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# Neck pain in Hong Kong: a telephone survey on consequences and health service utilisation

## Key Messages

1. The prevalence of neck pain in the past 12 months in our sample was 64.6%. Of those with neck pain, 37.8% had moderate to severe pain; 13.7% had to limit their social activities; and 18.9% had to limit their work.
2. Managers, professionals, and administrators were at significantly higher risk of having neck pain, compared with housewives or those who were unemployed or retired.
3. Of the neck pain sufferers, 25.2% consulted health service practitioners: medical consultation in a public or private clinic was most common (9.2%), followed by physiotherapy (4.9%). For self-care treatment, massage was most preferred (83.3%).
4. Physiotherapy was regarded as the most effective treatment; 60.7% of those receiving physiotherapy achieved complete improvement. Self-massage was less effective; 59.5% of those who self-massaged had an improvement of half or less.

## Introduction

Neck pain is common among Hong Kong people.<sup>1</sup> Nonetheless, information on the health service utilisation by people with neck pain, and the consequences and cost of neck pain management is lacking. Without objective population data, patient-centred clinical studies on the efficacy of various therapeutic or rehabilitation programmes and planning of budgets and resources allocation for management of neck pain are based on estimates of impact.

This study aimed to (1) investigate the consequences of neck pain in terms of disability and rate of absenteeism from work, (2) describe the health service utilisation pattern of neck pain sufferers in Hong Kong, and (3) analyse factors associated with neck pain and health services utilisation in neck pain sufferers.

## Methods

This study was conducted from October 2007 to September 2009. A regionally representative telephone survey using a two-stage randomisation process (of the telephone numbers and the respondents in the households) was carried out. The inclusion criteria were Hong Kong residents older than 15 years and ability to communicate in Cantonese. Verbal consent was obtained before starting the interviews.

## Results

Of 6754 telephone numbers dialled, 4640 subjects were selected and successfully interviewed. The response rate was 68.7%. The mean duration of the interviews (for respondents who met the definition of neck pain) was 15.7 (standard deviation, 3.4; range, 7-39) minutes.

Of the 4640 respondents, 2997 (64.6%) reported having neck pain in the previous 12 months. In 166 (5.5%) neck pain sufferers, the neck pain was confirmed by a physician as being work-related. The most common cause (as speculated by the respondents) was poor sleeping posture (25.6%), followed by work (22.3%) and others (18.4%) [Table 1]. The pain was mild in 59.1% and moderate to severe in 37.8%; 13.7% had to reduce their social activities; 18.9% had to limit their work; 11.6% reported that neck pain disturbed their daily activities; and 3.6% applied for sick leave owing to neck pain during the past 12 months. The mean duration of disturbance in 271 subjects was 65.5 days, whereas the mean total sick leave duration for 100 subjects was 19.4 days.

Females had a significantly higher prevalence than males (68.1% vs 59.5%,  $P < 0.001$ ). Managers, professionals, and administrators had the highest prevalence (81.6%), whereas 65.1% of those who were unemployed and retired had neck pain.

Regarding utilisation of health services in the past 12 months, 25.2% of those with neck pain consulted health service practitioners in the past 12 months: medical consultation in a public or private clinic was most common (9.2%), followed by physiotherapy (4.9%). For self-care treatment, massage was most preferred (83.3%) [Table 2].

*Hong Kong Med J* 2012;18(Suppl 3):S13-5

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HHSRF project number: 05060261

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**Table 1. Cause of neck pain and severity**

Parameter	No. (%) of subjects with neck pain (n=2997)
Cause of neck pain (as speculated by respondents)	
Degeneration	169 (5.6)
Household work	50 (1.7)
Exercises	62 (2.1)
Entertainment	69 (2.3)
Academics	81 (2.7)
Not enough rest	182 (6.1)
Mentally unstable	39 (1.3)
Work	667 (22.3)
Poor sleeping posture	768 (25.6)
Height of pillow not appropriate	149 (5.0)
Others	551 (18.4)
Not sure	210 (7.0)
Severity of recent episode	
Almost no pain	37 (1.2)
Mild pain	1771 (59.1)
Moderate pain	996 (33.2)
Severe pain	138 (4.6)
Intolerable pain	55 (1.8)
Social activities	
Normal, without extra pain	2209 (73.7)
Normal, but with extra pain	257 (8.6)
Reduced	412 (13.7)
Staying at home	92 (3.1)
Completely stopped	26 (0.9)
No response	1 (0.0)
Job or household work	
No problem	1474 (49.2)
Able to perform normal tasks with pain	952 (31.8)
Shorten the normal work/job by <50%	286 (9.5)
Shorten the normal work/job by >50%	217 (7.2)
Can't work at all	66 (2.2)
No response/refused to answer	2 (0.1)

A total of 2431 subjects with neck pain identified the treatment they considered most effective for neck pain alleviation; 86.6% believed that their neck pain improved following treatment; 50.1% considered that the neck pain reduced completely or by more than half (Table 2). Physiotherapy was regarded as the most effective treatment; 60.7% of those receiving physiotherapy achieved complete improvement. Massage was the most preferred self-care treatment, but 59.5% of those who self-massaged had an improvement of half or less.

