

## Original Article

# Health-related quality of life among Chinese people with psoriasis in Hong Kong

## 香港華人銀屑病患者的健康相關生活質素

CT Tse 謝志達 and KM Ho 何景文

Psoriasis is a common skin disease that may impair health-related quality of life (HRQOL). We sought to describe the HRQOL among local Chinese people with psoriasis by SF-36 Health Survey and to examine the relationship between HRQOL and clinical severity. The SF-36 scores of 132 adult Chinese patients with psoriasis were significantly lower than that of the sex- and age-matched HK healthy controls. This reduction of functioning in psoriasis was comparable to that of Severe Acute Respiratory Syndrome or bronchiectasis. The SF-36 scores had weak correlations with modified PASI suggesting that patient-reported HRQOL and physician-assessed clinical severity were two independent outcome measures.

銀屑病是常見的皮膚病，能損害病人的健康相關生活質素(HRQOL)。我們使用自覺健康狀態量表(SF-36)調查本地華人銀屑病患者的健康相關生活質素及其與臨床病況的關係。132名成人華人患者的自覺健康狀態量表(SF-36)顯著低於與其年齡及性別相配的健康對照組。銀屑病患者此項功能的削弱與嚴重急性呼吸系統綜合症及支氣管擴張症患者相若。自覺健康狀態量表(SF-36)與修訂銀屑病皮疹面積和嚴重程度評分法(PASI)的相關性低，顯示患者匯報的自覺健康狀態量表(SF-36)和醫生評估的銀屑病皮疹面積和嚴重程度評分法(PASI)為兩項獨立的成效評估方法。

**Keywords:** Health-related quality of life (HRQOL), psoriasis, SF-36

**關鍵詞：**健康相關生活質素(HRQOL)，銀屑病，SF-36

Special Preventive Programme, CHP, Department of Health, Hong Kong

CT Tse, MBBS, MRCP, FHKAM

Social Hygiene Service, CHP, Department of Health, Hong Kong

KM Ho, FRCP, FHKAM

Correspondence to: Dr. CT Tse

Kowloon Bay Integrated Treatment Centre, 9/F Kowloon Bay Health Centre, 9 Kai Yan Street, Kowloon Bay, Hong Kong

## Introduction

Psoriasis is a common skin disease that can considerably impair the health-related quality of life (HRQOL). In an early report, the prevalence rate of psoriasis in the Mongoloid races of the Far East including Hong Kong was reported to be 0.3%.<sup>1</sup> Although this prevalence rate was lower than that was reported in the US, it was the fifth most common skin disease attending Hong Kong government skin clinics in 2001.<sup>2</sup> While this

common skin disease is rarely life threatening, it can be life ruining due to pruritus, cosmetic disfigurement and social stigmatisation.<sup>3</sup> This negative impact on HRQOL was confirmed by studies in the Western population.<sup>4-6</sup>

Nevertheless, impact of psoriasis on Chinese people cannot be generalised from the Western literatures because different cultural background may generate different perception of HRQOL.<sup>7</sup> We sought to describe the HRQOL among the Chinese people with psoriasis in Hong Kong by a validated generic HRQOL questionnaire and to examine the relationship between HRQOL and clinical severity.

## Method

All adult Chinese patients (aged 18 to 65 years old) attending the government skin clinics from October 2003 to April 2004 were invited to join the study. These clinics were Fanling Integrated Treatment Centre (ITC), Lek Yuen Social Hygiene Clinic (SHC), Tuen Mun SHC, Yau Ma Tei Dermatological Centre (DC), Yung Fung Shee DC, and Kowloon Bay ITC. All subjects had clinical diagnosis of psoriasis (without co-morbidity) for more than one year.

Each subject was asked to complete the Chinese (HK) SF-36 Health Survey. Simultaneously, the attending physicians collected the demographic data and measured the clinical severity by Modified Psoriasis Area and Severity Index (MPASI).

The study protocol was approved by the Ethics Committee, Department of Health, HKSAR.

## Measurement

### *SF-36*

MOS 36-item Short Form Health Survey (SF-36) is one of the most commonly used generic HRQOL instrument worldwide. It consists of 36 questions

that assess the health status in 8 domains: physical function (PF), role physical (RP), bodily pain (BP), general health (GH), mental health (MH), role emotional (RE), social functioning (SF) and vitality (VT). These domains can be summarised into two aggregate summary scores: Physical Component Score (PCS) and Mental Component Summary (MCS).

