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Team-based working and employee well-being: A cross-cultural comparison of United Kingdom and Hong Kong health services

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This study examined the impact of team-based working, team structure, and job design on employee well-being (in term of job satisfaction and work stress) in staff working in healthcare organizations in Hong Kong. Cross-cultural differences in the impact of job design, team structure, and employee well-being outcomes between United Kingdom and Hong Kong were also investigated. A group of 197 staff from two Hong Kong hospitals were compared to a sample of 270 UK staff working in National Health Service organizations in the UK. Results showed that team structure and job design were significantly associated with greater employee satisfaction and lower stress for Hong Kong healthcare staff. Culture was also found to moderate the impact of team structure and job design on employee well-being. The findings suggest that although team structure and job design contribute to employee well-being, they have differential impacts across cultures. This provides insights to policy planning on building team-based organizations in the healthcare sector involving multinational collaboration.

Keywords: Team-based working; Job design; Employee well-being; Culture; Health care organisation.

Team-based working has gained popularity in healthcare settings as a way to improve patient care (Cooke, 1997; McHugh et al., 1996; West et al., 2004). Though team-based working is regarded as an effective means of

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improving organizational performance (Hill, 1982; West, 2002), there are contradictory findings that put the effectiveness of team-based working in question, especially on employee outcomes (Hogg & Terry, 2000; Karau & Williams, 1993). It is proposed that team-based working may only be beneficial to employee well-being under specific conditions—when the team is structured and when the tasks as well as the context are appropriate for collaborative work; however, such evidence is mainly drawn from Western societies. In this study, the impacts of team-based working, team structure, and job design on employee well-being outcomes in terms of job satisfaction and work-related stress in healthcare organizations were examined beyond Western cultures in a Chinese sample. Cross-cultural comparisons between the United Kingdom and Hong Kong were also conducted to investigate cultural differences in these relationships.

It is now increasingly common for healthcare organizations to employ interdisciplinary teams for more comprehensive diagnosis and treatment of patients as in other contemporary organizations (Cott, 1998). In line with other settings (Applebaum & Batt, 1994; Hill, 1982), research within healthcare organizations suggested that team-based working leads to enhanced equity, efficiency, and clinical quality in healthcare settings, for instance improved overall care (Cooke, 1997) and coordination of care (McHugh et al., 1996) for patients, and decreased length of patients' hospital stay (Wieland, Kramer, Waite, & Rubenstein, 1996). In addition to patient outcomes, team-based working is also related to reduced healthcare costs (Eggert, Zimmer, Hall, & Friedman, 1991).

Apart from benefits to organizations, team-based working is also suggested to be related to employee well-being, as Carter and West (1999) found that effectiveness of team-based working was positively related to team members' mental health. Though it was found in the study that substantially smaller proportion of staff working in such teams experienced stress compared to the average for the National Health Service (NHS) in the UK, how team-based working should function to achieve better employee well-being is rarely studied. This study is thus devoted to exploring the conditions of team-based working in healthcare settings which may give rise to better employee outcomes such as greater job satisfaction and lower job stress.

Although advantages of team-based working are evident in various research, other researchers have nonetheless found that working in teams can be ineffective and stressful. Working in groups may undermine individuals' motivation and lead to social loafing (Williams & Karau, 1991). This imposes greater workload on other group members, and thus leads to stress and dissatisfaction (Karau & Williams, 1993). Moreover, conflicts arise within heterogeneous teams might hamper group satisfaction (Hogg & Terry, 2000). These difficulties encountered by teams may also be stressful to individual members.

Therefore team-based working may not always be more beneficial to employee outcomes. It depends on whether the team is well-structured, and that it is very likely to be productive when the task and the context are appropriate for collaborative work. Specifically this study identified two conditions—team structure and job design—that determine employee outcomes (in terms of job satisfaction and work stress) on top of merely working in teams.

TEAM STRUCTURE

According to Saunders and Ahuja (2006), a team's structure frames the processes that are required to perform team tasks. A shared understanding of the team's structure, people's roles within it, and their objectives is suggested to be the foundation for effective team-based working (Undre, Sevdalis, Healey, Darzi, & Vincent, 2006). In fact, not all teams possess clear inputs and processes, and people working in such teams may not benefit from team-based working when these teams fail to function effectively. For instance, less than half (around 40%) of over 90% of NHS staff who say they work in teams work in entities that meet the criteria of a well-structured team (with shared objectives, interdependent working, and regular meetings) (Healthcare Commission, 2005).

This article examines the impact of team structure on employee job satisfaction and work stress, with a well-structured work team being defined as one (a) whose members have clearly defined roles, (b) whose members work together to achieve the objectives, and (c) with regular meetings to discuss effectiveness. These features of team structure are believed to be a key condition of team-based working that contributes to team effectiveness (Salas, Rozell, Mullen, & Driskell, 1999), members' satisfaction and well-being (Saunders & Ahuja, 2006), and lower stress levels (Robinson-Kurpius & Keim, 1994).

JOB DESIGN

In addition to team structure, the task the team is working on should also be planned to maximize effectiveness of the team and outcomes of individual members. Job design involves specifying content, method, and relationships of a job to satisfy technological and organizational requirements as well as personal needs of job holders through a number of methods (Hackman & Oldham, 1976). Well-defined and well-designed jobs are expected to enhance employee motivation and thus result in improved performance (Oldham & Hackman, 1980). Given its broad definition, in this study the quality of job design is defined by (1) whether the job content is clear, (2) whether there will be unambiguous feedback on performance, and (3) whether the

employee is given opportunity to participate in decision making (i.e., whether the employee is granted autonomy).

