The Impact of Musculoskeletal Pain on Health-Related Quality of Life in Fort Prajaksilapakom Hospital

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Objective: *To investigate the prevalence of musculoskeletal pain and its impact on health-related quality of life (HRQoL) in workers of Fort Prajaksilapakom Hospital.*
Material and Method: *A cross-sectional study was conducted. Participants completed self-reported questionnaires requesting demographic data and report of pain symptoms occurring within the last one month. In addition, the HRQoL questionnaire (Thai SF-36v2) was used to study the SF-36v2 score. Musculoskeletal pain was divided into five groups: 1) no pain, 2) pain at one site, 3) pain at two sites, 4) pain at three sites and 5) pain at four sites. The association between the SF-36v2 score and musculoskeletal pain was evaluated using multivariable linear regression analysis.*
Results: *Of 726 hospital workers, 485 (66.8%) participated in the present study. The majority of participants were female (65.3%) and comprised non-health care providers (56.3%) with a mean age of 37$\pm$11.5 years (range: 20-59). The prevalence of musculoskeletal pain during the last one month was 77.0%. Musculoskeletal pain was mostly reported at the lower extremities (50.8%), followed by low back (48.2), the neck (40.5%) and the upper extremities (33.0%). Multiple sites pain (pain at more than one site) was 51%. Each subscale score of the Thai SF-36v2 was significantly lower in participants with pain than in those without pain (physical functioning; $p<0.001$, physical role; $p = 0.001$, bodily pain; $p<0.001$, general health; $p<0.001$, vitality; $p<0.001$, social functioning; $p = 0.02$, emotion role; $p = 0.003$ and mental health; $p<0.001$). Multiple pain sites were more likely to be associated with lower HRQoL.*
Conclusion: *The present study showed the high prevalence of musculoskeletal pain and negative impact on HRQoL in workers of Fort Prajaksilapakom Hospital. The number of sites of musculoskeletal pain was associated with a reduction in the quality of life.*

Keywords: *Musculoskeletal pain, Prevalence, Health related Quality of life, Questionnaire, Thai SF-36v2, Hospital worker*

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Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage[1] and is a common problem among general and working populations. Musculoskeletal pain is also a common problem among the working population[2]. The present study of musculoskeletal pain has mostly focused on clarifying the risk factors and determinants of musculoskeletal pain without analyzing its consequences on the health-related quality of life (HRQoL).

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Various instruments have been developed for the measurement of HRQoL[3]. The 2nd version of the SF-36 questionnaire is one of the HRQoL standard questionnaires that has been developed by the Medical Outcome Trust that includes a 36-items survey that evaluates 8 subscales. This questionnaire has been accepted worldwide[4,5], and has also been suggested to be an appropriate instrument for use in musculoskeletal pain studies[6]. It was translated into Thai (Thai SF-36v2), tested and proven to be reliable and valid to use in low back pain patients[7].

A previous study reported that hospital workers' pain was often experienced and reported in multiple sites of the body[8-10]. The objective of the present study was to investigate the association between self-reported pain and HRQoL among hospital workers. The hypothesis of the present study is that

pain is associated with reduced quality of life whereas the association of pain and HRQoL become stronger as the number of pain sites increase.

Material and Method

Participant selection

The present study was a cross-sectional design carried out in Fort Prajaksilapakom Hospital, Royal Thai Army, Udon Thani, Northeastern Thailand in 2012. The hospital is a medium-sized general hospital consisting of 726 workers. Eligibility criteria included workers of Fort Prajaksilapakom Hospital who could understand and communicate in Thai and consented to participate in the present study. Subcontractors were excluded (Fig. 1). 485 workers participated in the present study (response rate = 66.8%) and completed questionnaires that consisted of baseline characteristics and pain symptom assessment. HRQoL score was also assessed using the Thai SF-36v2 questionnaire. The present study protocol was approved by the Institutional Review Board, Royal Thai Army Medical Department.

Musculoskeletal pain

The prevalence of musculoskeletal pain was obtained by asking whether the participants had any aches or pain within the last one month at the neck area, the upper extremities, the low back or the lower extremities. The anatomical areas were also illustrated by pictures. The response answer was "Yes" or "No". Pain at the upper and lower extremities was recorded including the right, left, or both sides. For data analysis, participants were divided into five groups: 1) no pain, 2) pain at one site, 3) pain at two sites, 4) pain at three sites, and 5) pain at four sites.