We used the validated Chinese version [The Chinese (HK) SF-36] that had been confirmed to have high internal consistency (Cronbach's alpha >0.7 in all scales) and test-retest reliability in the local setting.<sup>7</sup>

The HK normative values of SF-36 was established after studying 2,410 healthy individuals.<sup>7</sup> Since the gender and age had significant effects on the SF-36 scores, we reported our results after sex and age-specific standardisation of HK normative values (mean 50, SD10).<sup>8</sup> Higher SF-36 scores indicated better HRQOL.

### *MPASI*

MPASI was a modified version of PASI (Psoriasis Areas and Severity Index) that had been used in a local study of psoriasis.<sup>9</sup> It was a summation of extent and lesional severity (erythema, desquamation and induration) with higher value indicating worse clinical status.

## Results

We recruited 132 psoriasis patients without co-morbidity (response rate = 91%), of which 94 (71%) were male. The mean age was 41.3 years old. The most common clinical type was chronic plaque psoriasis (95.1%). The majority (93.4%) had stable diseases that had not required hospitalisation in the preceding year.

### *SF-36 scores of psoriasis*

The SF-36 scores of these psoriasis patients without co-morbidity were lower than that of 2,410 sex and age-matched HK healthy controls. Although the General Health score and Vitality score in

psoriasis patients were close to the normal population (mean 50, SD 10), the remaining six scale scores were significantly lower ( $P < 0.01$ ). Bodily Pain [mean BP score (SD) = 41.10 (11.98)] and Social Function [mean SF score (SD) = 37.01 (14.54)] scored the lowest in the physical component and mental component respectively (Table 1). Both the Physical Component Summary (PCS) and the Mental Component Summary (MCS)

of psoriasis patients were significantly lower than that of healthy controls.

*Subgroup analysis of SF-36 scores*

There was no statistically difference ( $P > 0.05$ ) in PCS or MCS between the subgroups that were identified by their gender, age group, working status, duration of illness and head involvement (Table 2).

**Table 1.** SF-36 scores of 132 psoriasis patients without co-morbidity

SF-36	Mean	(SD)	P value*
PF	43.21	(17.58)	$P < 0.001$
RP	44.59	(13.98)	$P < 0.001$
BP	41.10	(11.98)	$P < 0.001$
GH	48.65	(10.73)	$P = 0.13$
VT	49.99	(10.12)	$P = 0.99$
SF	37.01	(14.54)	$P < 0.001$
RE	47.67	(10.73)	$P < 0.01$
MH	45.31	(10.66)	$P < 0.001$
PCS	43.63	(13.22)	$P < 0.001$
MCS	46.33	(11.03)	$P < 0.01$

\* P value between psoriasis patients and healthy controls (standardised to mean 50 and SD 10) by unpaired t test

However, arthropathy was found to be a predictor poor physical functioning. The PCS of psoriasis patients with arthropathy [Median PCS score (IQR) = 26.05 (15.51-44.78);  $P < 0.01$ ; Table 3] was significantly lower than that without arthropathy [median PCS score (IQR) = 48.59 (38.14-53.86)]. This reduction in physical functioning was attributed to significantly reduced Physical Function Score [median PF score (IQR) = 23.40 (-1.80 to 49.00);  $P < 0.01$ ] and Bodily Pain Score [BP score (IQR) = 27.56 (13.55 to 31.54);  $P < 0.001$ ].

*Comparison of SF-36 scores between psoriasis and other illnesses*

Both bronchiectasis and SARS are severe respiratory diseases that were shown to impair

**Table 2.** Subgroup comparisons of SF-36 summary scores among 132 psoriasis patients

Potential predictors	N	PCS			MCS			
		Mean	(SD)	P value	Mean	(SD)	P value	
<b>Gender</b>	Male	97	43.56	(12.93)	0.91*	46.36	(11.06)	0.96*
	Female	35	43.84	(14.19)		46.25	(11.13)	
<b>Age group</b>	<40 y	64	42.50	(14.25)	0.34*	46.28	(11.08)	0.96*
	41-65 y	68	44.71	(11.93)		46.39	(11.07)	
<b>Working/studying</b>	Yes	101	44.67	(12.41)	0.11*	46.13	(11.11)	0.70*
	No	31	40.26	(15.31)		47.01	(10.92)	
<b>Duration of illness</b>	<5 y	42	45.12	(10.60)	0.55 <sup>+</sup>	45.79	(10.65)	0.92 <sup>+</sup>
	5-10 y	40	41.90	(14.84)		46.56	(13.42)	
	>10 y	50	43.77	(13.92)		46.70	(9.32)	
<b>Head involvement</b>	Yes	114	43.08	(13.36)	0.23*	45.76	(11.11)	0.13*
	No	18	47.11	(12.10)		49.98	(10.11)	

