

# Career stress and female managers' health in Taiwan's hospitals: A multilevel model approach

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**Purpose:** This study investigates how perception-induced stress (barrier) and social capital (facilitator) affect the health of female managers.

**Methods and Measurement:** On the basis of the responses of 229 valid questionnaires of middle- and high-level female managers in large-scale hospitals, using a multilevel data analysis approach, this study investigates how perception-induced stress and social capital influence self-reported poor health of female managers.

**Results:** Analysis results indicate that all 3 perception-induced stresses (i.e., promotion-related procedural justice, promotion rate, and work–family conflict) and 2 social capital variables (i.e., mentor-assisted promotion and higher ranking mentor in other departments) are significantly associated with the health of female managers. Factors involving the career success of women also affect their health.

**Implications and Conclusions:** Health care organizations expecting to benefit from the long-term contribution of female elites must promote organizational equity and more heavily emphasize flexible work schedules, family-friendly policies, and perception management practices. In addition, adequately designed mentorship practices can greatly benefit female managers.

**Key words:** female manager, health care industry, multilevel models, stress

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Women play an increasingly crucial role in the modern workforce and have contributed to social and economic development worldwide. Particularly in the health care sector, where clients require care, understanding, and tenderness, female health professionals are an essential part of the workforce. Given the significant influence of the health care sector, the mental and emotional health of health care workers is a public concern. Questions like “What promotes or impedes the health of female managers” have not been adequately addressed. This study examines this issue from the perspective of female career stress.

From the post-Second World War period to the 20<sup>th</sup> century, the career progression of women in Western countries has improved rapidly (McDonald, 2004). Approximately 46% of managerial positions in the United States are held by women, whereas in the UK, women hold 33% of managerial positions (Equal Opportunities Commission, 2003). Apparently, the gender gap in managerial ranks is diminishing. However, in Asian countries, the proportion of female managers has not been increasing at the same rate as in Western societies. Only 10%, 5%, and 16% of managerial positions in Japan, Korea, and Taiwan, respectively, are occupied by women (Council of Labor Affairs, Executive Yuan Web site: [http://www.cla.gov.tw/cgi-bin/SM\\_theme?page=4250dc44](http://www.cla.gov.tw/cgi-bin/SM_theme?page=4250dc44)).

Nevertheless, female managers face substantially greater stress than their male counterparts do (Fielden & Cooper, 2001). In addition to the glass ceiling effect, many female managers also experience marital difficulties, depression, fatigue, and the social stigma of family neglect (Burke & Vinnicombe, 2005). The constant pressure experienced by a female manager to demonstrate to herself, her family, and others that she is capable of managing both career and family also puts additional pressure on the working mother. Over many years, accumulated stress impairs the health of many career women. These stressors often cause physiological and psychological symptoms that are costly not only to individuals and organizations but also to society as a whole. Although most career-related stress affects women and men in the same manner certain stressors are specific to women. By not restricting themselves to the traditional “female” jobs, women face unique pressures, conflicts, prejudice, and isolation (Chusmir & Franks, 2001).

In the health care field, in addition to nurses, there is a growing number of women who are physicians, managers, and other medical professionals. With more involvement in the upper echelons of business, career development or promotion may become a significant source of stress involving not only very strict requirements of expertise constantly rated by peers and patients but also a number of social factors. After interviewing high-level managers in medical schools concerning career perceptions, Olsson and Walker (2004) found that having mentors, social support, and recognition were the three major factors affecting promotion to high-level positions. However, these valuable resources or social capital may not be readily available to female professionals. Career obstacles for female medical professionals in university hospitals include the lack of mentors, isolation from colleagues, insufficient social and emotional support, and gender discrimination (End, Mittlboeck, & Piza-Katzer, 2004). A very few female surgeons were able to serve in leadership positions (Yedidia & Bickel, 2001). Career barriers for women seeking promotion in the medical field are particularly daunting.

