Journal of Research in Personality 43 (2009) 770–776

Contents lists available at ScienceDirect

Journal of Research in Personality

journal homepage: www.elsevier.com/locate/jrp

A study of resiliency among Chinese health care workers: Capacity to cope with workplace stress

Oi-Ling Siu [a,*], C. Harry Hui [b], David R. Phillips [a], Lin Lin [d], Tze-wai Wong [c], Kan Shi [d]

[a] Lingnan University, Hong Kong
[b] University of Hong Kong, Hong Kong
[c] The Chinese University of Hong Kong, Hong Kong
[d] Chinese Academy of Sciences, PR China

ARTICLE INFO

Article history:
Available online 26 June 2009

Keywords:
Resiliency
Workplace stress
Health care workers
Chinese
Positive psychology

ABSTRACT

This paper reports a study of resiliency to cope with workplace stress among Chinese health care workers. We adopted a qualitative–quantitative-biomarker approach to conduct interviews, focus group discussions, and a two-wave longitudinal survey. Wave 1 survey was conducted among health care workers in Hong Kong and Mainland China ($N = 773$). Amongst them, 287 took part in Wave 2 survey. A confirmatory factor analysis consistently supported a 9-item scale. A sub-sample's ($N = 33$) resiliency was positively related to salivary IgA levels (an immune marker). Results from hierarchical regressions demonstrated that resiliency measured in Wave 1 was positively related to job satisfaction, work-life balance, and quality of life; and negatively related to physical/psychological symptoms and injuries at work in Wave 2.

1. Introduction

Like in many Western societies, the economy in some key cities in Greater China such as Hong Kong and Beijing has in recent decades shifted from production-based to an emphasis on service and knowledge. This transition together with globalization of the economy has placed an increased demand on worker's competencies and capabilities to deal with change, challenges and conflicts, and to overcome stressful and adverse circumstances. Obviously, it is important to investigate a valuable personal asset in coping with workplace stress among Chinese employees.

Our focus in this study was on health care workers. Stress, burnout, and workplace violence remain top stressors in health care sectors (ILO, 2006). It is estimated that stress and violence together possibly account for 30% of the overall costs of ill-health and accidents, and may account for approximately 0.5–3.5% of the loss in GDP per year (Hoel, Sparks, & Cooper, 2002).

Recently, with the development of positive psychology (Peterson, 2006; Seligman, 2002), the concept of psychological capitals (PsyCaps) emerged, which refers to the competencies/capacities that enable employees to face challenges and adversity in the workplace (e.g., Luthans, 2002; Luthans & Youssef, 2007). Among the four PsyCaps that have been identified (self-efficacy, hope, optimism, and resiliency), resiliency is particularly important to today's fast-paced, stressful, unpredictable work environment in China (Luthans, 2002; Luthans, Vogelgesang, & Lester, 2006; Luthans & Youssef, 2007). Avolio and Luthans (2006) noted that "developing this PsyCap of resiliency and leveraging it in the turbulent times facing most organizations today would seem to be a very wise investment" (p. 156).

While there is a growing research literature on children's resiliency (e.g., Masten & Reed, 2002) and also resiliency in later life (e.g., Ryff & Singer, 2003), studies on resiliency in workers are relatively lacking. Even though discussion on resiliency has appeared in the organizational behavior literature in recent years (e.g., Harland, Harrison, Jones, & Reiter-Palmon, 2005; Luthans, Avey, Aviolo, Norman, & Combs, 2006; Luthans, Avolio, Walumbwa, & Li, 2005; Luthans et al., 2006), the body of knowledge that applies resiliency to the workplace specifically coping with work stress is fragmented and generally inadequate (Sutcliffe & Vogus, 2003). In summarizing future directions for research on resiliency, Ryff and Singer (2003) also commented that literatures on resiliency are not linked to research on stress and coping. The purposes of the current study are: first, to develop and validate a measure of resiliency applicable to Chinese health care workers; and second, to examine its beneficial role in coping with workplace stress.

1.1. Resiliency: conceptualization and measurement issues

The study for resiliency has deep roots in clinical and developmental psychology which one focused on the negative aspects such as risk factors (e.g., Block & Kremen, 1996). Recently, more positive

* Corresponding author. Address: Department of Sociology and Social Policy, Lingnan University, Tuen Mun, N.T., Hong Kong. Fax: +852 28917940.
E-mail address: siuol@ln.edu.hk (O.-L. Siu).

0092-6566/$ - see front matter © 2009 Elsevier Inc. All rights reserved.
doi:10.1016/j.jrp.2009.06.008

psychologists offer more positive definition of resiliency. For instance, Masten and Reed (2002) defined resiliency as "a class of phenomena characterized by patterns of positive adaptation in the context of significant adversity or risk" (p. 75).

The concept of resiliency has recently been applied to the workplace through the work of Masten and Reed (2002) and Coutu (2002). Coutu (2002) described resilient individuals at the workplace as likely to be those who have a strong awareness and acceptance of reality and an ability to be flexible, to improvise, and to adapt to change. In organizational behavior research, Luthans (2002) defined resiliency as "the positive psychological capacity to rebound, to 'bounce back' from adversity, uncertainty, conflict, failure or even positive change, progress and increased responsibility" (p. 702).

Jackson and Watkin (2004) used the Resilience Factor Inventory (comprised of seven skills of emotion regulation, impulse control, causal analysis, self-efficacy, realistic optimism, empathy, and reaching out) and provided evidence that boosting such resilience skills would improve the capacity of employees in clinical and corporate settings in Western societies. Yet their work did not apply to coping with workplace stressors.