Job design has been suggested to be an antecedent of outcomes such as motivation, task effectiveness, and satisfaction, according to the Input-Process-Output model of team working (Campion, Medsker, & Higgs, 1993) and the Job Characteristics Model (Hackman & Oldham, 1976), as well as by other scholars (Feldman & Bolino, 2000; Guzzo & Bondy, 1983; Morrison, Cordery, Girardi, & Payne, 2005; Parker, 2003).

Based on these discussions, it is suggested that contradictory previous findings on the relationships between team-based working and employee well-being might be brought about by differences in team structure and team job design. Specifically, on top of team-based working, working in well-structured teams (in which roles are clearly defined and assigned to team members, team members work together to achieve team objectives, and meetings are regularly held to discuss the performance of the team) would be associated with greater employee job satisfaction and lower work stress than employees working in poorly structured teams. Moreover, employees working in teams with better job design, in terms of clear job content, unambiguous feedback about their performance, and freedom to decide on their pace or method of work, would be more satisfied and less stressed.

CULTURAL DIFFERENCES IN TEAM-BASED WORKING, TEAM STRUCTURE, AND JOB DESIGN

Though team-based working is presumably beneficial, its effectiveness nonetheless depends on the context in which team-based working is implemented, including specific organizational cultures as well as the larger national cultures in which they are embedded. Research on teamwork across cultures has identified variance across cultural contexts in team processes, such as social loafing and conflict (Earley, 1994; Oetzel, 1998), team leadership (Pillai & Meindl, 1998), goal setting (Earley & Erez, 1987; Erez & Somech, 1996), teams' beliefs about performance (Gibson, 1999), and employees' receptivity to working in teams (Kirkman & Shapiro, 2001). Kirkman, Gibson, and Shapiro (2001) demonstrated differences in implementation and functioning of work teams across cultures. Gibson and Zellmer-Bruhn (2001) found that employees across cultures hold different definitions of teamwork. These findings suggest that team-based working functions differently across cultures, and hence it is worthwhile examining whether findings in Western societies on team-based working also apply to eastern collectivistic societies where interpersonal relationships are highly valued. Thus, this study also aims to test the relationships between team structure, job design, and employee well-being outcomes in the context of Hong Kong, a collectivistic society with high power difference and uncertainty avoidance

(Hofstede, 2001), with the hypotheses that attributes of team-based working such as team structure and job design would also be applicable in such setting.

Hypothesis 1: Employees in Hong Kong working in well-structured teams have higher levels of job satisfaction and lower levels of work pressure than employees working in poorly structured teams.

Hypothesis 2: Employees in Hong Kong working in teams with better job design have higher levels of job satisfaction and lower levels of work pressure than those who are not.

Moreover, Kirkman et al. (2001) suggested that cultural differences such as individualism–collectivism and power distance are critical to the effectiveness of work teams. As culture determines what is valued in society and people in different cultures have different definitions of teamwork (Gibson & Zellmer-Bruhn, 2001), it is proposed that the relationships between team structure, job design, and employee outcomes are moderated by culture. According to Hofstede (1991), individualism characterizes “societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family” (p. 51), and collectivism characterizes “societies in which people from birth onwards are integrated into strong, cohesive ingroups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty” (p. 51).

As interpersonal relationships are highly valued in collectivistic countries such as China and Hong Kong and people avoid working with others in aggressive ways compared with people in Western countries (Tse, Francis, & Walls, 1994), the effect of team structure on employee job satisfaction and work stress would be greater among Hong Kong healthcare staff than among UK staff, as well-structured teams indicate more cohesive and compact working relationships within teams which might be more welcomed in collectivistic cultures such as Hong Kong that value interdependence.

For job design, it is hypothesized that job clarity and unambiguous feedback would have greater impact on employee job satisfaction and work stress among Hong Kong staff who are more uncertainty avoidant since they help reduce uncertainties. Uncertainty avoidance concerns how cultures adapt to changes and cope with uncertainty (Hofstede, 1991). Özkan and Lajunen (2007) suggested that people in cultures with high uncertainty avoidance tend to look for structure in their daily practices to avoid ambiguities and risk, and thus employees in Hong Kong would prefer job clarity and unambiguous feedback. Autonomy given to work teams would be related to greater employee job satisfaction and lower work stress among UK staff who are more individualistic. Examining the impacts of culture on the roles structure and job design play in team-based working, could help

clarify the contradictory findings in team-based working on employee outcomes, and design better, more practical team-based working models.

Hypothesis 3a: Culture moderates the relationship between team structure and employee job satisfaction and work stress, such that the effect of team structure on employee job satisfaction and work stress is greater in Hong Kong than in the UK.

Hypothesis 3b: Culture moderates the relationship between job design and employee job satisfaction and work stress, such that the effects of job clarity and unambiguous feedback on employee job satisfaction and work stress are greater in Hong Kong than in the UK; whereas the effect of autonomy on employee job satisfaction and work stress is greater in the UK than in Hong Kong.

METHOD

Participants

A total of 197 participants were recruited from two hospitals in Hong Kong. A matching comparison group was selected randomly from the NHS National Staff Survey 2006 (Healthcare Commision & Aston University, 2007). The comparison sample consisted of 300 NHS staff from two hospitals in the UK. The demographic characteristics of the two groups of participants are summarized in Table 1.

Procedure

Participants in the study were recruited from two acute hospitals among eight clusters of hospitals in Hong Kong. A total of 290 staff were selected from the two hospitals (150 from one hospital and 140 from the other) according to the procedure adopted by the NHS National Staff Survey. This involved the generation of random numbers for each staff listed in an Excel file followed by sorting the list from lowest to highest random number. A formal letter of invitation with an introduction about the study and the link to an online version of the questionnaire in Chinese was sent to the selected staff from the two hospitals. Participation in the study was voluntary. The final sample consisted of 197 staff from the two selected hospitals who had completed the questionnaire, comprising a response rate of 67.9%.

