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Prevalence of chronic pain, insomnia, and fatigue in Hong Kong

Key Messages

1. Chronic pain, insomnia and fatigue affect a substantial proportion of the Hong Kong general population; as much as a quarter of the adult population experience one of these chronic symptoms. The prevalence of comorbidity is also high, impacting nearly one-third of the adult population. This is a considerable burden to society in terms of individual suffering and disability and to the health care system.

2. Those who are older, female, more educated, married or divorced, or with other health problems are more likely to develop these chronic symptoms.

Introduction

Chronic pain, insomnia, and fatigue are important public health problems but are poorly documented in Chinese populations. About 11% of Hong Kong's adult population are affected by chronic pain and insomnia. The prevalence of fatigue among women has been reported to be as high as 71%. There may be considerable overlapping among these three symptoms, but the extent of comorbidity is uncertain. These chronic symptoms pose significant burdens on the health care system, social security, and quality of life of those affected. This study aimed to: (1) determine the prevalence and severity of chronic pain, fatigue, and insomnia in the general adult population of Hong Kong; (2) identify associated factors; and (3) quantify the health care utilisation associated with these conditions over the preceding 3 months.

Subjects and methods

This cross-sectional, population-based, observational study was conducted from February 2007 to September 2008. A random sample of 5001 Chinese adults aged ≥18 years was recruited to complete a structured telephone interview.

Chronic pain was first identified using two questions: "Are you currently troubled by physical pain or discomfort, either all the time or on and off?" and "Have you had this pain or discomfort for more than 3 months?"[1] Subjects answering yes to both questions were then asked about the severity, site, and duration of their pain. The severity of current pain and pain over the previous 6 months was assessed using the Chronic Pain Grade questionnaire[2] and was classified into five grades: grade zero (pain free), grade I (low disability, low intensity), grade II (low disability, high intensity), grade III (high disability, moderately limiting), and grade IV (high disability, severely limiting). According to the International Association for the Study of Pain in 1986,[1] chronic pain is defined as pain that has persisted for at least 3 months. We therefore changed the time frame of the questionnaire items to 3 months.

The Pittsburgh Sleep Quality Index[3] was used to assess chronic insomnia. It evaluates multiple dimensions of sleep over a 1-month period.[4,5] There are 19 items generating seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The sum of the seven component scores yields one global score of subjective sleep quality ranging from 0 to 21; higher scores indicate poorer subjective sleep quality. A global score of >5 is defined as having chronic insomnia.[3-5]

Chronic fatigue (defined as fatigue for more than 6 months) was assessed using the Chalder Fatigue Scale,[6] which consists of 11 items measuring severity of physical and mental fatigue in the past 6 months using two subscales. Responses 1 and 2 are dichotomised as a score of 0, whereas responses 3 and 4 are dichotomised as a score of 1. The highest total fatigue score is 11, a cut-off score of ≥8 is defined as having chronic fatigue.[6,7]

Mental health was evaluated with the Hospital Anxiety and Depression Scale,[8] which assesses emotional well-being in people with physical illness, minimising contamination by physical symptoms. It comprises two subscales,

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one measuring anxiety and another measuring depression.

Quality of life (QoL) was measured using the 12-item Short-Form Health Survey (SF-12) that consists of a physical component score and a mental component score.[9,10]

Health care utilisation was assessed using the Thematic Household Survey 2002,[11] which comprises a series of household surveys conducted by the Census and Statistics Department to collect statistics on the health status of local residents and patterns of doctor consultation, hospitalisation, dental consultation, the provision of medical benefits by employers/companies, and the coverage of medical insurance purchased by individuals. In the present study, questions pertaining to doctor consultation, whether having chronic or long-term disease, and types of diseases were enquired.

Sociodemographic data was gathered using questions on gender, age, education, marital status, religious affiliations, income, and employment status. Questions pertaining to lifestyle (tobacco use, alcohol consumption, and physical activity) were modified from the Thematic Household Survey to suit the needs of telephone interviewing. Questions on smoking status, drinking, and exercise habits were also included.

