ORIGINAL ARTICLE

Health-Related Quality of Life in Patients With Poststroke Emotional Incontinence

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ABSTRACT. Chen Y-K, Wong KS, Mok V, Ungvari GS, Tang WK. Health-related quality of life in patients with poststroke emotional incontinence. Arch Phys Med Rehabil 2011; 92:1659-62.

Objective: To assess the effect of poststroke emotional incontinence (PSEI) on health-related quality of life (HRQOL).

Design: Cross-sectional observational study.

Setting: Psychiatric clinic.

Participants: Stroke survivors (N=385; consecutive series) discharged from the acute stroke unit between December 2004 and June 2007.

Interventions: Not applicable.

Main Outcome Measures: Chinese (Hong Kong) version of the 36-Item Short Form Health Survey (SF-36) for HRQOL.

Results: Fifty-eight (15.1%) patients had PSEI. After adjustment for possible demographic and clinical confounders, subjects with PSEI had significantly lower physical and mental summary scores, particularly in the General and Mental Health, Social Function, and Role–Emotional subscales of the SF-36.

Conclusion: PSEI has an independent effect on HRQOL. Longitudinal studies of stroke are warranted to confirm and extend this finding.

Key Words: Emotional disorders; Quality of life; Rehabilitation; Stroke.

EMOTIONAL INCONTINENCE (EI) is defined as uncontrollable episodes of laughing, crying, or both.[1] Poststroke emotional incontinence (PSEI) usually begins within weeks of a stroke and lasts for weeks to several years.[2] The bursts of laughter or crying can be triggered by a mild emotional stimulus or occur for no apparent reason, usually continuing for several seconds to several minutes and frequently recurring, sometimes dozens of times per day. PSEI occurs in 11% to 52% of stroke survivors[3] assessed at 3 to 6 months after stroke. In Chinese patients, the reported prevalence is 17.9%.[4] PSEI is distressing and embarrassing for both patients and their families. It is socially disabling and may interfere with stroke rehabilitation. However, health professionals mainly have neglected the condition.

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Health-related quality of life (HRQOL) is a broad multidimensional construct referring to aspects of people's lives that are associated with their health.[5] HRQOL has been used as an outcome measure in stroke research.[5] Determinants of stroke survivors' HRQOL include age, sex,[6] poststroke depression and anxiety, and physical function.[7] As a common poststroke complication, PSEI also may influence HRQOL adversely. Functional impairment, such as sexual dysfunction, has been reported to be more frequent in patients with PSEI.[8] However, no study has attempted to evaluate the effect of PSEI on HRQOL of stroke survivors. Hence, we set out to explore the effect of PSEI on HRQOL in Chinese patients with stroke.

METHODS

Participants

This study was part of a large project that recruited 519 consecutively admitted patients with ischemic stroke for a poststroke psychiatric interview 3 months after stroke.[7] Three hundred eighty-five of the 519 patients formed the present study sample. They were selected from patients with ischemic stroke admitted to the Acute Stroke Unit (ASU) at the Prince of Wales Hospital in Hong Kong between December 2004 and June 2007. Patients were invited to attend a research clinic and were offered participation in the study if they (1) were 18 years or older, (2) had an acute first or recurrent ischemic stroke, (3) scored 15 or higher on the Cantonese version of the Mini-Mental State Examination (MMSE) on admission, (4) were of Chinese descent and fluent in the Cantonese dialect, (5) had an HRQOL assessment, and (6) were willing and able to give informed consent. Patients were excluded if they (1) had a central nervous system disease other than stroke, (2) had significant aphasia or dysarthria to the extent of precluding meaningful communication, (3) had a recurrent stroke within 3 months after the index stroke, or (4) remained hospitalized with the index stroke.

List of Abbreviations

ANCOVA	analysis of covariance
ASU	Acute Stroke Unit
BI	Barthel Index
EI	emotional incontinence
GDS	Geriatric Depression Scale
GH	General Health
HRQOL	health-related quality of life
MCS	Mental Component Summary
MH	Mental Health
MMSE	Mini-Mental State Examination
NIHSS	National Institutes of Health Stroke Scale
PCS	Physical Component Summary
PSEI	poststroke emotional incontinence
RE	Role–Emotional
SF	Social Function
SF-36	36-Item Short Form Health Survey

Basic sociodemographic and clinical data, including age, sex, total years of formal education, prior stroke, vascular risk factors, and National Institutes of Health Stroke Scale (NIHSS) score on admission, were retrieved from the ASU Stroke Registry by a research nurse.

The study protocol was approved by the Clinical Research Ethics Committee of the Chinese University of Hong Kong. Each participant signed a consent form.

Diagnosis of PSEI

Psychiatric interviews were conducted 3 months after the index stroke at a research clinic in the same hospital. A psychiatrist (W.K.T.) administered a structured questionnaire to patients and their relatives to establish the diagnosis of PSEI according to criteria of Kim and Choi-Kwon.[6] PSEI was considered present if patients showed excessive or inappropriate laughing, crying, or both compared with their premorbid state. If both the patient and cohabitating relative(s) agreed that excessive or inappropriate laughing or crying occurred on 2 or more occasions since the latest stroke, the diagnosis of PSEI was established.