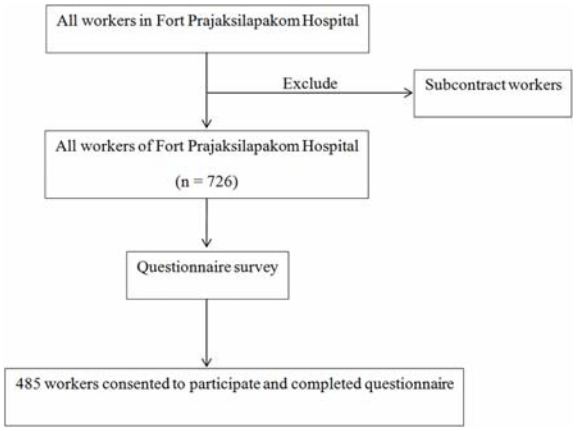

Fig. 1 Study flow chart.

HRQoL

The Thai SF-36v2 consisted of 36 items that included 8 subscales measuring physical functioning (10 items), physical role (4 items), bodily pain (2 items), general health (5 items), vitality (4 items), social functioning (2 items), emotion role (4 items) and mental health (5 items). In addition, perceived changes in health were assessed using one item. Each subscale had its score range from 0 to 100 for which the norm-based average score is 50 (SD 10) representing HRQoL during the last month. The higher scores reflected better health in that aspect.

Statistical analysis

The baseline characteristics and musculoskeletal pain were reported by frequency, percentage, mean, and standard deviation (SD). Thai SF-36v2 scores were reported by mean and standard deviation. Multivariable linear regression was used to investigate mean difference HRQoL score and 95% confidence interval between participants with and without pain; $p<0.05$ was taken as significant. This analysis was adjusted for age, sex, underlying disease (yes or no), monthly income ($\leq$20,000 or >20,000 baht/month), body mass index (BMI, kg/m^2) based on height and weight, working hours per week ($\leq$48 or >48 hours/week), regular aerobic exercise (yes or no) and smoking (never/ex- or current smoker). Statistical analyses were performed using STATA version 10.

Results

Participant characteristics

Four hundred and eighty-five workers participated in this study and completed the questionnaire. According to the baseline characteristics (Table 1), the majority of participants were female (65.3%) with a mean age of 37$\pm$11.5 years (range: 20-59); 70.6% had normal BMI; 56.3% were non-health care workers; 51.3% had working duration in hospital >10 years; 62.3% had working time >48 hours/week; 74.1% had income $\leq$20,000 baht/month; 69.8% did not have underlying diseases; 80.8% were non-smokers, and 41.4% had regular aerobic exercise ($\geq$150 minutes/week).

Musculoskeletal pain and HRQoL

The prevalence of musculoskeletal pain (pain at least one site) during the last one month was 77.0%. Participants who had pain most frequently reported it at the lower extremities (50.8%), followed by the low back (48.2%), the neck (40.5%) and the upper extremities

(33.0%). As shown in Table 2, a number of participants had many pain sites (51%). The average score of the Thai SF-36v2 of participants showed that physical functioning subscale was 69.2 (22.8), followed by physical role subscale 80.6 (20.7), bodily pain subscale 70.3 (21.1), general health subscale 63.6 (17.8), vitality subscale 64.3 (15.5), social functioning subscale 76.8 (18.3), emotion role subscale 81.5 (21.7), and mental health subscale 68.1 (14.5). All these scores were above the US norm-based average score.

Impact of musculoskeletal pain on HRQoL

Using multivariable analysis, the average score of Thai SF-36v2 of the one site pain group was less than the group with no pain using 5 subscales including physical functioning (10.3, 95% CI 4.4-16.2), bodily pain (14.7, 95% CI 9.3-20.0), general health (9.5, 95% CI 4.6-14.5), vitality (8.0, 95% CI 3.7-12.4), mental health (4.4, 95% CI 0.3-8.5) subscales, as shown in Table 3.

The group with two different sites of pain showed lower HRQoL scores than those with no pain in 6 subscales including physical functioning (12.8, 95% CI 6.6-20.0), physical role (6.5, 95% CI 0.3-12.6), bodily pain (25.6, 95% CI 20.0-31.2), general health (10.7, 95% CI 5.6-15.8), vitality (7.2, 95% CI 2.6-11.8) and mental health (4.5, 95% CI 0.3-8.8) subscales.