Results

Of the 5001 respondents, 55% were women; 70.2% had no religious affiliation; and 65% reported a monthly household income below HK$25 000. In terms of marital status, education, and employment, 34.1% had never married whereas 59.9% were married/cohabited; 19% had completed tertiary education whereas 45% had attained secondary education; and 47.2% were in full-time employment. Those aged 40 to 49 years constituted the largest proportion of respondents (24.1%).

For chronic pain, the prevalence was 34.2% and it was most common in the age-group of 40 to 49 years (41.7%). For chronic insomnia, the prevalence was 39.4% and it was least common in the youngest and oldest age-groups (18-29

years, 34.0%; ≥60 years, 46.9%). For chronic fatigue, the prevalence was 10.7% and it was most common in the age-group of ≥60 years (14.1%) [Table].

The prevalence of these chronic symptoms was higher among women, with chronic insomnia being the most common (43.1%), followed by chronic pain (39.9%), and chronic fatigue (13.1%). The prevalence of only one of the chronic symptoms was 13.3% and was similar between males (13.6%) and females (13.0%). The prevalence of any two of the chronic symptoms (comorbidity) was 13.8% and was most common in the middle-aged groups (40-49 years, 15.7%; 50-59 years, 16.1%) and among females (15.8%). The prevalence of all three chronic symptoms (multiple comorbidities) was 4.3% and was more common in females (5.7%) than males (2.6%), and most common in the age-group of 40 to 49 years (5.0%).

Factors associated with increased odds of chronic pain included female gender, older age, being divorced/separated, higher education level, working part-time, having had chronic health problems, poor mental health, and lower QoL score. Students and those taking regular exercise had lower odds of chronic pain. Those having chronic insomnia were more likely to be female, practising Buddhism/Daoism/ancestor worship, having had chronic health problems, poor mental health, and lower mental QoL score. Compared to those with no religion, respondents who were Catholic were less likely to report chronic insomnia. Factors associated with increased odds of chronic fatigue included younger age, being retirees or housewives, having had chronic health problems, poor mental health, and lower QoL score. Compared to those who did not exercise, those who exercised three to five times a week were less likely to report chronic fatigue.

Factors significantly associated with increased odds of having any of the two chronic symptoms included female gender, older age, Christian, higher education level, having had chronic health problems, poor mental health, and lower QoL score. Compared to those who did not exercise, those who exercised one to two times per week had lower odds of having any of the two symptoms. Females, older age,

Table. Prevalence of chronic pain, insomnia, and fatigue by age and gender*

Group	Chronic pain	Chronic insomnia	Chronic fatigue	Only one symptom	Any of two symptoms	All three symptoms
Entire sample	34.19 (33.26-35.13)	39.42 (38.34-40.50)	10.72 (10.43-11.00)	13.30 (12.94-13.65)	13.84 (13.47-14.21)	4.30 (4.19-4.40)
Age-group (years)						
18-29	22.68 (22.07-23.29)	34.0 (33.07-34.93)	9.52 (9.27-9.77)	11.62 (11.31-11.93)	11.04 (10.75-11.33)	3.17 (3.10-3.24)
30-39	33.84 (32.91-34.76)	73.49 (71.47-75.51)	8.90 (8.67-9.14)	12.33 (12.00-12.66)	14.52 (14.13-14.91)	3.84 (3.74-3.93)
40-49	41.66 (40.52-42.80)	72.12 (70.14-74.11)	10.90 (10.61 -11.18)	14.67 (14.28-15.06)	15.67 (15.25-16.10)	5.03 (4.90-5.15)
50-59	39.98 (38.88-41.07)	68.46 (70.34-66.58)	10.79 (10.50-11.07)	15.36 (14.95-15.77)	16.06 (15.63-16.49)	4.81 (4.69-4.93)
≥60	37.11 (36.09-38.12)	46.92 (45.63-48.21)	14.13 (13.75-14.51)	13.05 (12.71-13.40)	13.48 (13.12-13.84)	4.75 (4.63-4.86)
Gender						
Male	28.26 (27.49-29.02)	35.12 (34.16-36.08)	8.10 (7.89-8.31)	13.64 (13.28-14.00)	11.43 (11.12-11.73)	2.61 (2.56-2.67)
Female	39.85 (38.76-40.94)	43.08 (41.90-44.26)	13.09 (12.74-13.44)	13.01 (12.67-13.36)	15.82 (15.40-16.25)	5.69 (5.54-5.83)