Given the current global personnel shortage in the medical field, qualified doctors and nurses trained in Asia have become an important source of well-trained professionals (Boulet, Norcini, Whelan, Hallock, & Seeling, 2006). The egalitarian society of Taiwan has provided women with equal education opportunities. Statistics for 2006 show a 0.97:1 ratio of female to male students with a college education or above (Taiwan Ministry of Education Web site: [http://www.edu.tw/EDU\\_WEB/EDU\\_MGT/STATISTICS/EDU7220001/gender/106-1.xls](http://www.edu.tw/EDU_WEB/EDU_MGT/STATISTICS/EDU7220001/gender/106-1.xls)). However, female doctors (13%; Taiwan Medical Association Web site: <http://www.tma.tw/stats/stats6.asp>) and senior managers (5%) are underrepresented in Taiwan when compared with the figures for the United States (Chen, 2004). Without exception, the glass ceiling effect and a significant segregation by gender are evident in the health care profession in Taiwan. Therefore, in the context of the equal education opportunity yet constrained career development of women in the health care industry, investigating the health condition of female professionals adds value to this field of study.

Specifically, the purpose of this research was to investigate the effects of perception-induced stress and social capital on the health of female managers while controlling for cross-gender sociodemographic variables such as age and education. The rationale for conducting this study is the following: First, relatively few studies have examined the relationship between career stress and the health of female managers in the health care field; second, because a hospital is primarily concerned with health matters, managers and professionals working in hospitals must themselves be healthy to effectively manage patients; third, the physical and psychological health of women is increasingly becoming important as their contribution to social and economic development worldwide increases; and fourth, due to the aging baby boomer generation, the demand for health care industry has continuously increased, which in turn imposes more burdens on health care providers.

The following discussion briefly reviews the relevant literature and methods of this study then presents the research results, implications, and conclusions.

## ***Literature Review***

Career stress may be a suppressor, and social support may be a facilitator of the well-being of working women. One study has shown that women over 40 years of age who were highly committed to their jobs had higher blood pressure than those who were less career committed did (Haynes & Feinleib, 1980). Career stress has been scientifically proven to affect physical and psychological health. Physiological diseases connected with job stress in both genders include heart failure, high blood pressure, high cholesterol, fatigue, high blood sugar, skin problems, injuries, and even death (Theorell, 2000). In addition, the medical literature regarding job stress indicates that workload, lack of job autonomy, and social support are predictors of coronary heart disease (Theorell, 2000).

Women and men share many stressful job situations, although the degree of stress and the perceived importance of particular situations may vary between women and men. For example, compared with men, women tend to react more emotionally to ongoing strains and reportedly have higher levels of mental distress, depression and anxiety, panic, and obsessions and compulsions, which can adversely affect job performance. Women under stress tend to become anxious and depressed (Annandale, in press). This study focuses particularly on the influence of perception-induced stress and social capital on the health of female managers in the health-care industry.

### **Perception-induced career stress: Procedural justice, fast-track promotion, and work–family conflict.**

Satisfaction or stress is a function of personal perception. Subjectively rated organizational justice, promotion rate, and work–family balance are manifestations of personal perceptions, which can cause either stress or satisfaction.

Prior research indicates that perceived justice in organizations is associated with emotions, occupational strain, and behaviors in social interactions (Christie & Shultz, 1998). Perceived justice also predicts both morbidity and mortality (Miller, Smith, Turner, Guijarro, & Hallet, 1996). Moorman (1991) reported a cause-and-effect relationship between equal treatment of workers in an organization and their job performance and psychological well-being. All organizations are faced with properly dispensing distributive and procedural justice. Distributive justice is concerned with outcome, whereas procedural justice, with due treatment of employees. The focus of this inquiry is procedural justice because studies have shown that when a promotion decision appears to have dispensed with procedural justice, staff members show more job satisfaction (Lemons & Jones, 2001). Specifically, Elovainio, Kivimäki, and Ahtera (2002) reported that hospital employees who perceived low organizational justice were at higher risk of poor health. Therefore,

*H1:* Perceived procedural justice is associated with good health in female managers.

Reskin and McBrier (2000) reported gender disparities in promotion despite the implementation of equal opportunity policies. Davies and Rosser (1986) found that men in the nursing profession advanced faster than women did. Hutt (1985) reported that although male nurses made up only 10% of the total nursing workforce in place, they occupied 40% of the senior nursing positions. Several other studies have also reported differential promotion rates between men and women and fewer promotion opportunities for women (e.g., Meyerson & Fletcher, 2000). Apparently, women seeking career advancement in the health care industry must not only equal but also outperform their male counterparts, which can adversely affect their physical and even mental health.