The group with three different sites of pain showed lower HRQoL scores than the no pain group in all subscales including physical functioning (14.5, 95% CI 7.8 -21.1), physical role (12.7, 95% CI 6.1-19.4), bodily pain (26.9, 95% CI 20.8-32.9), general health (14.7, 95% CI 9.2-20.2), vitality (11.9, 95% CI 6.9-16.8), social functioning (9.3, 95% CI 3.3-15.3), emotion role (12.0, 95% CI 5.1-19.0) and mental health (9.6, 95% CI 4.9-14.2) subscales.

Those with four different sites of pain had lower HRQoL scores than the no pain group in all subscales including physical functioning (19.3, 95% CI 12.4-26.1), physical role (10.6, 95% CI 3.7-17.5), bodily pain (30.8, 95% CI 24.7-37.0), general health (14.0, 95% CI 8.3-19.7), vitality (10.4, 95% CI 5.3-15.4), social functioning (8.0, 95% CI 1.7-14.2), emotion role (11.2, 95% CI 3.9-18.4) and mental health (9.1, 95% CI 4.3 to 13.9) subscales.

Table 1. Baseline characteristics of participants (n = 485)

	n	%
Age (years), mean (SD)		37 (11.5)
Female	310	65.3
Normal BMI	327	70.6
Background		
Physician	18	3.9
Pharmacist	5	1.1
Nurse and nurse aid	161	34.4
Dentist and assistant	7	1.5
Medical technician	9	1.9
Physical therapist	4	0.9
Nonhealth care provider	263	56.3
Working duration in hospital >10 years	243	51.3
Working hour >48 hours/week	289	62.3
Income ≤20,000 baht/month	351	74.1
No underlying diseases	328	69.8
Regular aerobic exercise	195	41.4
No smoking	382	80.8

BMI, Body mass index

Table 2. Prevalence of the musculoskeletal pain

	n	%
Pain group		
No pain	104	23.0
Pain at 1 site	118	26.1
Pain at 2 sites	93	20.6
Pain at 3 sites	72	15.9
Pain at 4 sites	65	14.4
Neck pain	190	40.7
Upper extremity pain	156	33.0
Low back pain	229	48.4
Lower extremity pain	242	50.8

Discussion

The present study is the first to reveal the impact of musculoskeletal pain on HRQoL among hospital workers. The authors hypothesized that musculoskeletal pain was associated with reduced HRQoL. Thus, the association of musculoskeletal pain and HRQoL would become stronger as the number of pain sites increased. The main finding of the present study supported our hypothesis.

The authors found that musculoskeletal pain was one of common health problems among hospital workers, which was similar to those of previous studies[11-19] and had an impact on both physical and mental aspects of health status measured by SF-36. Other studies have also shown that musculoskeletal pain has an impact on health status measured by SF-36[20-23].

The present results showed that one and two different sites of pain groups had a negative impact on physical functioning, general health, and vitality but