This NHS National Staff Survey 2006, conducted between October and December 2006 to collect staff views on, and experiences of, working in their local NHS organization ("trust"), included a sample of up to 850 staff in each of the 324 local healthcare organizations that belong to the NHS in

TABLE 1
Demographic characteristics of participants

Variable	NHS (N=273) ^a	HK (N=197) ^a
Gender		
Male	35 (12.8%)	35 (17.8%)
Female	235 (86.1%)	158 (80.2%)
Age		
21–30	47 (17.2%)	43 (21.8%)
31–40	62 (22.7%)	44 (22.3%)
41–50	87 (31.9%)	54 (27.4%)
51–65	74 (27.1%)	51 (25.9%)
66+	1 (0.4%)	1 (0.5%)
Years of service		
Less than a year	22 (8.1%)	22 (11.2%)
1–2 years	22 (8.1%)	34 (17.3%)
3–5 years	60 (22.0%)	59 (29.9%)
6–10 years	54 (19.8%)	35 (17.8%)
11–15 years	47 (17.2%)	16 (8.1%)
More than 15 years	67 (24.5%)	28 (14.2%)
Occupational group		
Admin & clerical	62 (22.7%)	31 (15.7%)
Allied health professionals	66 (24.2%)	31 (15.7%)
Medical & dental	16 (5.9%)	28 (14.2%)
Nurses	114 (41.8%)	100 (50.8%)
Others	10 (3.7%)	2 (1.0%)
Line manager		
Yes	94 (34.4%)	86 (43.7%)
No	179 (65.6%)	109 (55.3%)
Team structure		
High	161 (59.0%)	128 (65.0%)
Low	110 (40.3%)	69 (35.0%)

^aSample size varied slightly for each demographic variable due to missing data.

England. Responses were received from 128,838 staff, representing a response rate of 54%. As the two participating hospitals in Hong Kong were acute in nature, two acute hospitals with comparable number of staff were randomly selected from the survey data. Staff with matching age, gender, occupational groups (only administration and clerical staff, allied health professionals, medical and dental staff, nurses, and other staff), and ethnicity (only British staff) were randomly selected.

Measures

Working in teams. Participants were asked directly if they were working in a team, with dichotomous answers “Yes/No”.

Structure of corresponding work teams. Staff who were working in teams were also asked to state whether their work teams are structured in terms of clearly defined roles and objectives, cooperation within the team, and regular meetings and reflections on the team's performance. Answers were also given dichotomously ("Yes/No"). Participants with positive answers to all the three questions were considered to be working in well-structured teams; others were considered to be working in poorly structured teams.

Quality of job design (clear job content, feedback, and autonomy). This six-item scale was used to assess the extent to which staff are performing jobs in the context of teams that are relatively well designed and rich in content. Participants were asked to rate their job design according to whether they are clear about their responsibility, whether clear feedback on performance is provided, and whether staff are given the opportunity to participate in decision making on a 5-point Likert scale, from 1 ("strongly disagree") to 5 ("strongly agree"). The three dimensions of job design were treated independently in data analysis, with two items for each dimension, in the same manner as in Job Characteristics Model and Job Diagnostic Survey. Cronbach's α for job content, feedback, and autonomy was .70, .69, and .68 for the UK sample, and .69, .66, and .73 for the Hong Kong sample, respectively.

Staff job satisfaction. The job satisfaction scale contains seven items taken from Warr, Cook, and Wall's (1979) job satisfaction scale and assesses staff satisfaction by asking participants to rate their satisfaction according to recognition for their work, support from supervisors and colleagues, freedom to choose methods of working; amount of responsibility, skill use, and satisfaction, and the extent to which the work of staff is valued by the organization. Participants were asked to rate the statements on a 5-point Likert scale from 1 ("very dissatisfied") to 5 ("very satisfied"). Cronbach's α for the job satisfaction scale was .86 for both the UK and the Hong Kong samples.

Perceived work stress by staff. The scale of work pressure consists of four items and measures stress experienced by participants by asking them if they think they would not be able to cope with their workload, as well as if they think they lack time or resources to perform their job well, on a 5-point Likert scale from 1 ("strongly disagree") to 5 ("strongly agree"). Reliability of the work stress items was satisfactory for both samples (Cronbach's $\alpha=.81$ and .82 for the UK and Hong Kong samples, respectively).

Sociodemographic variables. The survey also asked participants to provide their sociodemographic information, including gender, age, ethnic

group, years of service, health condition (with any long-term illness/disability), and occupational group. All survey questions were developed in English. They were translated into Chinese, and back-translated by a bilingual Chinese graduate student to ensure lexical equivalence.

A multisample confirmatory factor analysis was conducted to determine the extent to which the scales used in the study were invariant across the two samples. A model fitting process was employed (Vandenberg & Lance, 2000), in which the fit of a baseline model with only factor pattern fixed across the samples was examined in the first step. Subsequent constraints were then set on factor loadings, variances, and covariances, and item error variances to be equal and their model fits were examined. Since the χ^2 goodness of fit test is very sensitive to sample size, model fit was determined using fit indices namely Comparative Fit Indices (CFIs), Non-Normed Fit Indices (NNFIs), and Root Mean Square Error of Approximations (RMSEAs), where a drop in CFI $> .02$ would be regarded as a reduction in fit (Cheung & Rensvold, 2001).

