

Research Assessment Exercise 2020

Impact Case Study

University: Lingnan University

Unit of Assessment (UoA): 24 - Psychology

Title of case study: Application of Occupational Health Psychology Theories and Evidence-Based Interventions to Reduce Work Stress and Improve Workplace Safety

(1) Summary of the impact

1. Applied Psychology (AP) conducted three training programmes with 107 teachers from 2014 - 2016 for EDB to enhance their classroom strategies. Participants reported: fewer physical/psychological complaints; less emotional exhaustion; more confidence to handle critical incidents after training. A follow-up survey (N=19) revealed that most: applied theories/practices learnt to teaching; shared with colleagues; increased confidence in handling teaching affairs & classroom management; recommended our training programme to others.

2. AP conducted two Safety Culture Surveys 2014-15 (982 staff) & 2018-19 (1420 staff) for MTR. After 2014-15 Survey, improvements were implemented. The 2018-19 Survey showed many improvements vs. 2014-15, particularly Organizational Learning.

(2) Underpinning research

Since 2014 spearheaded by Siu, faculty in AP applied occupational health psychology theories and practices to conduct empirical research to reduce work stress and improve safety in Hong Kong & greater China. The work predates this assessment period and continues today. It resulted in 14 external grants totalling over HK\$7 m and over 50 publications. (Psychological Approach to Effective Strategies in Handling Students' Challenging Behaviour commissioned by Education Bureau (EDB), 2009-15 total HK\$5.5m from EDB; Work Stress, HK\$1.9 m commissioned by Occupational Safety & Health Council [OSHC] 2000-19; and Safety, HK\$1.8 m commissioned by Mass Transit Railway [MTR] 2004-19).

1. Research / consultancy on Occupational Health and Work Stress: AP was commissioned by the OSHC to design an online stress audit & DIY manual for Stress Management in 2005. Since 2006, the online stress audit was used by eight main industry groups in the OSHC web with 4,761 users as of Aug 2018 [S2]. Thousands of copies of the DIY kit [1] were sent to organizations/companies (OSHC, 2006) impacting +200,000 employees. Evidence of success of the research: in media & international peer reviewed journals [2, 3, 4, 5, 6]. The success of our research is appreciated and supported by Dr. Louisa Wong, principal consultant of the OSHC [S2].

Over 50 research / consultancy used AP's research into the Application of Occupational Health Psychology Theories and Evidence-Based Interventions to Reduce Work Stress. AP held the training tender for seven years. Training enhanced teachers' awareness of types of SEN, & promoted personal skills/resources for stress from challenging classroom behaviours. In the seven 20-day training programmes +200 teachers trained. Pre- and post-training comparative analysis showed participants generally reported lower levels of work stress and burnout; higher levels of self-efficacy and resilience. Questionnaire post-training shows participants applied theories/practices in school impacting thousands of students.

2. Research/Consultancy Projects on Safety: AP (Siu) acted as research consultants to OSHC to study safety attitudes among construction workers. Results show two facets of safety attitudes (checking equipment & management support) relate to safety behaviours. Findings were publicized by a Road Show on buses & two publications [4, 5]. OSHC shared these findings on its website for public use, impacting thousands of employees.

MTR projects: MTR is the major public transport corporation serving 5 million passengers daily in Hong Kong. MTR has +28,000 full-time employees globally, 63% in Hong Kong. Safety is the top priority in MTR. Siu has worked with MTR for 15 years on seven projects. The safety projects for MTR impacted safety of Light Rail passengers, accident prevention for MTR's Infrastructure Maintenance Department (IMD), and fatigue management. Research showed industrial accidents in IMD can be categorized into Human Errors and Human Factors. Based on findings, Siu delivered six 2-hour fatigue risk management trainings for 98 general staff, supervisors/managers and trainers. After training, participants reported higher levels of positive emotions and work engagement for supervisors; higher levels of self-efficacy and recovery for general staff [S9].
(Consultancy Services of Fatigue Risk Management Training (17 Oct 2011- 28 Feb 2012))