However, when women are promoted to managerial positions, they may often play a token role and may find themselves under constant scrutiny by top management, peers, and even patients. Furthermore, lower ranking female employees may regard them as role models. To meet these expectations, many female managers impose excessively high standards on themselves,

work extra hours to prove their worth, and, in doing so, raise their stress level. Eventually, these behaviors may cause adverse health effects. Therefore, it is predicted that

*H2: Perceived fast-track promotion is positively related to poor health in female managers.*

Furthermore, the literature indicates that female managers often experience marital difficulties and the social stigma of family neglect. For example, women with children often face the responsibility of finding acceptable day care services, caring for the children when they are sick, and taking time off from work for family matters. Even if a husband supports the career of his wife and helps with the children, the major responsibility may still fall on the woman. Work–family conflict is common in female managers.

Work–family conflict occurs when one parent is unable to simultaneously perform both family and work roles (Greenhaus, Collins, & Shaw, 2003). Perceived work–family conflict has been linked to job-related stress, psychological stress, and self-reported poor health (Kirchmeyer & Cohen, 2005). Frone (2000) also found that work–family conflicts were positively related to clinically significant mood, anxiety, and substance dependence disorders. The resulting stress can manifest as emotional and physical health problems. Most common are marital difficulties, depression, and fatigue. However, some of this stress may be self-imposed when women attempt to continue meeting all household commitments because they feel guilty about not being full-time mothers. The need to show herself, her family, and others that she is capable of handling both career and family responsibilities may put additional pressure on the working mother and all but eliminate her free time, thus making it even more difficult for her to cope with stress. Therefore, this study hypothesizes that

*H3: Perceived work–family conflict is positively related to poor health in female managers.*

#### **Function and composition of social capital.**

Social capital theory suggests that social support extends the resources of individuals and eases tension that may mitigate stress (Lin, 2001). Social capital at work is often in the form of experienced mentors who provide support in career planning and personal development to junior colleagues. Advantages that a protégé gains from a mentoring relationship include job success, faster promotion, higher salary, and increased self-esteem (Chao, 1992). Women who have no mentor or who have a mentor with insufficient supportive resources experience higher levels of stress than their counterparts do. Presumably, having a greater number of mentors can help female managers establish more social contacts in organizations. Female executives also report feeling isolated in work environments where men have already defined the informal network, culture, and management style. Much business takes place, deals are made, and support is given in the so-called “good-old-boy” network (Chusmir, & Franks, 2001), and the exclusion of managerial women from such networks increases the level of job stress. Consequently, female mentors are especially important for women who enter male-dominated job fields because they can help women in overcoming gender-related obstacles in promotion (Ragins & Scandura, 1994).

Conversely, Burt (1992) found that although supportive mentorship provides empathy and support, it does not enhance the acceptance of women and/or minorities in their managerial careers. This finding shows that women need strategic partners to assess higher-level managers. According to the structural-hole theory, women with mentors from different social groups are assumedly more likely to gain both access to information and control over the interpretation of information than those with mentors in the same department where the protégé shares similar information (Burt, 1992). In summary, successful mentoring provides social capital, which may reduce job-related stress, and may minimize the effects of a poor health condition. Therefore,

*H4: Female managers with mentors providing career assistance are less likely to report poor*

health.

*H5:* The number of mentors during a career, as indicative of the amount of social capital, is negatively related to poor health in female managers.

*H6:* Female managers with a significant mentor of the same gender are less likely to report poor health.