**Discussion**

For the worldwide adult population (age 17-70 years), the 12-month prevalence of neck pain ranges from 16.7% to 75.1% (mean, 37.2%).<sup>2</sup> In this study, the prevalence was 64.6%, which is higher than the 53.6% reported in our previous study in 2006.<sup>1</sup> The percentage of neck pain sufferers having moderate-to-severe neck pain was also higher (37.8% vs 15%<sup>1</sup>); 13.7% (compared to 4.8% in 2006<sup>1</sup>) had to reduce their social activities; and 4% (compared to 0.3% in 2006<sup>1</sup>) had to stay at home or stop their social activities. Neck pain caused a mean disturbance of 65.5 days in the past year; 18.9% of neck pain sufferers (compared to 3.1% in 2006<sup>1</sup>) had to limit their work; and 3.6% had to apply for sick leave (mean, 19.4 days). These results suggest that the severity and impact of neck pain in the general adult population in Hong Kong is higher than that in 2006.

**Table 2. Pattern of health services utilisation and self-care, choice of most effective treatment, and degree of improvement**

Parameter	No. (%) of subjects with neck pain (n=2997)	No. of subjects identifying the most effective treatment (n=2431)	Self-rated improvement in neck pain after treatment (% of subjects)			
			Less than half	Half	More than half	Complete
Health service provider						
Public clinic	124 (4.1)	19	15.8	5.3	57.9	21.1
Private clinic	152 (5.1)	54	3.7	11.1	35.2	50.0
Physiotherapy	147 (4.9)	54	13.0	11.1	25.3	60.7
Chinese massage therapy	106 (3.5)	50	10.0	30.0	50.0	10.0
Acupuncture	82 (2.7)	32	25.0	3.1	50.0	21.9
Bone setting	59 (2)	28	10.7	7.1	46.4	35.7
Herbal medicine	34 (1.1)	15	20.0	13.3	33.3	33.3
Chiropractic	27 (0.9)	3	0.0	20.6	33.3	46.1
Reflexology	24 (0.8)	1	0	100	0	0
<b>Total</b>	<b>755 (25.2)</b>					
Self-care treatment*						
Massage	2497 (83.3)	931	30.9	28.6	28.4	12.1
General exercise	1576 (52.6)	252	24.6	25.0	33.7	16.7
Ointment and medicine plaster	1550 (51.7)	477	22.2	27.3	27.3	23.3
Hot pack	736 (24.6)	94	20.2	30.9	38.3	10.6
Western medicine	262 (8.7)	67	10.4	14.9	34.3	40.3
Cold pack	196 (6.5)	11	9.1	45.5	36.4	9.1
Traction	156 (5.2)	193	28.0	33.2	26.9	11.9
Chinese medicine	129 (4.3)	8	12.5	12.5	37.5	37.5
Electrotherapy	123 (4.1)	8	37.5	25.0	25.0	12.5
Others	320 (10.7)	134	14.9	13.4	42.5	29.1

\* More than one item may be chosen; items may not be exclusively for treating neck pain

Managers, professionals and administrators were at significantly higher risk of having neck pain, likely owing to highly competitive working environments, excessive stress at work, and long working hours. High levels of stress and physical and psychological workplace factors are predictors of neck pain among workers in industrial and service sectors.<sup>3</sup>

In our study, 25.2% of neck pain sufferers (compared to 16.9% in 2006<sup>1</sup>) consulted medical or health professionals. Of them, 9.2% (compared to 15.7% in 2006<sup>1</sup>) visited a medical doctor and 4.9% (compared to 1.7% in 2006<sup>1</sup>) sought help from physiotherapists. There is an increasing trend for complementary methods such as Chinese massage therapy (3.5%) or acupuncture (2.7%), compared to the study in 2006.<sup>1</sup> This is comparable to a survey in the United States<sup>4</sup> reporting that one in three Americans with back or neck pain consulted complementary health professionals. Utilisation of health care resources for neck pain has increased. In our study, 60.7% and 50.0% of neck pain sufferers reported complete improvement of neck pain following physiotherapy and medical consultation in private clinics, respectively. This is contrary to the survey in the United States<sup>4</sup> that reported low perceived effectiveness of conventional therapies.

Massage (83.3%) and general exercises (52.6%) were the two most preferred modes of self-care treatment for neck pain, but their effectiveness was low. Self-medication with western or Chinese medicine achieved a high percentage of complete improvement, and their use increased to 13%

from 2.8% in 2006.<sup>1</sup> Nonetheless, it is inappropriate to use the results of this observational study to assess the efficacy of various treatments for neck pain. Randomised controlled trials are warranted.

### Limitations

Despite the high telephone coverage rate in Hong Kong, non-coverage bias may still occur. Application of visual aids to depict the topographical location of neck pain was not feasible. The self-reporting nature of this survey may have recall bias.

### Acknowledgement

This study was supported by the Health and Health Services Research Fund, Food and Health Bureau, Hong Kong SAR Government (#05060261).

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