The measurement model contained five factors: three job design factors (job content, feedback, and autonomy), job satisfaction, as well as work stress. Job satisfaction and work stress, as well as the three job design factors, were allowed to correlate freely. Control demographic variables were also allowed to correlate with the five factors freely. These included age, gender, year of service, as well as whether or not there was a line manager. The χ^2 of the baseline model was 722.92 ($df=280$, $p < .05$), CFI=.96, NNFI=.93, RMSEA=.071 (90% CI: .065–.076). For the measurement equivalent model, the χ^2 was 812.45 ($df=328$, $p < .05$), CFI=.95, NNFI=.93, RMSEA=.067 (90% CI: .062–.073). With drop in fit indices less than .02, results suggested that measurement equivalence was in general achieved for all scales used across UK and Hong Kong samples. Correlations among factors ranged from $-.47$ to $.56$ ($ps < .05$), whereas factor loadings ranged from $.46$ to $.77$. As correlations between control variables and the outcome variables were not statistically significant (rs ranged from $-.12$ to $.08$, $p > .05$), they were not included in the structural model according to the principle of parsimony.

RESULTS

Table 2 summarizes the descriptive statistics of the variables for different groups including means, standard deviations, as well as intercorrelations among variables. The association between job satisfaction and work stress was negative for both samples ($r=-.49$ and $-.42$ for the Hong Kong and NHS samples, respectively, $ps < .001$). For both samples, team structure and job design components were correlated positively with job satisfaction and negatively with work stress. The positive associations between team

TABLE 2
Descriptive statistics and correlations among major variables

Variables	Hong Kong sample			NHS sample			1	2	3	4	5	6	7	8	9	10
	Mean	SD	Mean	SD	Mean	SD										
1. Gender	0.18	0.39	0.12	0.33	—	.08	.11	.18**	—	-.06	-.02	.01	-.02	.08		
2. Age	3.58	1.15	3.75	1.06	-.08	—	.45**	.08	.02	-.04	.06	.05	.06	-.04		
3. Years of service	3.36	1.53	4.06	1.56	-.13	.48**	—	.11	.03	.03	.00	.14*	.03	.13*		
4. Line manager	0.44	0.50	0.33	0.47	.10	.09	.24**	—	.12	.06	.07	.16**	.06	.12*		
5. Team structure	0.50	0.50	0.83	0.37	-.02	.16*	.01	.04	—	.32**	.24**	.27**	.21**	.13*		
Job design																
6. Clear job content	8.01	1.42	7.20	1.50	-.17*	.10	.12	.10	.08	—	.51**	.36**	.54**	.23**		
7. Feedback	4.75	1.64	6.10	1.84	.00	.15*	.02	.02	.31**	.48**	—	.48**	.69**	.36**		
8. Autonomy	5.50	0.50	6.33	1.95	-.01	.11	.10	.01	.01	.46**	.39**	.43**	—	.63***	.19**	
Employee outcome																
9. Job satisfaction	19.26	1.80	23.80	5.17	.00	.15*	.00	.02	.20**	.48**	.70**	.63**	—	.42**		
10. Work stress	13.49	2.66	12.41	3.59	.01	-.10	.08	.12	-.31**	-.35**	-.16**	-.36**	-.49**	—		

* $p < .05$ (two-tailed), ** $p < .01$ (two-tailed), *** $p < .001$ (two-tailed). Figures above the diagonal are for the NHS sample; those below the diagonal are for the Hong Kong sample.

structure and job design components, as well as among job design components, were moderate.

Effect of culture on team structure and job design on employee well-being

A multisample structural equation model was tested to evaluate the impact of team structure and job design on employee job satisfaction and work stress among participants from Hong Kong as well as the effect of culture on the associations between team structure and job design variables and employee outcomes. First, Hypotheses 1 and 2 were tested by examining the model fit and the individual factor paths in the baseline model. Model fit was evaluated with the following fit indices: model chi square (χ^2), Comparative Fit Index (CFI), Non-Normed Fit Index (NNFI), and Root Mean Square Error of Approximation (RMSEA). In general, CFI and NNFI values of .90 or above, and RMSEA values of .06 or below, are indicative of good empirical fit (Browne & Cudeck, 1993; Byrne, 1994).

Results of structural equation modelling (SEM) on the baseline model indicated an acceptable fit for the data across the two samples. The χ^2 of the model was 787.94 ($df=246$, $p < .05$), CFI=.91, NNFI=.91, RMSEA=.071 (90% CI: .065–.076). This suggested that the model achieved configural invariance across the two groups. Team structure and job design variables (clear job content, feedback, and autonomy) were positively associated with job satisfaction ($\beta=.13$, .19, .43, and .41, respectively, $ps < .05$) and negatively associated with work stress ($\beta=-.18$, -.16, -.31 and -.29 respectively, $ps < .05$) for the UK sample. Only team structure, feedback, and autonomy were positively associated with job satisfaction ($\beta=.20$, .36, and .38 respectively, $ps < .05$), whereas clear job content and feedback were negatively associated with work stress ($\beta=-.21$ and -.32, $ps < .05$) for the Hong Kong sample.

Hypotheses 3a and 3b were tested by testing model fit of nested models with equivalent constraints imposed on certain paths in the baseline model. Since only certain paths were significant for the Hong Kong sample, equivalent constraints were placed on the association between team structure, feedback, autonomy, and job satisfaction, as well as between clear job content and feedback and work stress. The validity of the equality constraints can be tested using the Lagrange Multiplier (LM) test, which indicates the increment in the χ^2 statistics if a constraint is placed.

Results of the LM test were summarized in Table 3. It revealed that constraints on the path from team structure, and feedback to job satisfaction, as well as from clear job content to work stress should be

released. In other words, the strengths of several associations in the model were found to be different across groups. For example, the association between team structure and job satisfaction was stronger among Hong Kong staff ($\beta=.13$ and .20 for the UK and Hong Kong samples, respectively, $p < .05$), whereas association between feedback and job satisfaction was stronger among UK staff ($\beta=.43$, $p < .05$; for the Hong Kong sample, $\beta=.36$, $p < .05$). The negative association between clear job content and work stress was also stronger among Hong Kong staff ($\beta=-.16$ and $-.21$ for UK and Hong Kong samples, respectively, $p < .05$).