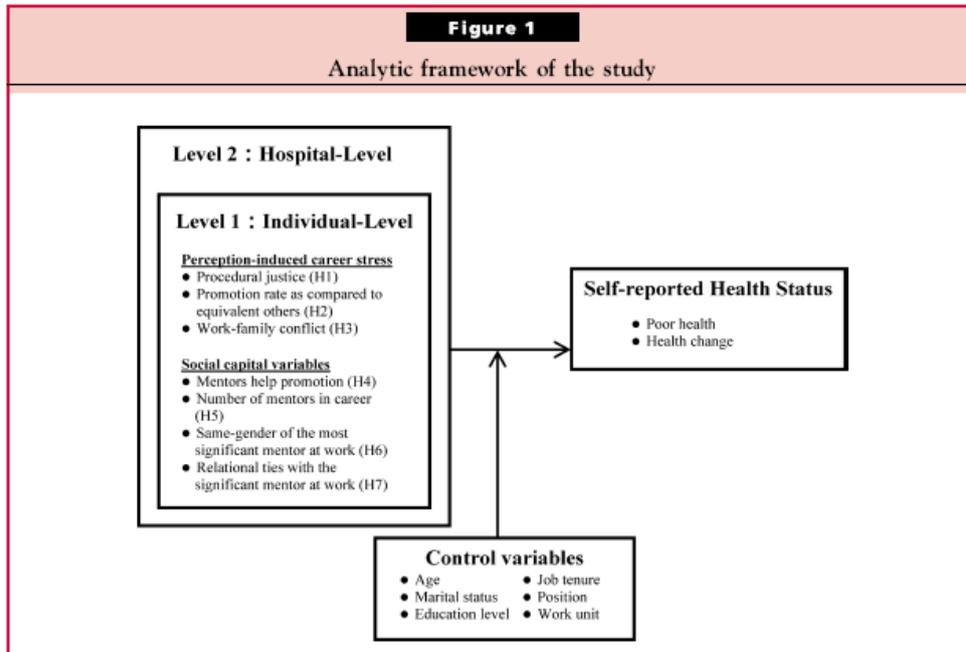
*H7:* Female managers with a significant mentor in a different department and of a higher rank are less likely to report poor health.

### ***Control Variables***

In this study, individual sociodemographic characteristics and hospital-level variables were treated as control variables that may affect the career and health of female managers. Individual sociodemographic characteristics include education, marital status, job tenure, and position. Education is known to be significantly associated with career success in both men and women. Fahey and Myrtle (2001) found that career satisfaction did not significantly differ between married and unmarried executives of either gender in the U.S. health care industry. Job tenure is positively associated with job satisfaction; however, a meta-analysis by Lee, Carswell, and Allen (2000) revealed no association between job tenure and career commitment. In this study, work unit (medical or administrative), position (high- or middle-level management), hospital ownership, and hospital type were also included. For reference, Figure 1 shows the analytic framework of the study.

### ***The Health Care System in Taiwan***

In 1995, Taiwan established a universal National Health Insurance program providing coverage for more than 95% of the population and almost all hospitals. This single-payer system reimburses medical facilities accredited by the Taiwan Joint Commission of Hospital Accreditation (TJCHA), which are classified as medical centers (minimum 500 beds), regional hospitals (minimum 250 beds), and district hospitals (minimum 20 beds). In accordance with the regulations of the Department of Health (DOH) of Taiwan, hospital ownership is classified into three types based on ownership: public, nonprofit private, and private. Public hospitals included those directly managed and supervised by the DOH, national university affiliated hospitals, and veteran hospitals. Nonprofit private hospitals are charitable, educational, or religious organizations. These hospitals may be fully or partially exempt from property taxes and donations. Private hospitals are owned by individual physicians and exercise profit-maximizing management. In 2003, the TJCHA reported 485 hospitals in Taiwan. Seventy (14.4%) were public, 66 (13.6%) were nonprofit private hospitals, and 349 (72%) were private for-profit hospitals (Lin, Chen, Liu, & Lee, 2006).



## Methods and Measurement

### *Study Sample*

A formal invitation letter was mailed to all 88 large-scale hospitals in Taiwan to solicit their support. Twenty-two hospitals (including medical centers and regional hospitals) agreed to participate. A self-administered questionnaire was distributed to 642 high- and middle-level female managers in medical and administrative departments in the 22 hospitals. The hospitals assisted in distributing questionnaires to eligible participants, who were requested to mail the questionnaire directly to the researchers to assure confidentiality. Data analyses were based on the responses of 229 valid questionnaires (a response rate of approximately 36%). Five hospitals were excluded from multilevel modeling because the number of returned questionnaires was less than 3. The number of questionnaires returned from 17 different hospitals ranged from 4 to 30.