\*P values between subgroups by unpaired t-test; <sup>+</sup>P values between subgroups by ANOVA test

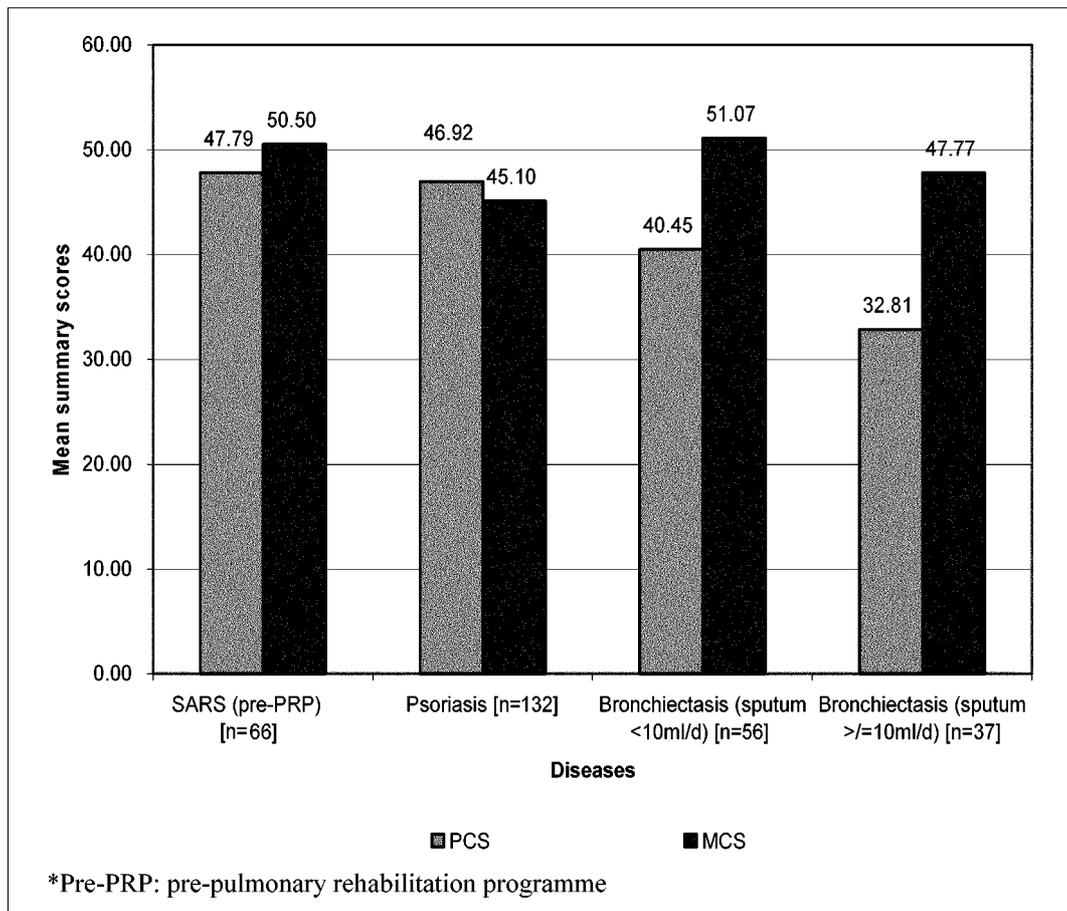
**Table 3.** Comparison of SF-36 scores between psoriasis patients with and without arthropathy

SF-36	Without arthropathy (N=122)		Arthropathy (N=10)		*P values
	Median	(IQR)	Median	(IQR)	
PCS	48.59	(38.14 - 53.86)	26.05	(15.51 - 44.78)	<0.01
MCS	46.60	(39.80 - 53.32)	51.77	(37.03 - 59.86)	=0.29
PF	45.06	(42.04 - 55.50)	23.40	(-1.80 - 49.00)	<0.01
RP	54.83	(36.75 - 55.15)	31.57	(18.47 - 55.01)	=0.09
BP	43.13	(34.97 - 50.66)	27.56	(13.55 - 31.54)	<0.001
GH	50.11	(40.52 - 56.39)	43.90	(38.01 - 53.31)	=0.20
VT	50.19	(41.48 - 58.15)	45.03	(42.31 - 55.93)	=0.47
SF	39.35	(24.90 - 48.18)	32.36	(30.60 - 41.98)	=0.59
RE	50.29	(39.40 - 57.52)	52.02	(33.48 - 57.52)	=0.96
MH	46.52	(39.15 - 53.07)	39.21	(32.94 - 54.00)	=0.20

\*P value between two groups by Mann-Whitney test

the HRQOL.<sup>10,11</sup> Our result showed that the disability of psoriasis was comparable to these respiratory diseases (Figure 1).