(3) References to the research

Publications / Workplace handbooks / advice leaflets

1. Occupational Safety & Health Council (OSHC) (2006). *Work Stress Management DIY Kit* (2nd ed.). Hong Kong: OSHC.
2. Siu, O. L., Lu, C. Q., & Spector, P. E. (2013). Direct and Indirect Relationship between Social Stressors and Job Performance in Greater China: The Role of Strain and Social Support. *European Journal of Work and Organizational Psychology*, 22, 520-531.
3. Siu, O.L., Cooper, C.L., & Phillips, D.R. (2014). Intervention Studies on Enhancing Work Well-Being, Reducing Burnout, and Improving Recovery Experiences among Hong Kong Health Care Workers and Teachers. *International Journal of Stress Management*, 21, 69-84.
4. Siu, O. L., Phillips, D. R., & Leung, T. W. (2004). Safety Climate and Safety Performance among Construction Workers in Hong Kong: The Role of Psychological Strains as Mediators. *Accident Analysis and Prevention*, 36(3), 359-366.
5. Siu, O.L., Phillips, R. D., & Leung, T. W. (2003). Age Differences in Safety Attitudes and Safety Performance in Hong Kong Construction Workers. *Journal of Safety Research*, 34 (2), 199-205.
6. Lu, C.Q., Siu, O.L., Chen, W.Q., & Wang, H.J. (2011). Family Mastery Enhances Work Engagement in Chinese Nurses: a Cross-lagged Analysis. *Journal of Vocational Behavior*, 78, 100-109.

(4) Details of the impact

Case Study 1. Impact of Research on Occupational Stress In 2017 Siu was awarded a grant by OSHC to estimate the social and economic costs of occupational stress in Hong Kong (*A Study of Occupational Stress and its Social and Economic Implications in Hong Kong*) [S1]. The study adopted mixed-methods, including in-depth interviews & surveys of 2,032 employees to evaluate occupational stress and its influence on local employees. The study adopted qualitative and quantitative approaches: Phase I. Pre-survey focus group discussions; Phase II. Cross-sectional survey; Phase III. Post-survey focus group discussions. A total of 2,032 valid questionnaires were returned from total 2,511 employees: making a response rate of 81%. Employees came from 12 industries, of which 87.4% were in eight representative industries. The results demonstrated that occupational stress had a significant negative impact on employees' physical / psychological

health, family and work. Economic costs were estimated by combining costs from absenteeism, presenteeism, and medical expenses. Findings have alerted hundreds of companies and thousands of employees (with over 400 audiences attending our two open seminars) to the importance of stress management and stress intervention [S2].

Case Study 2. Impact on Reducing Work Stress The research described in Section 2 led AP to conduct further research on work stress and workplace safety [S3]. During the review period, AP received three consultancies from EDB (“Effective strategies for managing students’ challenging behaviour” Dec. 2013, Jan & Nov 2015) [e.g., S4 & S5]. The research detailed the provision of training for teachers commissioned by the EDB for three consecutive years (2014-16). The training programme aimed to enhance teachers’ awareness and understanding of types of SEN, and the promotion of personal resources in coping with work stress due to challenging classroom behaviours. Training contents and materials were designed based on the research output generated by Siu and AP faculty (e.g., Siu: work-family balance, occupational stress & coping; Yeung: Communication skills; Cheung: Emotional regulation at work; Lun: classroom management). Evidence of the effectiveness of the intervention studies has been demonstrated by evaluating the change of key indicators (e.g. level of burnout, confidence in handling challenging behaviours) before and after the training sessions [e.g., S4 & S5]. As indicated from the qualitative and quantitative evaluation of the programme, the majority of participants said they learnt a lot from the training, gaining: more self-efficacy & hope, higher resilience & job satisfaction, and a better work-life balance [e.g., S4 & S5]. A total of 107 teachers successfully completed the training programme. Pre- and post-training analysis suggests participants generally, reported lower levels of work stress and burnout, higher levels of self-efficacy and resilience. Participants expressed more confidence to deal with classroom challenging behaviours; 87.9% would recommend our training programme to colleagues [e.g., S4]. S6 shows praise from Principal Inspector of the Special Education section of the EDB and participants. Findings were disseminated by consultancy reports to EDB and internationally peer reviewed journal [3]. In a follow-up survey conducted in April 2019 to participants who took part in 2015-16 training programmes, 19 completed a questionnaire: 74% reported they “sometimes” or “always” applied the theories/practices learnt in the programme to teaching in the past four years, 79% shared with colleagues, 90% agreed they had more confidence in daily teaching affairs and classroom management, 95% would recommend our training to others [S7].