### *Measurements*

This study examined the effects of perception-induced career stress and social capital on the self-reported health of female managers in the health care industry. Perception-induced stress includes psychological strains induced by perceived procedural justice, perceived fast-track promotion, and perceived work–family conflict. The procedural justice scale and the work–family conflict scale were given to two different teams, each composed of two faculty members who independently helped translate the questionnaire to ensure that it was clearly and appropriately worded.

### **Dependent variable: Self-reported health.**

Two items were used to measure self-reported health status in this study: current health status and change in health from the previous year (Ware, Kosinski, & Dewey, 2000). Current health status was measured by asking women to rate their current physical condition on a 5-point scale, where 1 = very good, 2 = good, 3 = fair, 4 = poor, and 5 = very poor. Health change was measured by asking the women whether their health had improved, remained unchanged, or had

worsened in the past year.

The self-reported health measure can be considered a reliable measure because it reflects perceived overall health and is widely used in academia. Several authors have also reported strong associations between self-reported health and objective measures of morbidity (e.g., Liukkonen, Virtanen, Kivimaki, Pentti, & Vahtera, 2004).

### **Independent variables.**

*Procedural justice.* The procedural justice measures developed by Moorman (1991) were slightly modified to assess the extent of formal procedures for ensuring fairness and the nature of manager–employee interaction in implementing the procedures. In the Instruction section, the context was designated a “promotion decision” to guide the response.

*Perceived fast-track promotion.* One variable measured whether a woman perceived that her promotion rate is faster, about the same, or slower than that of someone with similar backgrounds and experiences at work.

*Work–family conflict.* Kopelman, Greenhaus, and Connolly (1983) developed an eight-item measure of work–family conflict to assess the extent of conflict between work and family roles. The measure employs a 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree and has demonstrated good reliability (Grandey & Cropanzano, 1999).

*Social capital.* Four variables were employed to assess the function and composition of social capital. The first variable measured whether the significant mentor of a participant actually provided opportunities and information that were helpful in career development. Possible responses were “yes,” “no,” or “did not require it.” The remaining three items examined the composition of social capital. The first item asked participants whether they had one, two, three, or four or more mentors in their career. The second item asked for the gender of their most significant mentor at work. The third item asked participants to classify their relationship with their most significant mentor as coworker in the same department, coworker in a different department, supervisor in the same department, or supervisor in a different department.

### ***Statistical Analysis: Multilevel Ordinal Regression Models***

To clarify the nested relationships of female managers within hospitals, the data were hierarchically arranged. Multilevel ordinal regression analysis was applied to elucidate any hierarchical structure in the levels of data collected. The goal of a multilevel model is to clarify the covariance using different levels of variables. Multilevel models enabled the researchers in this study to evaluate how much of the variance in self-reported health was attributable to individual circumstances and how much to the conditions of a given hospital.

The simple two-level structure can be seen in the following system of equations. For example, Level 1 is designed to predict self-rated poor health in female managers. In multilevel models,  $\beta_{0j}$  is the intercept, and there are different intercepts for different hospitals;  $\beta_{1j}$  is the slope (e.g., the effect of perceived work–family conflict on self-rated health), and different hospitals exhibit different slopes. Thus, a critical concept in multilevel modeling is that intercepts and slopes can be treated as outcomes (random variables) of Level 2 predictors. Therefore, Level 1 parameters are indirectly, rather than directly, estimated through the Level 2 predictors. The HLM 6 software was used for analysis (Raudenbush & Bryk, 2002).

First, only individual (Level 1) variables were entered to determine the significance level of intercepts. Significant intercepts indicated that the variance in hospital-level variables (Level 2) was related to the

dependent variable (i.e., self-reported poor health), and this is the Intercepts-as-Outcomes model. Second, the Intercepts-as-Outcomes model differs from the Slope-as-Outcomes model in that the Slope-as-Outcomes model assumes not only that the variance in hospital-level variables is related to the dependent variable, but also that the effect of an individual-level independent variable on the dependent variable is also modified by hospital-level variables (Level 2).