Table 3. Impact of musculoskeletal pain on HRQoL

Subscale	No.	Mean (SD)	Beta Coef.	95% CI	*p*-value
Physical function					
No pain	100	79.2 (20.6)			
1-site pain	110	69.9 (22.5)	10.3	4.4 to 16.2	<0.001
2-site pain	88	66.7 (20.8)	12.8	6.6 to 20.0	
3-site pain	69	64.6 (23.9)	14.5	7.8 to 21.1	
4-site pain	61	60.6 (23.1)	19.3	12.4 to 26.1	
Role of physical					
No pain	102	85.7 (20.3)			
1-site pain	114	83.6 (19.1)	3.5	-2.4 to 9.4	0.001
2-site pain	92	79.3 (19.3)	6.5	0.3 to 12.6	
3-site pain	72	73.8 (24.8)	12.7	6.1 to 19.4	
4-site pain	61	76.0 (18.4)	10.6	3.7 to 17.5	
Bodily pain					
No pain	101	87.1 (17.0)			
1-site pain	114	74.0 (18.4)	14.7	9.3 to 20.0	<0.001
2-site pain	92	63.7 (18.4)	25.6	20.0 to 31.2	
3-site pain	72	61.6 (20.6)	26.9	20.8 to 32.9	
4-site pain	65	56.9 (16.7)	30.8	24.7 to 37.0	
General health					
No pain	103	72.4 (15.2)			
1-site pain	113	63.7 (17.5)	9.5	4.6 to 14.5	<0.001
2-site pain	92	61.8 (17.1)	10.7	5.6 to 15.8	
3-site pain	70	57.4 (16.8)	14.7	9.2 to 20.2	
4-site pain	64	58.5 (19.2)	14.0	8.3 to 19.7	
Vitality					
No pain	101	71.3 (14.0)			
1-site pain	114	63.8 (16.2)	8.0	3.7 to 12.4	<0.001
2-site pain	93	63.8 (14.7)	7.2	2.6 to 11.8	
3-site pain	71	59.9 (15.8)	11.9	6.9 to 16.8	
4-site pain	65	60.0 (14.1)	10.4	5.3 to 15.4	
Social function					
No pain	99	80.7 (16.9)			
1-site pain	108	78.4 (18.9)	2.7	-2.7 to 8.1	0.02
2-site pain	91	76.5 (17.5)	4.6	-1.0 to 10.2	
3-site pain	72	72.7 (20.2)	9.3	3.3 to 15.3	
4-site pain	62	72.8 (17.2)	8.0	1.7 to 14.2	
Role of emotion					
No pain	102	86.8 (19.3)			
1-site pain	115	83.7 (20.7)	3.7	-2.4 to 10.0	0.003
2-site pain	93	81.9 (20.5)	5.1	-1.4 to 11.6	
3-site pain	72	75.3 (24.8)	12.0	5.1 to 19.0	
4-site pain	64	75.7 (22.7)	11.2	3.9 to 18.4	
Mental health					
No pain	101	72.6 (14.0)			
1-site pain	114	68.9 (14.6)	4.4	0.3 to 8.5	<0.001
2-site pain	92	68.4 (14.2)	4.5	0.3 to 8.8	
3-site pain	72	64.2 (14.6)	9.6	4.9 to 14.2	
4-site pain	64	63.8 (13.5)	9.1	4.3 to 13.9	

Adjusted for age, sex, underlying disease, income, aerobic exercise, smoking, and BMI

lower than those with three and four sites pain group in these three subscales. Furthermore, three and four sites pain groups were similar in negative impacts on all subscales in both physical and mental aspects of SF-36v2. Finally, higher pain sites were more likely to have a higher pain magnitude and interfere with normal work.

Although the present study used different groups of study populations and HRQoL questionnaires, the present results were similar to those of Paananen et al[8]. They assessed HRQoL among young adults with musculoskeletal pain by the 15D instrument that consisted of 15 questions concerning mobility, vision, hearing, breathing, sleeping, eating, speech, elimination, usual activities, mental function, discomfort and symptoms, depression, distress, vitality and sexual activity. They reported that the number of involved sites of self-reported musculoskeletal pain were associated with the level of reduction in HRQoL. Additionally, our results were also similar to the studies conducted by Bergman et al[21] and Picavet et al[23]. Bergman et al, which showed that the mean scores of the no chronic pain group were higher than those of the Swedish norm for all 8 subscales. Subjects with chronic regional pain showed lower mean scores compared with those of the Swedish norm for all 8 subscales while those with chronic widespread pain had the lowest scores. The present study conducted by Picavet et al showed that HRQoL of subjects measured by SF-36 deteriorated as a result of an increasing number of musculoskeletal conditions comprising 12 conditions such as rheumatoid arthritis, gout, osteoarthritis of knee and hip. Unfortunately, data of Thai norm scores are not available to compare with our results. Further study of Thai norm scores is required.

Since the present study was a cross-sectional design, the temporal relationship between musculoskeletal pain and HRQoL could not be established. Moreover, self-reported musculoskeletal pain was used without information of clinical examination. Thus, the prevalence of musculoskeletal pain could be more reliable and valid if clinical data were included. In addition, some factors such as pain intensity, pain duration in each site of pain and psychosocial factors which might have some effect on HRQoL were not performed in the present study.

In conclusion, the probability of reduced HRQoL likely occurred according to the number of pain sites recorded by hospital workers. Thus, musculoskeletal pains, especially those occurring at three and four different sites of pain, seemed to bear clinical significance. However, further study should be conducted in prospective settings to confirm the causal relationship between musculoskeletal pain and HRQoL.

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Potential conflict of interest

None.

