items need to be improved in future health promotion initiatives regarding LBP. Without adjusting for other factors, the study indicated that those caregivers with more subjective LBP knowledge were more likely to adopt higher levels of LBP coping behaviors than their counterparts (OR = 1.536, 95% CI = 1.152–2.046). After adjusting for demographics, working conditions and health status factors, LBP knowledge was not statistically correlated with LBP coping behaviors. Caregivers who worked more days per week (OR = 1.984, 95% CI = 1.408–2.795), had break time on duty (OR = 2.457, 95% CI = 1.5–4.025), exercised regularly (OR = 1.594, 95% CI = 1.115–2.28), had poor health status (OR = 0.497, 95% CI = 0.249–0.995), or had a history of LBP (OR = 1.433, 95% CI = 1.008–2.039) were more likely to adopt higher levels of coping behaviors than their counterparts. This study highlights that institutional managers should pay attention to factors that influence LBP coping behaviors in caregivers, and future studies should examine the effects of the characteristics of care recipients and caregivers' families on caregivers' perception of LBP.

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## 1. Introduction

Low back pain (LBP) is the world's most debilitating condition (Samartzis, Karppinen, Cheung, & Lotz, 2013) and the leading cause of disability globally (Buchbinder et al., 2013). Based on a national survey, Strine and Hootman (2007) estimated the US prevalence and factors correlating with LBP and found that the 3-month prevalence of back and/or neck pain was 31%. They indicated that adults with low back and/or neck pain reported more comorbid conditions, exhibited more psychological distress, and engaged in more risky health behaviors than adults without either condition. In dealing with LBP, professionals face many problems such as varied clinical presentation, lack of consensus regarding diagnostic criteria or clinical classification, wide variation in course and prognosis, and limited success in identifying effective treatments (van der Windt & Dunn, 2013).

The literature shows that low back injuries are common among caregivers such as nurses. Vieira, Kumar, Coury, and Narayan (2006) found that the lifetime incidence and point prevalence of LBP among nurses were 65% and 30%, respectively, in orthopedic nurses, and 58% and 25%, respectively, in intensive care nurses. However, few studies focused on caregivers of persons with disabilities. These caregivers play an important role in disability service provision, and they often experience job stress and burnout, have a high turnover rate (Hatton et al., 1999; Hu et al., 2010; Larson & Lakin, 1992; Lin, Hu, et al., 2009; Lin, Lee, Loh, et al., 2009; Lin, Lee, Yen, et al., 2009; Lin & Lin, 2013; Lin, Lin, Kuo, et al., 2014; Olsson & Hwang, 2001), and experience risk for LBP (Lin, Lin, Su, Hsu, Chou, et al., 2014; Lin, Lin, Su, Hsu, Loh, et al., 2014). Bardak, Erhan, and Gündüz (2012) indicated that the prevalence of LBP was higher among caregivers of patients with spinal cord injuries than among healthy control subjects. Furthermore, physical functionality is decreased in female caregivers of children with a physical disability (Tong et al., 2002, 2003) reported that the prevalence of LBP is higher in adult female primary caregivers of children with physical disabilities who need assistance with transfers.

Caregiving is a labor-intensive and 24-h service for people with disabilities living in social welfare institutions. Understanding the caregiver's perception of LBP is crucial for effective management. However, little information is available that translates the implications of this research into health-promoting practices for this group of people. This study aimed to investigate the awareness and coping behaviors for LBP among institutional caregivers for people with intellectual, autistic and associated multiple disabilities and to gather information about factors that affect these perceptions in the workplace.

## 2. Methods

The present study employed a cross-sectional survey. The entire study population was composed of 9349 staff working in all 271 registered disability welfare institutions caring for people with intellectual, autistic, and associated multiple disabilities at the end of 2012 in Taiwan (Ministry of the Interiors, 2013). A purposive sampling method was conducted to recruit 1073 caregivers (response rate of 89.5%) from 15 medium to large disability welfare institutions in this study. The study data were collected by a structured questionnaire that was completed by the institutional caregivers in 2013.

The survey material included an introduction letter, an informed consent form, and a structured questionnaire. The full questionnaire aimed to collect information for the study "Musculoskeletal Discomfort, Low Back Pain and Associated Living Limitations among Institutional Staff Working for People with Developmental Disabilities in Taiwan", which covered data on the institutional caregiver's demographic and working characteristics, health and lifestyle, previous and current LBP experiences, self-reported awareness and coping behaviors for LBP. As part of the results of the above study, this paper analyzed the data using SPSS 20.0 software with a primary focus on the self-reported awareness and coping behaviors for LBP and their possible influencing factors among the institutional staff working with people with intellectual, autistic or associated multiple disabilities.

This study specifically developed a scale with 10 question items (see Table 1) to examine the objective LBP knowledge of the caregivers. A correct response received a score of one, while an incorrect response was scored as zero. We added the total score to determine the respondent's knowledge. We also used another single question in the questionnaire to examine the subjective knowledge of LBP among the respondents. Otherwise, in order to identify the coping behaviors for LBP among the respondents, this study included 10 items (see Table 2) to measure respondent's action as "never" (score 0), "sometimes" (score 1) or "always" (score 2) for these behavioral items.

## 3. Results

### 3.1. Caregivers' objective knowledge of LBP

The data on the characteristics of the caregivers who participated in the study have been described in previous papers (Lin, Lin, Su, Hsu, Chou, et al., 2014; Lin, Lin, Su, Hsu, Loh, et al., 2014). There were 1073 respondents in the analyses. Table 1 presents the distribution of self-reported objective knowledge of LBP. Most people have correct knowledge such as "low back pain only occurs in dynamic activity, not in static activity" (85.2% disagree), "low back pain is a result of incorrect posture, lack of muscle strength, maintaining same posture and working without rest" (94.9% agree), "sedentary, standing for a long time, not moving for a long time or bending over to pick something up are common incorrect postures that cause low back pain" (95.2% agree), "it is less harmful to the lower back to pick something up with one knee down" (76.1% agree), "training waist muscle flexibility, muscular strength, and endurance often can reduce the occurrence or recurrence of back pain"

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