Case Study 3. Impact on improving Workplace Safety Siu was commissioned by the MTR to conduct a Safety Culture Survey in 2014-15 [S8]. She identified key dimensions of safety culture which were less-well performed, and used these findings to make recommendations for improvement. A total of 982 MTR staff from eight units in the Operations Division participated in the survey, with a response rate of 92%. There were several changes in practices to improve safety culture in the Operations Division after Prof. Siu’s recommendations. Recently, Siu was commissioned by the MTR again to conduct the Safety Culture Survey to see improvement in safety culture (particularly Safety Reporting) since 2014-15. Mr. B. Cheung, senior manager of System & Safety Intelligence, found our 2014-15 report provided professional services to their Division in furthering the safety culture in the workplace [S9]. Based on the results, many specific improvements were implemented, e.g.: Safety reporting program has been revamped and promoted, resulting in an increase in reported cases and subsequent follow up; Safety training arrangements have been strengthened; Enhanced contents and formats were introduced for delivering safety information e.g. videos, newsletter etc., to reach frontline staff, and regular briefings to enable them to better understand safety procedures [S9]. Findings from the 2018-19 Survey [S10] show there is improvement since 2014-15 in the safety culture of Organizational Learning; and compared with their 2016 survey (done by MTR), staff are encouraged to raise ideas to prevent incidents from recurring. Most of the time staff feel able to speak up in MTR [S10]. The two projects impact safety of millions of MTR users.

5) Sources to corroborate the impact

S1 A Study of Occupational Stress and its Social and Economic Implications in Hong Kong (commissioned by Occupational Safety & Health Council, Aug 2017-Mar 2019). (Siu is the PI)

S2 An email from Ms Zoe Siu, a senior consultant from OSHC & an email support letter from Dr Louisa Wong, a Principal Consultant of OSHC.

S3 A Study of Job Demands-Resources Model of Workplace Safety and the Role of Chinese Psychological Belief: Qualitative and Quantitative Approaches' by General Research Fund (2013-14), RGC HK\$527,500 (1 Jan 2014- 30 Jun 2016). (Siu is sole PI)

S4 Effective Strategies in Handling Students' Challenging Behaviour: A Psychological Approach (commissioned by EDB) (2 Mar 2015 -31 Aug 2015). Contract letter & Extract from Final Report.

S5 Effective Strategies in Handling Students' Challenging Behaviour: A Psychological Approach (commissioned by EDB) (2 Jan -31 Aug 2016). Contract letter & Extract from Final Report.

S6 An email appreciation letter from Mr. Godwin Lai from EDB, a Principal Inspector in Special Education.

S7 Results of follow-up survey.

S8 Consultancy on Safety Culture for MTR Operations Division, Nov 2013-Dec 2014.

S9 A redacted version of the final report submitted to MTR in ppt version & Supporting letter from Mr. Bryan Cheung, Senior Manager – System & Safety Intelligence of MTR.

S10 Consultancy on Safety Survey for MTR Operations Division, 24 Dec 2018-26 Apr 2019.