References

1. Loeser JD, Treede RD. The Kyoto protocol of IASP Basic Pain Terminology. Pain 2008; 137: 473-7.
2. Behrens V, Seligman P, Cameron L, Mathias CG, Fine L. The prevalence of back pain, hand discomfort, and dermatitis in the US working population. Am J Public Health 1994; 84: 1780-5.
3. Guyatt GH, Feeny DH, Patrick DL. Measuring health-related quality of life. Ann Intern Med 1993; 118: 622-9.
4. Keller SD, Ware JE Jr, Bentler PM, Aaronson NK, Alonso J, Apolone G, et al. Use of structural equation modeling to test the construct validity of the SF-36 Health Survey in ten countries: results from the IQOLA Project. International Quality of Life Assessment. J Clin Epidemiol 1998; 51: 1179-88.
5. Ware JE Jr, Gandek B, Kosinski M, Aaronson NK, Apolone G, Brazier J, et al. The equivalence of SF-36 summary health scores estimated using standard and country-specific algorithms in 10 countries: results from the IQOLA Project. International Quality of Life Assessment. J Clin Epidemiol 1998; 51: 1167-70.
6. Beaton DE, Hogg-Johnson S, Bombardier C. Evaluating changes in health status: reliability and responsiveness of five generic health status measures in workers with musculoskeletal disorders. J Clin Epidemiol 1997; 50: 79-93.
7. Jirarattanaphochai K, Jung S, Sumananont C, Saengnipanthkul S. Reliability of the medical outcomes study short-form survey version 2.0 (Thai version) for the evaluation of low back pain patients. J Med Assoc Thai 2005; 88: 1355-61.
8. Paananen M, Taimela S, Auvinen J, Tammelin T, Zitting P, Karppinen J. Impact of self-reported musculoskeletal pain on health-related quality of

life among young adults. Pain Med 2011; 12: 9-17.
9. Miranda H, Kaila-Kangas L, Heliovaara M, Leino-Arjas P, Haukka E, Liira J, et al. Musculoskeletal pain at multiple sites and its effects on work ability in a general working population. Occup Environ Med 2010; 67: 449-55.
10. Sembajwe G, Tveito TH, Hopcia K, Kenwood C, O'Day ET, Stoddard AM, et al. Psychosocial stress and multi-site musculoskeletal pain: a cross-sectional survey of patient care workers. Workplace Health Saf 2013; 61: 117-25.
11. Burdorf A, Koppelaar E, Evanoff B. Assessment of the impact of lifting device use on low back pain and musculoskeletal injury claims among nurses. Occup Environ Med 2013; 70: 491-7.
12. Denis A, Zelmar A, Le Pogam MA, Chaleat-Valayer E, Bergeret A, Colin C. The PRESLO study: evaluation of a global secondary low back pain prevention program for health care personnel in a hospital setting. Multicenter, randomized intervention trial. BMC Musculoskelet Disord 2012; 13: 234.
13. Dennerlein JT, Hopcia K, Sembajwe G, Kenwood C, Stoddard AM, Tveito TH, et al. Ergonomic practices within patient care units are associated with musculoskeletal pain and limitations. Am J Ind Med 2012; 55: 107-16.
14. Hong JY, Koo JW. Work-related Musculoskeletal diseases and occupational injuries in health care workers. J Korean Med Assoc 2010; 53: 446-53.
15. Mehrdad R, Dennerlein JT, Morshedizadeh M. Musculoskeletal disorders and ergonomic hazards among Iranian physicians. Arch Iran Med 2012; 15: 370-4.
16. Pompeii LA, Lipscomb HJ, Dement JM. Predictors of lost time from work among nursing personnel who sought treatment for back pain. Work 2010; 37: 285-95.
17. Reme SE, Dennerlein JT, Hashimoto D, Sorensen G. Musculoskeletal pain and psychological distress in hospital patient care workers. J Occup Rehabil 2012; 22: 503-10.
18. Reza Shafiezadeh K. The prevalence of musculoskeletal disorders and its relationship to general health statement in hospital nurses. Life Sci J 2011; 8: 409-15.
19. Shafizadeh KR. Prevalence of musculoskeletal disorders among paramedics working in a large hospital in Ahwaz, southwestern Iran in 2010. Int J Occup Environ Med 2011; 2: 157-65.
20. Arvidsson S, Arvidsson B, Fridlund B, Bergman S. Health predicting factors in a general population over an eight-year period in subjects with and without chronic musculoskeletal pain. Health Qual Life Outcomes 2008; 6: 98.
21. Bergman S, Jacobsson LT, Herrstrom P, Petersson IF. Health status as measured by SF-36 reflects changes and predicts outcome in chronic musculoskeletal pain: a 3-year follow up study in the general population. Pain 2004; 108: 115-23.
22. Nakamura M, Nishiwaki Y, Ushida T, Toyama Y. Prevalence and characteristics of chronic musculoskeletal pain in Japan. J Orthop Sci 2011; 16: 424-32.
23. Picavet HS, Hoeymans N. Health related quality of life in multiple musculoskeletal diseases: SF-36 and EQ-5D in the DMC3 study. Ann Rheum Dis 2004; 63: 723-9.