The final models for the UK and Hong Kong samples with standardized coefficients are illustrated in Figures 1 and 2. Standardized factor loadings of the structural model are shown in Table 4. The model accounted for 57.1% of the variance in job satisfaction as well as 18.5% of the variance in

TABLE 3
Lagrange multiplier test results to investigate equality constraints

Constrained relationship	$\Delta\chi^2$ (df=1)	<i>p</i>
Team structure → Job satisfaction	5.72	<.05
Feedback → Job satisfaction	8.53	<.05
Autonomy → Job satisfaction	2.84	ns
Clear job content → Work stress	4.43	<.05
Feedback → Work stress	1.12	ns

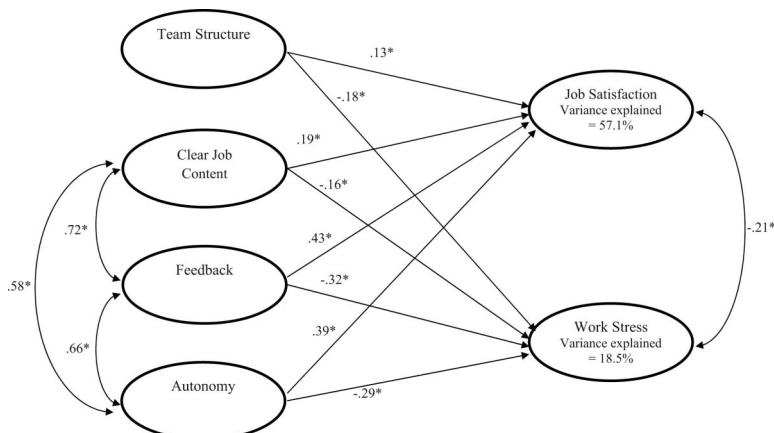


Figure 1. Model for the UK sample with standardized coefficients (* $p < .05$).

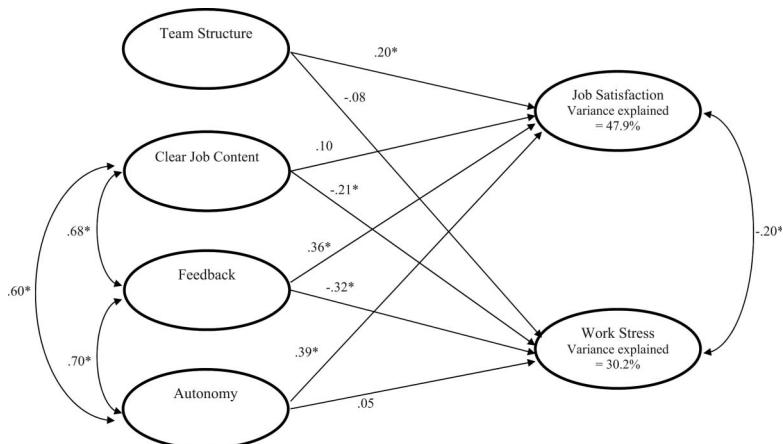


Figure 2. Model for the Hong Kong sample with standardized coefficients (* $p < .05$).

TABLE 4
Standardized factor loadings for models for the UK and the Hong Kong samples

<i>Measurement model estimates</i>	<i>Standardized factor loadings</i>	
	<i>UK sample</i>	<i>Hong Kong sample</i>
Team structure → V1	.54	.38
Clear job content → V2	.67	.65
Clear job content → V3	.68	.63
Feedback → V4	.61	.47
Feedback → V5	.83	.82
Autonomy → V6	.60	.68
Autonomy → V7	.89	.86
Job satisfaction → V8	.82	.72
Job satisfaction → V9	.71	.75
Job satisfaction → V10	.56	.65
Job satisfaction → V11	.48	.45
Job satisfaction → V12	.69	.66
Job satisfaction → V13	.74	.65
Job satisfaction → V14	.81	.75
Work stress → V15	.82	.68
Work stress → V16	.74	.75
Work stress → V17	.65	.81
Work stress → V18	.78	.71

* $p < .05$.

work stress for the UK sample, and accounted for 47.9% of the variance in job satisfaction as well as 30.2% of the variance in work stress for the Hong Kong sample.

DISCUSSION

The present study investigates how team structure and team job design contribute to employee well-being in team-based working beyond the context of Western cultures. Two conditions we proposed in team-based working, namely structure of work teams, in terms of clearly defined roles, interdependent work, and regular meetings, as well as job design within teams, in terms of clear job content, unambiguous feedback, and autonomy within teams, were found to be significant factors to outcomes of employees in Hong Kong.

Culture encloses social norms and values that determine appropriate behaviours under different circumstances through the process of socialization (Smith, Bond, & Kagitcibasi, 2006). Specifically, values (beliefs about how one should behave) (Ravlin & Meglino, 1987) drawn from culture provide a standard for judgement of the reactions of self and others and for perception of environmental stimuli and task structure. Individuals in different cultures learn different behavioural scripts and sets of values with which to evaluate situations and potential courses of action in group settings (Erez & Earley, 1993; Hofstede, 1980), and these sociocultural standards are also applied to the work group context. For instance, Bettenhausen and Murnighan (1991) found that group members initially base their actions on the behavioural scripts that they held as members of different groups in similar situations. Earley (1993) also presented empirical evidence that specific cultural orientations influence the behaviour of group members in a motivational context.

Hence, sociocultural beliefs and norms will affect what patterns of behaviour and what group and individual outcomes are thought to be desirable and, therefore, produce differing assessments of group processes and outcomes. They also help us understand expectations for behaviours in teams.