## Results

### *Sample Profile*

Of the 642 questionnaires distributed to medical and administrative departments, 229 valid questionnaires were collected in May and June 2005, resulting in a response rate of 35.7%. As Table 1 shows, the average age of the respondents was 38.6 years, with most respondents (42.9%) belonging to the 31- to 40-years age group. Regarding educational background, 31.5% of the participants had a professional school education, 45% had a college education, and 23.5% had a graduate school education. Approximately half (50.2%) of the participants worked at nonprofit private hospitals, and more than a quarter (27.9%) worked at public hospitals. A majority (83%) of the participants worked at regional community hospitals, whereas the remainder (17%) worked at medical centers. Among the participants, 53.3% worked in medical units, and 46.7% worked in administrative departments. Approximately two thirds of the participants were middle-level managers, and the other one third served in leadership positions such as department chairs or vice presidents. Regarding work experience, a majority (31.6%) of the participants had 6–10 years of work experience, approximately one fourth (24.9%) had 1–5 years, and the remainder had more than 11 years of experience.

High internal reliability was observed in the procedural justice scale ( $\alpha = .90$ ). The work–family conflict scale reached an  $\alpha$  of .95 after one item with a relatively small factor loading was deleted. Table 2 reports the multilevel ordinal regression models results. First, the intercepts were examined for significance. For both models of current health status and health change, the intercepts reached statistical significance, indicating significant variance across hospitals regarding the average health status of female managers. Therefore, two variables for hospital-level characteristics (Level 2) were added. The first was for hospital type, and the

The analytical result supported the Intercepts-as-Outcomes model in the current analysis. Female managers working in public hospitals were more likely than those in private hospitals to report poor health. The health change model did not produce similar results. The Slopes-as-Outcomes models were not supported in either model. The above findings reveal that, when controlling for confounding covariates, perceived procedural justice (H1) was associated with a health condition worse than that of the previous year but did not affect current health. Perceived fast-track promotion was not associated with either current health condition or health change. Instead, a perceived slow promotion rate affects current health condition but not health change (H2). Female managers who perceived a slower promotion rate were less likely to report poor health than those who perceived a promotion rate comparable with that of their peers. Understandably, second, for hospital ownership, slow trackers may experience less stress in their career. Perceived work–family conflict (H3) was strongly associated with both current poor health and poorer health from the previous year. The social capital function was significantly associated with the health of female managers. Having mentors who actually provided career assistance significantly affected the current health of female managers (H4). In addition, female managers who have a most significant mentor who worked in a different department were unlikely to feel in worse health than in the previous year (H7). This result confirms the structural-hole concept of social capital, which suggests that managers with higher ranked mentors in other departments have advantages in their career and, consequently, better health than in the previous year. However, two variables in the composition of social capital lacked significant association with the health of female managers. The number of mentors (H5) and having a same-gender mentor (H6) showed no significant association with the current health of female

managers. In Table 2, the p values are listed for hypotheses that were accepted or partially accepted.

<b>Table 1</b>		
<b>Description of the study sample (N = 229)</b>		
<b>Variable</b>	<b>n</b>	<b>%</b>
<b>Age group (N = 219) (years)</b>		
20-30	33	15.1
31-40	94	42.9
41-50	75	34.2
>51	17	7.8
<b>Marital status (N = 227)</b>		
Unmarried	53	23.2
Married	174	76.3
<b>Level of education (N = 229)</b>		
Professional schools	72	31.5
College	103	45.0
Master/doctoral degree	54	23.6
<b>Hospital ownership (N = 229)</b>		
Public hospitals	64	27.9
Private hospitals	24	10.5
Nonprofit private hospitals	115	50.2
University-affiliated hospitals	26	11.4
<b>Type of hospital (N = 229)</b>		
Medical centers	39	17.0
Regional hospitals	190	83.0
<b>Work unit (N = 229)</b>		
Administrative	107	46.7
Medical	122	53.3
<b>Position (N = 228)</b>		
Middle-level managers	150	65.8
High-level managers (department chair/vice president)	78	34.2
<b>Seniority (N = 225) (years)</b>		
1-5	56	24.9
6-10	71	31.6
11-15	33	14.7
16-20	37	16.4
>20	28	12.4

