

The Influence of Low Back Pain on Care Workers' Health-related Quality of Life

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Abstract. [Purpose] The purpose of this study was to investigate the severity and the persistence of low back pain (LBP) in care workers and its influence on their health-related quality of life (QOL). [Subjects] The subjects were one hundred and fifty eight female care workers who worked for three health care service facilities for the aged in Japan. [Methods] The investigation was carried out by questionnaire survey. Subjects were asked if they had LBP at the time of the survey. If they had LBP subjects were further asked to describe how long their LBP had lasted. We evaluated the degree of LBP and the Short Form (36) Health Survey (SF-36) was used to assess health-related QOL. [Results] The participants were classified into two groups: a H-LBP group that reported a high degree of LBP and an L-LBP group that reported a low degree of LBP. In addition, the participants who had LBP at the time of survey were classified into two groups: an Acute group in which LBP had continued for less than 3 months and a Chronic group in which LBP had continued for more than 3 months. The scores for all dimensions of SF-36 in the L-LBP group were significantly lower than in the H-LBP group. The Chronic group had a significantly higher degree of LBP and lower "Bodily Pain" than the Acute group. [Conclusion] It is clear that the presence or the severity of workers' LBP influenced not only their pain and physical functions but also their social and psychological QOL.

Key words: Care worker, Health-related Quality of Life, Low back pain

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INTRODUCTION

According to a survey by the Ministry of Health, Labour and Welfare in 2008, the utilization rate of nursing care facilities in Japan exceeds 90%¹⁾. The required care level for residents in health care service facilities for the aged increased gradually from 3.20 in 2004 to 3.28 in 2008¹⁾. Care workers already have a higher risk of developing work-related low back pain (LBP) compared to workers in other industries because their working postures, such as a half sitting posture when exchanging diapers and during the bathing and moving of patients, increase the risk of developing LBP.

Picovet et al.²⁾ investigated the correlation between multiple musculoskeletal diseases and the health-related standard QOL of 3,664 care workers older than 25 years of age. Multiple musculoskeletal diseases affected subjects' scores on the "Body Function" subscale in the standard QOL, but their activities in daily life were not limited. Most work-related LBP isn't diagnosed as a disease, but it has the potential to limit social and daily activities, and to lead to psychological problems, suggesting that LBP will cause degeneration in health-related QOL of care workers in the future and may force some to leave their jobs. However,

there are very few reports³⁾ about the relationship between LBP in care workers and their health-related QOL.

The purpose of this study was to investigate the severity and persistence of LBP in care workers and its influence on their health-related QOL.

SUBJECTS AND METHODS

The study group consisted of two hundred and five care workers who worked at three health care service facilities for the aged in Hyogo, Japan. We received responses from 197 of them, a response rate of 96%. The questionnaire was anonymous and was filled out unassisted. The 29 males who responded were excluded to reduce the influence of gender demographics along with 10 participants who made some omissions in their responses. Thus, the responses of 158 females were used in the analysis.

Subjects were asked their age, their qualifications and how long they had been working in the care industry. They were also asked if they were currently experiencing LBP. If the answer was affirmative, subjects were asked how long their LBP had persisted, with response opinions of: less than one month, one to two months, two to three months, and more than three months. If subjects were not experiencing

Table 1. Characteristics of the participants in the L-LBP Group and the H-LBP Group

		H-LBP Group (n=74)	L-LBP Group (n=84)
Age (years)	mean \pm SD	39.7 \pm 12.0	41.3 \pm 12.2
Qualification	Nurse	22	26
	Care worker	27	33
	Unqualified care worker	25	25
The number of years of experience	Less than 1 year	6	6
	1–3 years	7	12
	3–5 years	12	9
	5–10 years	26	33
	More than 10 years	23	24

Table 2. Characteristics of participants in the Acute Group and the Chronic Group

		Acute Group (n=43)	Chronic Group (n=58)
Age (years)	mean \pm SD	40.7 \pm 11.5	41.1 \pm 12.2
Qualification	Nurse	14	17
	Care worker	13	25
	Unqualified care worker	16	16
The number of years of experience	Less than 1 year	5	3
	1–3 years	4	10
	3–5 years	6	2
	5–10 years	13	26
	More than 10 years	15	17

LBP, they were asked if they had ever had LBP.

We asked subjects to evaluate the degree of LBP on a scale of 1 to 100 with 0 as “I don’t have any pain.” and 100 as “I have unbearable pain”. Subjects were asked to indicate the average degree of their LBP during the past month. The Short Form (36) Health Survey (SF-36)⁴⁾ was used to evaluate health-related QOL.

This study was carried out after obtaining the informed consent of all participants.

The participants were classified into two groups: a H-LBP group comprised of subjects who reported than the average degree of LBP, and an L-LBP group that comprised of subjects who reported lower than the average LBP. In addition, the participants who had LBP when the survey was carried out, were classified into two groups: an Acute group comprised of subjects whose LBP had continued for less than 3 months, and a Chronic group comprised of subjects whose LBP had continued for more than 3 months.