Although the reduction in physical functioning by psoriasis (mean psoriasis PCS score = 46.93) was not as severe as that by bronchiectasis (mean PCS



**Figure 1.** SF-36 summary scores of psoriasis and other illnesses.

scores of bronchiectasis with sputum <10 ml/day and  $\geq 10$  ml/day were 32.81 and 40.45 respectively), the reduction of mental functioning by psoriasis (mean psoriasis MCS = 45.10) was the worst among the three illnesses (mean bronchiectasis MCS = 47.77 and 51.07; mean SARS MCS = 50.50).

*Relationship between SF-36 score and MPASI*  
Of note, the weak correlation between PCS and MCS (Pearson's coefficient  $r = 0.11$ ,  $P > 0.05$ , Table 4) supported the notion that these two summary scores were two distinct health dimensions (divergent validity).

As expected, negative correlations between SF-36 scores and MPASI were observed as higher SF-36 scores represented better HRQOL. Again, we found weak correlations between MPASI and SF-36 ( $r_s = -0.14$  &  $-0.12$ ,  $P > 0.05$ ).

## Discussion

This study suggested that the HRQOL of 132 patients was significantly worse than that of 2,410 sex and age-matched HK healthy controls. The greatest mental burden among our subjects was the impairment in social functioning. This result is not surprising because psoriasis, as a skin disease, can cause cosmetic disfigurement and social embarrassment. Of the almost 18,000 people responded to the survey conducted by National Psoriasis Foundation, 79% felt embarrassed when people viewed their psoriasis.<sup>12</sup> Similarly, Weiss found that three-fourths of psoriasis patients felt the need to hide their psoriasis and the same proportion of patients avoided activities like swimming.<sup>13</sup> The impairment of social functioning,

in part, stems from the general public's repugnance for ugliness and fear of contagious skin conditions.<sup>3</sup> Perhaps the misnomer "牛皮癬" which carries a meaning of contagious fungal infection should be avoided in the local settings and replaced by a more appropriate Chinese translation "銀屑病".

The greatest physical burden among our subjects was bodily pain. This bodily pain could not be explained by psoriatic arthropathy alone because only 10 subjects (7.6%) had arthropathy. We speculated that some of the pain was due to excoriation secondary to pruritus. Further study is needed to clarify the source of pain. Nevertheless, psoriatic arthropathy was a significant predictor of poor HRQOL. This suggests that people with psoriatic arthropathy deserves a priority of treatment.

There is often a misconception that skin diseases are somewhat less serious than other medical illnesses. Our results refuted this by confirming that the degree of disability experienced by people with psoriasis was comparable to that of people with SARS or bronchiectasis. This result echoed the comparative study by Rapp et al in which the disability measured by SF-36 in 317 US psoriasis patients were more than that in people with cancer or myocardial infarction.<sup>6</sup>

Our results also had some resource implication to the local health care system because the impairment measured by SF-36 (HK) Health Survey was related to increased health service utilisation rate in HK, including monthly outpatient consultation rate and hospitalisation rate.<sup>14</sup>

The weak correlation between HRQOL and MPASI suggested that patient-reported HRQOL and physician-assessed clinical severity were two independent outcome measures. This weak correlation is partly attributed to the different perspectives between patients and physicians. For example, patients may consider "embarrassment over appearance" the greatest burden on HRQOL, while physicians do not assign it as an indicator

**Table 4.** Correlation matrix

	PCS	MCS
PCS	1	
MCS	0.11 <sup>a</sup>	1
MPASI	-0.14 <sup>b</sup>	-0.12 <sup>b</sup>

<sup>a</sup> Pearson correlation; <sup>b</sup> Spearman's rho correlation

of clinical severity. We propose that both clinical severity and HRQOL should be used as outcome measures in clinical trial of psoriasis.