In this study, team structure was found to be significantly associated with job satisfaction but not work stress in the Hong Kong sample. Hypothesis 1 was only partly supported. Working interdependently on shared goals is consistent with collectivistic cultures, which emphasize interdependence, cooperation, and ingroup harmony (Hofstede, 1980). Thus, working in well-structured teams is related to increased Chinese employees' satisfaction towards their work.

Though working in well-structured teams may be satisfying to Chinese employees, Parris (2003) suggested that the quality of interactions among team members might have greater impact on employees' stress levels than merely working interdependently with other team members to achieve team-level objectives, especially in collectivistic societies such as Chinese societies. Similarly, Lu (1997) highlighted work relationship in particular as a source

of stress to Chinese employees on top of factors related to job, including role ambiguity, in her integrated work stress model for Chinese. This might help explain the finding that team structure variables affect job satisfaction but not work-related stress among Chinese employees.

Team job design variables were also found to be associated with better employee well-being in the Hong Kong sample. The second hypothesis in the study was also partly supported. Among the three job design components, unambiguous feedback appeared to be the most important factor towards employee well-being as it was the only variable that had significant associations with both job satisfaction and work stress. Feedback is important in reducing ambiguity, especially in cultures which is high uncertainty avoidance such as Hong Kong. Moreover as feedback is usually provided by supervisors, the impact of unambiguous feedback might therefore be greater in Hong Kong where power distance is high and supervisors are influential (Lu, 1999).

Among Hong Kong staff clear job content was positively associated with work stress but not job satisfaction. As unclear job content would lead to uncertainty and anxiety among staff, having clear job content and objectives would reduce employee work stress in Hong Kong, which is high in uncertainty avoidance as it reduces ambiguity. However, clarifying job content did not result in satisfaction among Hong Kong employees. One possible explanation is that clear job content might be one of the hygiene factors according to Herzberg's Motivation-Hygiene Theory (Herzberg, Mausner, & Snyderman, 1959). Hong Kong workers with high uncertainty avoidance may consider clear job content as a maintenance factor that is necessary to avoid dissatisfaction but it does not provide job satisfaction. Therefore, having clear job content might not contribute to employee job satisfaction; however, having unclarified job content might be stressful to employees.

It was also found in the Hong Kong sample that autonomy was significantly associated with greater job satisfaction. As autonomy is associated with sense of achievement and mastery, which in turn contribute to employee satisfaction, Chinese workers may as well enjoy a greater sense of mastery in their work team when the team is giving decision making freedom, thus having greater levels of satisfaction towards their job.

Finally culture was found to moderate the impact of job design on employee job satisfaction as well as work stress in this study. Specifically, the impact of team structure on job satisfaction was stronger among Hong Kong staff. Clear job content had greater effects on employee work stress among Hong Kong staff, and unambiguous feedback had greater effects on employee job satisfaction among UK staff. The last hypothesis was also partly supported. These results are consistent with Keinan and Perlberg's (1987) claim that national culture may affect the intensity of the impact

stressors have on individuals. It is also found in Narayanan, Menon, and Spector's (1999) study that Indian female employees considered lack of structure or clarity to be the most stressful, whereas American female employees found work overload and lack of control to be the most stressful. Variations found in the perception of stressors could be an outcome of differences in ecology, economics, religion, and politics across different national cultures. It could also be caused by individual-level processes that are under the influence of values and norms in different cultures. As these hypotheses have not been tested in this study, further research is needed to reveal the effect of culture on the association between job design and employee well-being.

Limitations

Despite the promising findings, there are several limitations in the present study that warrant caution in generalizing its findings, and offer directions for future research. The first limitation concerns measurements used in the study. Since some data were drawn from the NHS National Staff Survey, the choice of measures was greatly constrained by this standard health survey, and items that were used in study might not provide the most ideal assessment of relevant constructs. For instance, reliabilities of some of the job design measures were under the acceptable level of .70. This might attenuate possible associations between job design and well-being measures. In future studies more sophisticated measures should be used such that the roles team structure and job design play on employee well-being can be more accurately revealed.

Second, though constructs of interest in this study concerned functioning of work teams, measures used in this study nonetheless tapped these attributes at individual level. For instance, participants were asked whether they perceived their work teams as having clearly defined roles and autonomy. Given the anonymous nature of the survey, multilevel analyses were not feasible in this study. Existing theories and research on job design are mainly directed at individual level; its impact at other levels is less explored (van Mierlo, Rutte, Kompier, & Doorewaard, 2005). Future studies should shift the level of interest from individuals towards teams since work teams instead of individuals are more commonly considered as primary work units in organizations nowadays (Katzenbach & Smith, 1993). As relationships between constructs may not be the same across different levels, multilevel analyses that incorporate team-level constructs should be conducted.

Third, the data obtained in both studies was cross-sectional. As a result causal relationships between team structure, job design, and employee well-being could not be determined. Longitudinal studies should be conducted to

examine how employee well-being changes upon working in different work teams with different structure and job design.

Moreover, the moderating role of culture on the relationship between team-based working, team structure, job design, and employee outcomes was only preliminarily examined in the present study. Future research should be devoted to unpack the effect of culture on the relationships between team-based working, team structure, job design, and employee outcomes. Future studies should also extend to other Chinese or Asian societies and explore impacts of other input variables such as communication, conflict resolution, and leadership, on top of team structure and job design, on organizational performance and employee well-being, especially in healthcare settings, so as to facilitate evidence-based team-based working interventions.