The score for each of the eight dimensions of SF-36 were compared between the H-LBP group and the L-LBP group, and between the Acute group and the Chronic group by the Mann-Whitney U test. The level of significance was chosen as less than 5%. PASW Statistics 18 was used for the statistical analyses.

RESULTS

The ages, qualifications, and the number of years of experience of subjects in the H-LBP group and the L-LBP

group, and in the Acute group and the Chronic group, are shown in Table 1 and Table 2, respectively.

One hundred and four participants (66%) had LBP at the time of survey, and 36 of the remaining of 54 participants (67%) who did not have LBP, had had LBP in the past. Of those with LBP, 43 participants (41%) belonged to the Acute group and 58 participants (56%) belonged to the Chronic group. Three people (3%) didn’t answer this part.

The average scores of all dimensions of SF-36 of the L-LBP group were significantly lower than those of the H-LBP group (Table 3).

The Chronic group showed a significantly higher degree of LBP ($p < 0.01$) and lower “Bodily Pain” ($p < 0.05$) compared to the Acute group. There were no differences in the dimensions of SF-36 except with regards to “Bodily Pain” (Table 4).

DISCUSSION

Sixty-six percent of the participants had LBP at the time of survey. It was almost the same level as the 64% in the report for 244 care workers by Fujii et al.⁵⁾ in 2007, and close to the 62% for 164 care workers reported by Tominaga et al.⁶⁾ in 2003. Sumida⁷⁾ reported that 66% of thirty nine care workers had LBP at a nursing care home in 2001. Recently new types of equipment have been developed and introduced, and training for handling techniques designed to reduce or prevent LBP in care workers has been delivered. However, it has been difficult to decrease the number of

Table 3. The comparison of the dimension scores between the L-LBP group and the H-LBP group

Dimensions	L-LBP group		H-LBP group	
	means	SD	means	SD
Physical Function	91.7	8.8	81.4	14.7**
Role Physical	88.6	16.1	78.7	22.2**
Role Emotional	87.4	16.8	75.9	26.5*
Social Function	80.2	20.9	68.3	23.5**
Bodily Pain	73.0	19.5	52.3	18.0**
Vitality	56.7	18.9	42.9	17.4**
Mental Health	72.6	15.7	59.5	20.4**
General Health	65.2	15.3	52.7	17.7**

*:p<0.05, **:p<0.01.

Table 4. The comparison of the dimension scores between the Acute group and the Chronic group

Dimensions	Acute group		Chronic group	
	means	SD	means	SD
Degree of LBP	46.4	24.1	56.4	17.7**
Physical Function	84.4	15.2	82.8	13.9
Role Physical	78.9	23.4	78.6	21.4
Role Emotional	78.5	25.9	77.7	24.7
Social Function	73.8	24.7	71.1	22.5
Bodily Pain	59.0	22.0	53.1	16.5
Vitality	47.5	19.6	44.8	18.0
Mental Health	64.2	21.5	62.4	19.9
General Health	57.6	19.1	54.6	17.8

**p<0.01.

complaints about LBP. There are also few reports about the outcome of these interventions.

Tominaga et al.⁶⁾ investigated work-related LBP in workers: 164 care workers, 227 medicine manufacturing workers, and 101 manufacturing workers. They reported that all dimension scores of SF-36 showed significantly lower levels in the workers with LBP compared to the workers without LBP at the time of survey. In the results of our survey, all scores of the dimensions of SF-36 were significantly lower in the H-LBP group compared to the L-LBP group. It is clear that the presence or the severity of workers' LBP influenced not only their pain and physical function but also their social and psychological QOL such as "social roles" and "mental health" for suggesting the necessity of a comprehensive approach to LBP for care workers. Recently, there has been some evidence of the benefits of physical therapy for chronic low back pain on some QOL scales but there has been little evidence to support it in Japan, so far.

A standard form of diagnostic evaluation and the problems caused by LBP on the activities and daily life of care workers should be clarified in Japan as soon as possible as it would lead to a comprehensive approach to work-related LBP in care workers.

There was no significant difference in the dimensional scores of SF-36 except for "Bodily Pain" when comparing

the Acute group with the Chronic group. According to recent research related to chronic pain, the current understanding is that acute pain and chronic pain cannot be distinguished by the term of the pain⁸⁾. Thirty-six of 44 participants (64%) were without LBP at the time of the survey, but had experienced LBP in the past. It may be difficult to distinguish whether their LBP is acute pain or chronic pain.

From the results, it was not possible to confirm that chronic LBP leads to a decrease in physical function, limitations on daily activities, or a decline in health-related QOL. The future challenge is to establish a comprehensive approach to work-related LBP and to clarify the desired outcomes. Limitations of this study were the small sample size, the selection of participants on a volunteer basis, and the lack of availability of objective data, such as physical strength or mobility.

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