ผลกระทบของอาการปวดกล้ามเนื้อและกระดูกต่อคุณภาพชีวิตในผู้ปฏิบัติงานในโรงพยาบาล

ชาญวิทย์ โพธิ์งามวงศ์, อาริยา มุงคำภา, กุลริสา ใสโยธา, วิมลศิริ ภวะภูตานนท์, จุฬารัตน์ ดวงตาผา

วัตถุประสงค์: เพื่อศึกษาหาความชุกและผลกระทบต่อคุณภาพชีวิตของอาการปวดกล้ามเนื้อและกระดูกในผู้ปฏิบัติงานในโรงพยาบาล

วัสดุและวิธีการ: รูปแบบการศึกษาเป็นแบบตัดขวาง โดยผู้ร่วมวิจัยจะทำการตอบแบบสอบถามด้วยตนเอง โดยเนื้อหาแบบสอบถามประกอบด้วยคำถามเกี่ยวกับข้อมูลพื้นฐานและการทำงาน, คำถามเกี่ยวกับอาการปวดคอ, ปวดแขน, ปวดหลังส่วนล่างและปวดขาในรอบ 1 เดือน และคำถามเกี่ยวกับคุณภาพชีวิตโดยใช้แบบสอบถามเอสเอฟ-36 รุ่นที่ 2 โดยในการวิเคราะห์ตัวแปรอาการปวดกล้ามเนื้อและกระดูกจะถูกแบ่งออกเป็น 5 กลุ่ม ตามจำนวนตำแหน่งของการปวดได้แก่ ไม่ปวด, หนึ่งตำแหน่ง, สองตำแหน่ง, สามตำแหน่ง, และสี่ตำแหน่ง ซึ่งการวิเคราะห์หาความสัมพันธ์ใช้การวิเคราะห์การถดถอยเชิงเส้นหลายตัวแปร

ผลการศึกษา: ผู้ปฏิบัติงาน 485 รายเข้าร่วมงานวิจัย (ร้อยละ 66.8 ของผู้ปฏิบัติงานทั้งหมด) ส่วนใหญ่เป็นเพศหญิง (ร้อยละ 65.3) และเป็นผู้ปฏิบัติงานที่ไม่เกี่ยวข้องกับการดูแลผู้ป่วย (ร้อยละ 56.3) มีอายุเฉลี่ย 37±11.5 ปี ความชุกของอาการปวดกล้ามเนื้อและกระดูกในรอบหนึ่งเดือนคือ ร้อยละ 77 อาการปวดขาถูกรายงานมากที่สุดร้อยละ 50.8 รองลงมา คือ ปวดหลังส่วนล่าง ร้อยละ 48.2, ปวดคอ ร้อยละ 40.5, และปวดแขน ร้อยละ 33.0 ตามลำดับ อาการปวดมากกว่าหนึ่งตำแหน่งถูกรายงานร้อยละ 51 ผู้ร่วมวิจัยที่มีอาการปวดจะมีคะแนนคุณภาพชีวิตที่ประเมินจากแบบสอบถาม เอสเอฟ-36 รุ่นที่ 2 ต่ำกว่าผู้ร่วมวิจัยที่ไม่มีอาการปวดในทุกๆ ด้าน (physical functioning; $p<0.001$, physical role; $p = 0.001$, bodily pain; $p<0.001$, general health; $p<0.001$, vitality; $p<0.001$, social functioning; $p = 0.02$, emotion role; $p = 0.003$ and mental health; $p<0.001$) ผู้ที่มีอาการปวดหลายตำแหน่งมีความสัมพันธ์ต่อการลดลงของคุณภาพชีวิต

สรุป: อาการปวดกล้ามเนื้อและกระดูกในผู้ปฏิบัติงานในโรงพยาบาลมีความชุกที่สูงและส่งผลกระทบด้านลบ ต่อคุณภาพชีวิตของผู้ปฏิบัติงานอีกทั้งจำนวนตำแหน่งของอาการปวดมีความสัมพันธ์ต่อการลดลงของคุณภาพชีวิต