Assessment Instruments

A trained research assistant evaluated the health-related quality of life (HRQOL) of all subjects 3 months after the index stroke at the research clinic during a face-to-face interview. Physical and cognitive function and depressive symptoms were assessed concurrently given the previously reported associations between these variables and HRQOL.[7,9,10]

1. The Chinese (Hong Kong) version of the 36-Item Short Form Health Survey[11] (SF-36) was used to assess HRQOL. The SF-36 focuses on the subjective perception of health and contains 8 subscales, covering General Health (GH), Mental Health (MH), role limitations due to emotional problems (Role–Emotional [RE]), role limitations due to physical problems (Role–Physical), Social Function (SF), Vitality, Bodily Pain, and Physical Function. Two composite scores, Physical Component Summary (PCS) and Mental Component Summary (MCS),[11] were calculated. The sum for scores of the 8 subscales ranges from 0 to 100; a higher value indicates better HRQOL. Cronbach α for the subscales in the original Chinese version ranged from .63 to .92.[12]
2. The Barthel Index[13] (BI) measures basic level of activities of daily living. The BI has a maximum of 100 points and covers 10 personal activities: feeding, personal hygiene, bathing, dressing, toilet, bladder control, bowel control, chair/bed transfer, ambulation/wheelchair, and stair climbing. Internal consistency (Cronbach α) of the BI Chinese version ranged from .87 to .91.[14]
3. The Cantonese version of the MMSE[15] measured subjects' global cognitive function. This version has been validated[15] and widely used in the cognitive assessment of Chinese patients with stroke.[16,17]
4. The Chinese version of the 15-item Geriatric Depression Scale (GDS)[18] rated the presence and severity of depressive symptoms. The GDS has sensitivity of 89% and specificity of 73% to detect poststroke depression.[19,20]

Table 1: Comparison of the PSEI and Non-PSEI Groups With Respect to Demographic and Clinical Characteristics

Variables	PSEI (n=58)	Non-PSEI (n=327)	$t/\chi^2/Z$	*P*	Analysis of Covariance*		
					F	*P*	Partial η^2
Clinical variables							
Age† (y)	65.7±10.3	65.7±12.1	−0.019	.985	ND	ND	ND
Women‡	30 (51.7)	119 (36.4)	4.882	.027	ND	ND	ND
Education (y)§	4.7±4.1	5.7±4.7	−2.259	.024	ND	ND	ND
NIHSS score§	5.9±4.2	4.3±3.0	−2.043	.041	ND	ND	ND
Hypertension‡	44 (75.9)	230 (70.3)	0.733	.392	ND	ND	ND
Diabetes‡	30 (51.7)	112 (34.3)	6.461	.011	ND	ND	ND
Ischemic heart disease‡	5 (8.6)	25 (7.6)	0.065	.798	ND	ND	ND
Prior stroke‡	17 (29.3)	56 (17.7)	4.207	.040	ND	ND	ND
Assessment at 3 mo poststroke							
MMSE§ score	24.8±3.7	26.2±3.2	−2.948	.003	ND	ND	ND
GDS§ score	8.2±3.9	4.3±3.3	−6.773	<.001	ND	ND	ND
BI§ score	18.4±2.4	19.2±1.7	−4.377	<.001	ND	ND	ND
SF-36§ domains							
PF score	54.8±30.8	74.2±26.6	−5.023	<.001	2.385	.123	.006
GH score	34.1±17.8	53.3±19.4	−6.418	<.001	9.799	.002	.026
VT score	49.5±23.7	68.1±19.2	−5.487	<.001	5.034	.025	.013
SF score	77.2±19.2	92.7±13.9	−6.924	<.001	14.394	<.001	.037
MH score	56.1±22.2	77.6±16.7	−6.938	<.001	19.129	<.001	.049
RP score	37.5±43.0	62.8±40.0	−4.101	<.001	0.336	.563	.001
RE score	44.3±43.4	86.9±28.8	−7.958	<.001	31.921	<.001	.079
BP score	61.0±27.0	80.2±23.1	−5.020	<.001	4.835	.029	.013
MCS score	45.4±11.4	57.0±8.8	−6.996	<.001	19.689	<.001	.050
PCS score	46.4±10.0	57.0±10.0	−6.593	<.001	8.743	.003	.023

NOTE. Values expressed as mean ± SD or n (%).
Abbreviations: BP, Bodily Pain; ND, not done; PF, Physical Function; RP, Role–Physical; VT, Vitality.
*Adjusted for sex, prior stroke, diabetes, and NIHSS, BI, MMSE, and GDS scores. Effect size was described by using F, *P*, or partial η^2.
†*t* Test.
‡Chi-square test.
§Mann-Whitney *U* test.