* Data are presented as % (95% CI)

being married, divorced or separated, having had chronic health problems, poor mental health, and lower QoL score were more factors conferring increased odds of having all three chronic symptoms. Compared to those with a monthly household income below HK$15 000, those with monthly household incomes ranging from HK$40 000 to HK$59 999 had lower odds of having all three chronic symptoms.

Regarding health care utilisation for those with chronic pain, insomnia, and fatigue, 47%, 49%, and 55.5%, respectively, had visited at least one type of western medicine practitioner, and 31%, 30.2%, and 32.6%, respectively, had consulted at least one type of therapist, with Chinese herbal medicine practitioner being the most common (17.6%, 17.6%, and 19.8%, respectively). The use of self-medication was high (49.5%, 43.4%, and 45.2%, respectively), whereas 25.4%, 24.6%, and 24.4%, respectively, had consumed over-the-counter western medication.

Older age and having had chronic health problems were significantly associated with one, two, and all levels of health care utilisation (all P<0.05). Higher pain score was significantly associated with all three levels of health care utilisation (all P<0.001). Higher insomnia and fatigues scores were associated with two and all levels of health care utilisation (P<0.05). The number of symptoms, lifestyle, mental health, and QoL score were not associated with levels of health care utilisation.

Discussion

Based on our sample, the estimated point prevalence of chronic pain, insomnia, and fatigue in the Hong Kong general population are 28.6%, 32.5%, and 8.8%, respectively, which corresponds to 0.6 to 1.8 million middle-aged women. Our estimates for chronic pain and insomnia are comparable to those reported in western populations (2-45% for chronic pain, 10-48% for chronic insomnia),[3,8-10] whereas our estimate for chronic fatigue is much lower than that reported in western populations (23.6%).[12-16]

In our sample, the prevalence of multiple chronic symptoms was high. The estimated point prevalence of comorbidity in the Hong Kong general population is 11.4%, which represents about 0.6 million adults. The prevalence of comorbidity was higher in the middle-aged group and among women. Our estimate for comorbidity is higher than that in a UK study reporting 6% for only one symptom and 2% for comorbidity.[7]

In our sample, the presence of chronic or long-term health problems was associated with the three chronic symptoms, suggesting involvement of other physical illnesses. There was also an age-related trend. Lack of regular exercise was associated with chronic pain and fatigue, reflecting both reverse causality and inadequacy of the activity assessment questions for pain. Women, older age-groups, those having

had chronic health problems, and those who lacked regular exercise had higher odds of comorbidities. These findings were in agreement with those in the UK study.[7] In addition, poor mental health and lower QoL score were associated with the presence of multiple chronic symptoms.

After controlling for gender, age, and chronic health problems, more severity in chronic pain, insomnia, and fatigue was associated with greater use of health care services, which is consistent with previous studies in the West.[2,14,17-19] Lower utilisation rates in the public sector by those with chronic pain or fatigue may be due to difficulties in accessing public services and the lack of pain clinics in Hong Kong. Chinese herbal medicine was the most popular type of alternative therapy for those with chronic symptoms, and about 25% of the respondents had consumed over-the-counter western preparations. Self-medication is cheaper and is the first resort for those who do not view their problems as life-threatening.

Acknowledgement

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