Despite of the limitations, findings of the present study provided a more comprehensive and concrete knowledge of team-based working on employee outcomes across cultures. In addition to theoretical contributions to cross-cultural studies on team-based working, findings of this study also provided implications on policy planning for managers in healthcare settings. Well-being of healthcare service providers has become a major issue to be addressed in contemporary healthcare organizations apart from organizational performance. The present study offers guidance to policy making as it scientifically showed that structure and job design within teams should be considered when implementing team-based working, given their associations with better employee outcomes.

Additionally, unambiguous feedback should be provided more frequently to Chinese employees as it is found to be the most significant factor to employee well-being. This finding would be practically helpful to managers not only in developing team-based working but also transforming the organization into team-based organization in which the team, rather than the individual, is the primary means of producing products or services. According to van de Vliert, Shi, Sanders, Wang, and Huang (2004), managers in collectivist countries should to give collective and positive feedback in order to foster employees' positive emotions and constructive behavioural intentions, as well as better manager–follower relationships.

Finally, managers should also address the issue of culture when designing team-based working as the associations between job design and team structure as well as employee outcomes are different under different cultures. For instance, managers should provide more instructions or clarification to employees in Chinese cultures as employees prefer having more clarification regarding their tasks. Importantly, in a world where labour is becoming more transferrable (according to the latest NHS national staff survey, 1% of its workforce—over 10,000 employees—are of Chinese origin), healthcare managers within the UK and Europe should be aware of factors that may

cause different effects for Chinese workers within Western organizations. The moderating effect of culture also provides insights to multinational organizations on job design and team building.

CONCLUSION

The relationship between team-based working and organizational as well as employee outcomes is not indispensable. Whether work teams perform effectively depends on their functioning, which could be increased with better team structure as well as better job design within the team to accommodate team-based working. The requirements of the conditions of team structure and job design also differ across cultures as different things are valued; thus, outcomes brought by team structure and job design would not be the same across cultures. These should be taken into account in designing team-based working in healthcare organizations in order to provide better quality care to patients.

REFERENCES

- Applebaum, E., & Batt, R. (1994). *The new American workplace*. Ithaca, NY: ILR Press.
- Bettenhausen, K. L., & Murnighan, J. K. (1991). The development of an intragroup norm and the effects of interpersonal and structural challenges. *Administrative Science Quarterly*, 36, 20–35.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equations models* (pp. 136–162). Newbury Park, CA: Sage.
- Byrne, B. M. (1994). Testing for the factorial validity, replication, and invariance of a measurement instrument: A paradigmatic application based on the Maslach Burnout Inventory. *Multivariate Behavioral Research*, 29, 289–311.
- Campion, M. A., Medsker, G. J., & Higgs, A. C. (1993). Relation between work group characteristics and effectiveness: Implications for designing effective work groups. *Personnel Psychology*, 46, 823–850.
- Carter, A. J., & West, M. A. (1999). Sharing the burden: Team based work in health care settings. In J. Firth-Cozens & R. Payne (Eds.), *Stress in health professionals* (Vol. 3, pp. 191–202). Chichester, UK: Wiley.
- Cheung, G. W., & Rensvold, R. B. (2001). The effects of model parsimony and sampling error on the fit of structural equation models. *Organizational Research Methods*, 4, 236–264.
- Cooke, C. (1997). Reflections on the health care team: My experiences in an interdisciplinary program. *Journal of the American Medical Association*, 277, 1091–1092.
- Cott, C. (1998). Structure and meaning in multidisciplinary team based work. *Sociology of Health and Illness*, 20, 848–873.
- Earley, P. C. (1993). East meets West meets Mideast: Further explorations of collectivistic and individualistic work groups. *Academy of Management Journal*, 36, 319–348.
- Earley, P. C. (1994). Self or group? Cultural effects of training on self-efficacy and performance. *Administrative Science Quarterly*, 39, 89–117.
- Earley, P. C., & Erez, M. (1987). Comparative analysis of goal-setting strategies across cultures. *Journal of Applied Psychology*, 72, 658–665.

- Eggert, G. M., Zimmer, J. G., Hall, W. J., & Friedman, B. (1991). Case management: A randomised controlled study comparing a neighbourhood team and a centralized individual model. *Health Services Research*, 26, 471–507.
- Erez, M., & Earley P. C. (1993). *Culture, self-identity, and work*. New York: Oxford University Press.
- Erez, M., & Somech, A. (1996). Is group productivity loss the rule or the exception? Effects of culture and group-based motivation. *Academy of Management Journal*, 39, 1513–1537.
- Feldman, D. C., & Bolino, M. C. (2000). Skill utilization of overseas interns: Antecedents and consequences. *Journal of International Management*, 6, 29–47.
- Gibson, C. B. (1999). Do they do what they believe they can? Group-efficacy beliefs and group performance across tasks and cultures. *Academy of Management Journal*, 42, 138–152.
- Gibson, C. B., & Zellmer-Bruhn, M. E. (2001). Metaphors and meaning: An intercultural analysis of the concept of teamwork. *Administrative Science Quarterly*, 46, 274–303.
- Guzzo, R. A., & Bondy, J. S. (1983). *A guide to worker productivity experiments in the United States, 1976–1981*. Elmsford, NY: Pergamon.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behaviour and Human Performance*, 16, 250–279.
- Healthcare Commission. (2005). *NHS National Staff Survey 2004: Summary of key findings*. London: Author.
- Healthcare Commission and Aston University (2007). *National Health Service National Staff Survey, 2006* (SN:5736), [computer file]. Colchester, Essex: UK Data Archive [distributor].
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The motivation to work*. New York: Wiley.
- Hill, G. W. (1982). Group versus individual performance: Are $N + 1$ heads better than one? *Psychological Bulletin*, 91, 517–539.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Hofstede, G. (1991). *Cultures and organisations: Software of the mind*. New York: McGraw-Hill.
- Hofstede, G. (2001). *Cultures consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, CA: Sage.
- Hogg, M. A., & Terry, D. J. (2000). Social identity and self-categorization processes in organizational contexts. *Academy of Management Review*, 25, 121–140.
- Karau, S. J., & Williams, K. D. (1993). Social loafing: A meta-analytic review and theoretical integration. *Journal of Personality and Social Psychology*, 65, 681–706.
- Katzenbach, J. R., & Smith, D. K. (1993). *The wisdom of teams: Creating the high-performance organization*. Boston: Harvard Business School Press.
- Keinan, G., & Perlberg, A. (1987). Stress in academe: A cross-cultural comparison between Israeli and American academicians. *Journal of Cross-Cultural Psychology*, 18, 193–207.
- Kirkman, B. L., Gibson, C. B., & Shapiro, D. L. (2001). Exporting teams: Enhancing the implementation and effectiveness of work teams in global affiliates. *Organizational Dynamics*, 30, 12–29.
- Kirkman, B. L., & Shapiro, D. L. (2001). The impact of cultural values on job satisfaction and organizational commitment in self-managing work teams: The mediating role of employee resistance. *Academy of Management Journal*, 44, 557–569.
- Lu, L. (1997). The process of work stress: A dialogue between theory and research. *Chinese Journal of Mental Health*, 10, 39–51.
- Lu, L. (1999). Work motivation, job stress and employees' well-being. *Journal of Applied Management Studies*, 8, 61–72.
- McHugh, M., West, P., Assatty, C., Duprat, L., Niloff, J., Waldo, K., et al. (1996). Establishing an interdisciplinary patient care team: Collaboration at the bedside and beyond. *Journal of Nursing Administration*, 26, 21–27.