Luthans et al. (2005) adopted work of Block and Kremen (1996) and Klohlnen (1996) to measure resiliency in their study. Luthans and coworkers have recently developed and validated a 24-item reliable and valid measure of PsyCap, with six items measuring resiliency (Luthans et al., 2006; Luthans, Youssef, & Avolio, 2007). However, longitudinal validity evidence of such measure has not been reported, and again their measure was not targeted on tapping capacity to rebound when facing workplace stress. To bridge this gap, we conducted a longitudinal study to examine the role of a locally developed measure of resiliency to cope with workplace stress in several cities of China.

Previous work on the benefits of resiliency in the workplace stress in China has been cross-sectional (Luthans et al., 2005). Another limitation of earlier research on measure of resiliency is a lack of objective indicators. To date, we found that few if any study that validates resiliency measures with any objective criterion. We therefore proposed the use of a biomarker namely salivary immunoglobulin A (IgA). Salivary IgA is an indicator of stress level and physiological immunity against diseases in the upper respiratory tract. Recently, the assessment of salivary IgA has proven to be a valid and reliable reflection of the respective unbound hormone in blood (Kirschbaum & Hellhammer, 1994), and a biomarker of work stress (an immune marker) among nurses (Ng et al., 1999; Yang et al., 2002). This physiological test was used in this study to serve as a converging measure of work stress.

Summarizing future directions for research on resiliency, Luthans, et al. (2007) noted it is imperative that a longitudinal approach be employed; a triangular strategy or multi-methods be used in data collection to avoid bias; and that the impact on other positive outcomes such as employee wellness be empirically assessed. This study attempts to meet all these prescriptions by using a longitudinal design to develop a measure of resiliency (capacity to cope with or "bounce back" in the wake of high-stress situations or after setbacks) applicable to the health care workplace in Chinese societies. We also aimed to demonstrate the beneficial role of resiliency in the workplace by demonstrating its relationship with positive outcomes (including job satisfaction, work-life balance, quality of life) and negative outcomes (including psychological or physical dysfunction and injuries at work).

Based on previous research findings, we hypothesized that resiliency would be positively related to job satisfaction, work-life balance, and quality of life; and negatively related to physical and psychological symptoms, and injuries at work. We also hypothesized that the level of salivary IgA would be positively related to resiliency.

2. Overview of current study

In this study, we attempted to develop a resiliency measure which is satisfactory both in terms of internal consistency (Cronbach's alpha) and construct validity (Campbell & Fiske, 1959; de Groot, 1969). Establishing a scale's construct validity is neither a one-time task nor a single-approach procedure (Schwab, 1980). The following steps were involved in the research: item generation with focus groups, scale construction, concurrent validity testing using saliva IgA, and prospective validation with a two-wave longitudinal study, showing impact of resiliency on workplace outcomes.

3. Method

3.1. Step 1: item generation with focus groups

Following Kinicki and Latack's (1990) procedure, we worked as a multidisciplinary research team covering the fields of industrial/organizational psychology, social psychology, as well as community and family medicine. Drawing upon our experience with health care workers, we developed an initial pool of items which was made up of 15 items from the Resiliency self-test: Self confidence during stress (http://www.hooah4health.com), as well as some items used in Siu, Chow, Phillips, and Lin (2006) and Jackson et al.'s (2004) studies. Items were also generated in two focus group discussions (FGDs) on protective factors and outcomes of resiliency.

Participants in the FGDs were 15 health care employees who worked in infectious disease wards of several public hospitals in Hong Kong. These individuals did not experience (as many others did) much psychological symptoms during the SARS outbreak in 2003, despite their working in a high-risk environment. They constituted a resilient group of individuals who seem to possess the protective factors to withstand stress.

After several iterations of FGDs and discussion within the research team (in which items and definitions of resiliency were presented and debated), we selected two items from Siu et al. (2006); adapted seven items from the *Resiliency self-test: Self confidence during stress*, and composed one new item. This formed a 10-item resiliency instrument.

Table 1
Demographic characteristics of the samples.

	Participants for Wave 1 (N = 773)	Participants for saliva tests (N = 33)	Participants from Wave 1 who agreed to take part in Wave 2 survey (N = 411)	Participants for Wave 2 survey (N = 287)
Gender				
Female	614 (79.4%)	28 (84.8%)	352 (85.6%)	253 (88.2%)
Male	153 (19.8%)	5 (15.2%)	57 (13.9%)	34 (11.8%)
Age	Range: 18–65 years M = 34.66, SD = 10.20	Range: 29–60 years M = 44.56, SD = 8.52	Range: 19–60 years M = 37.57, SD = 9.82	Range: 20–59 years M = 36.99, SD = 9.78
Tenure	Range: 0–40 years M = 10.85, SD = 9.13	Range: 1–2 years M = 15.39, SD = 9.87	Range: 0–7 years M = 12.29, SD = 9.02	Range: 0–2 years M = 12.94, SD = 9.70
Shift duty				
Yes	438 (56.7%)	14 (42.4%)	204 (49.6%)	157 (54.7%)
No	324 (41.9%)	18 (54.5%)	201 (48.9%)	128 (44.6%)
Front line				
Yes	463 (59.9%)	22 (66.7%)	296 (72.0%)	205 (71.4%)
No	297 (38.4%)	10 (30.3%)	108 (26.3%)	81 (28.2%)