This study had several limitations. Firstly, the convenience sampling and the collection method could introduce bias. While the HK normative values of SF-36 were established by telephone interview, our data were collected by self-administered questionnaire. Studies in the US and Australia had found that the SF-36 scores obtained by telephone interview and self-completion could be significantly different, especially for mental health score.<sup>15,16</sup> Furthermore, the comparisons of SF-36 scores between the three illnesses were neither sex- nor age-matched. This might distort the relative burden of mental and physical component. Although MPASI was easier to use than the conventional PASI, it was not a standardised assessment and was less sensitive in detecting the clinical severity.

In conclusion, psoriasis is not a trivial disease. Appropriate resources should be allocated to improve the HRQOL. This effort is likely to be rewarded by a lessening of the health service utilisation rate. Clinicians should pay attention to the impairment of social functioning that is often the most resentful disability.

## Acknowledgement

We thank Dr Cindy Lam for her permission to use the Chinese (HK) SF-36 health Survey and supplying the detailed (10-year interval of either sex) HK normative values. We also thank our SHS colleagues for collecting the clinical data and Dr Krystal Lee for her invaluable advice on statistics.

## References

1. Yip SY. The prevalence of psoriasis in the Mongoloid race. *J Am Acad Dermatol* 1984;10:965-8.
2. Lo KK. Introduction of Skin Diseases. In: Lo KK, Chong LY, Tang YMW, Ho KM, editors. *Handbook of Dermatology & Venereology (Vol 1)*. 3th ed. Social Hygiene Service; 2003:15-25.
3. Koo JYM. Quality of life issues in psoriasis. Available from: URL:<http://www.dermnet.com/projet2/NewFiles/koo.htm>.
4. Finlay AY, Coles EC. The effect of severe psoriasis on the quality of life of 369 patients. *Br J Dermatol* 1995; 132:236-44.
5. Lundberg L, Johannesson M, Silverdahl M, Hermansson C, Lindberg M. Health-related quality of life in patients with psoriasis and atopic dermatitis measured with SF-36, DLQI and a subjective measure of disease activity. *Acta Derm Venereol* 2000;80:430-4.
6. Rapp SR, Feldman SR, Exum ML, Fleischer AB Jr, Reboussin DM. Psoriasis causes as much disability as other major medical diseases. *J Am Acad Dermatol* 1999;41(3 Pt 1):401-7.
7. Lam CLK, Lauder IJ, Lam TP, Gandeck B. Population based norming of the Chinese (HK) version of the SF-36 health survey. *HK Pract* 1999; 21:460-70.
8. Ware JE, Kosinski M, Keller SF. SF-36 Physical and Mental Health Summary Scales: A User's Manual. Boston, MA: The Health Institute; 1994.
9. Look CN. Low dose Cyclosporin A (CSA) in the treatment of psoriasis- Hong Kong experience. *Social Hygiene Service Bulletin* 1995;3:79-83.
10. Chan SL, Chan-Yeung MM, Ooi GC, Lam CL, Cheung TF, Lam WK, Tsang KW. Validation of the Hong Kong Chinese version of the St. George Respiratory Questionnaire in patients with bronchiectasis. *Chest* 2002;122:2030-7.
11. Lam SP, Lau MOL, Chow E, Lee WM, Yeung A, Tang I. Using Chinese Version Short-form Health Survey (SF-36) to Measure the Quality of Life Status of SARS Pulmonary Rehabilitation Program Patients. Abstract in Hong Kong International Conference on Infectious Diseases (HKICID-2004).
12. Krueger G, Koo J, Lebwohl M, Menter A, Stern RS, Rolstad T. The impact of psoriasis on quality of life: results of a 1998 National Psoriasis Foundation patient-membership survey. *Arch Dermatol* 2001;137:280-4.
13. Weiss SC, Kimball AB, Liewehr DJ, Blauvelt A, Turner ML, Emanuel EJ. Quantifying the harmful effect of psoriasis on health-related quality of life. *J Am Acad Dermatol* 2002;47:512-8.
14. Lam CL, Fong DY, Lauder IJ, Lam TP. The effect of health-related quality of life (HRQOL) on health service utilisation of a Chinese population. *Soc Sci Med* 2002; 55:1635-46.
15. Perkins JJ, Sanson-Fisher RW. An examination of self- and telephone-administered modes of administration for the Australian SF-36. *J Clin Epidemiol* 1998;51: 969-73.
16. McHorney CA, Kosinski M, Ware JE Jr. Comparisons of the costs and quality of norms for the SF-36 health survey collected by mail versus telephone interview: results from a national survey. *Med Care* 1994;32:551-67.