- Morrison, D., Cordery, J., Girardi, A., & Payne, R. (2005). Job design, opportunities for skill utilization, and intrinsic job satisfaction. *European Journal of Work and Organizational Psychology*, 14, 59–79.
- Narayanan, L., Menon, S., & Spector, P. (1999). A cross-cultural comparison of job stressors and reactions among employees holding comparable jobs in two countries. *International Journal of Stress Management*, 6, 197–212.
- Oetzel, J. G. (1998). Culturally homogeneous and heterogeneous groups: Explaining communication processes through individualism-collectivism and self-construal. *International Journal of Intercultural Relations*, 22, 135–161.
- Oldham, G. R., & Hackman, J. R. (1980). Work design in organizational context. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behaviour* (Vol. 2, pp. 247–278). Greenwich, CT: JAI Press.
- Özkan, T., & Lajunen, T. (2007). The role of personality, culture, and economy in unintentional fatalities: An aggregated level analysis. *Personality and Individual Differences*, 43, 519–530.
- Parker, S. (2003). Longitudinal effects of lean production on employee outcomes and the mediating role of work characteristics. *Journal of Applied Psychology*, 88, 620–634.
- Parris, M. A. (2003). Work teams: Perceptions of a ready-made support system? *Employee Responsibilities and Rights Journal*, 15, 71–83.
- Pillai, R., & Meindl, J. R. (1998). Context and charisma: A “meso” level examination of the relationship of organic structure, collectivism, and crisis to charismatic leadership. *Journal of Management*, 24, 643–671.
- Ravlin, E. C., & Meglino, B. M. (1987). Effects of values on perception and decision making: A study of alternative work values measures. *Journal of Applied Psychology*, 72, 666–673.
- Robinson-Kurpius, S. E., & Keim, J. (1994). Team building for nurses experiencing burnout and poor morale. *Journal for Specialists in Group Work*, 19, 155–161.
- Salas, E., Rozell, D., Mullen, B., & Driskell, J. E. (1999). The effect of team building on performance: An integration. *Small Group Research*, 30, 309–329.
- Saunders, C. S., & Ahuja, M. K. (2006). Are all distributed teams the same? Differentiating between temporary and ongoing distributed teams. *Small Group Research*, 37, 662–700.
- Smith, P. B., Bond, M. H., & Kagitcibasi, C. (2006). *Understanding social psychology across cultures: Living and working in a changing world*. London: Sage.
- Tse, D. K., Francis, J., & Walls, J. (1994). Cultural differences in conducting intra- and intercultural negotiations: A Sino-Canadian comparison. *Journal of International Business Studies*, 25, 537–555.
- Undre, S., Sevdalis, N., Healey, A. N., Darzi, A., & Vincent, C. A. (2006). Team based work in the operating theatre: Cohesion or confusion? *Journal of Evaluation in Clinical Practice*, 12, 182–189.
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3, 4–70.
- Van de Vliert, E., Shi, K., Sanders, K., Wang, Y., & Huang, X. (2004). Chinese and Dutch interpretations of supervisory feedback. *Journal of Cross-Cultural Psychology*, 35, 417–435.
- Van Mierlo, H., Rutte, C. G., Komپier, M. A. J., & Doorewaard, J. A. C. M. (2005). Self-managing teamwork and psychological well-being: Review of a multilevel research domain. *Group and Organization Management*, 30, 211–235.
- Warr, P., Cook, J., & Wall, T. (1979). Scales for measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, 52, 129–148.
- West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review*, 51, 355–424.

- West, M. A., Brodbeck, F. C., & Richter, A. W. (2004). Does the "romance of teams" exist? The effectiveness of teams in experimental and field settings. *Journal of Occupational and Organizational Psychology*, 77, 467–473.
- Wieland, D., Kramer, B. J., Waite, M. S., & Rubenstein, L. Z. (1996). The interdisciplinary team in geriatric care. *The American Behavioural Scientist*, 39, 655–664.
- Williams, K. D., & Karau, S. J. (1991). Social loafing and social compensation: The effects of expectations of co-worker performance. *Journal of Personality and Social Psychology*, 61, 570–581.

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