<b>Table 2</b>						
<b>Multilevel ordinal regression model for self-reported poor health</b>						
	Self-reported poor health			Health change		
	Coefficient	SE	p	Coefficient	SE	p
<i>Individual variables (Level 1)</i>						
Perception-induced stress						
Perceived procedural justice	-0.03	0.18	.86	-0.42	0.19	<b>.02 (H1)</b>
Perceived promotion rate as compared with equivalent others (reference group: equal rate)						
Fast track	-0.11	0.35	.76	-0.26	0.37	.16
Slow track	-1.21	0.52	<b>.02 (H2)</b>	-0.52	0.52	.61
Perceived work-family conflict	0.19	0.03	<b>&lt;.0001 (H5)</b>	0.22	0.03	<b>.0001 (H3)</b>
Social capital variables						
Mentors help promotion (yes vs. no)	-0.75	0.37	<b>.04 (H4)</b>	0.37	0.37	.33
Number of mentors in career (reference group: none and one mentor)						
Two mentors	-0.57	0.44	.20	0.22	0.45	.63
Three mentors	-0.59	0.69	.39	0.56	0.72	.44
More than four mentors	-0.81	0.46	.08	0.49	0.47	.31
Relational ties with the significant mentor in hospital (reference group: coworker)						
Division supervisor	0.12	0.40	.76	-0.13	0.41	.75
Supervisor in different division	-0.26	0.58	.65	-1.21	0.38	<b>.04 (H7)</b>
Same gender of the most significant mentor (yes vs. no)	-0.1	0.42	.82	-0.15	0.43	.72
Control variables						
Age	0.01	0.03	.78	0.001	0.03	.96
Marital status (married vs. unmarried)	-0.72	0.40	.07	-0.21	0.41	.62
Education level (reference group: professional schools)						
College degree	-0.15	0.39	.71	0.001	0.49	.99
Master and doctoral degree	-0.34	0.48	.48	0.28	0.38	.58
Job tenure (reference group: 1-5 years)						
6-10 years	-0.52	0.44	.24	0.19	0.45	.66
11-15 years	0.19	0.56	.73	0.40	0.58	.49
16-20 years	-0.9	0.60	.14	0.25	0.61	.68
>20 years	-0.15	0.64	.82	0.19	0.68	.77
Division chairwoman (yes vs. no)	-0.46	0.44	.30	0.61	0.45	.18
Work department (medicine vs. administration)	0.09	0.33	.79	0.08	0.33	.81
<i>Hospital variables (Level 2)</i>						
Hospital ownership (reference group: private hospitals)						
Public hospitals	1.58	0.74	<b>.04</b>	0.23	0.63	.72
Nonprofit private hospitals	0.28	0.67	.69	0.39	0.55	.48
University-affiliated hospitals	-0.15	1.22	.91	-0.43	1.08	.69
Hospital types (reference group: medical centers)						
Regional hospitals	-0.84	0.84	.33	-0.51	0.76	.51
INTRCPT, G00	-8.93	0.0001	<b>.001</b>	-6.19	0.002	<b>&gt;.05</b>

Note. All thresholds are statistically significant at  $p < .0001$ .  $p$  Values with a hypothesis number means the hypothesis is accepted.

## Discussion

Studies of the U.S. health care profession suggest that female doctors face obstacles to promotion in academic fields (End et al., 2004; Olsson & Walker, 2004). Women working in the health care sector feel most challenged by child-rearing responsibilities, lack of networking skills, and gender discrimination (End et al., 2004). The findings of this study confirm the notion that subjective perception-induced career stress is more relevant to the health of female managers than are objective social capital variables, with the exception that mentor-provided career assistance and mentor relationships are significantly related to the health of female managers. Perception-induced career stress, including procedural justice, fast-track promotion, and work-family conflict, was associated with different aspects of health in female managers. Using female samples only, this analytical result agrees with the findings of Elovainio et al. (2002) that procedural justice is significantly associated with the prevalence of employment absenteeism due to physician-certified illness in a cohort of 506 male and 3,570 female hospital employees. The current result contributes to the literature in confirming that organizational procedural justice significantly relates to employee health.

Notably, female managers who perceived their career progress to be slower than that of their peers reported a better health condition, whereas being in the fast track was irrelevant to health condition. This result suggests that the female employee is either a self-determined slow tracker or has been deemed a slow tracker by higher level management. Self-determined slow trackers may decide to be less aggressive because a majority of them are married (80% of slow trackers vs. 70% of fast trackers were married) with children (74% of slow trackers vs. 61% of fast trackers had children) and have a mean age of 40 years. They may reject the concept of linear career progression and tailor their careers to suit their own objectives, needs, and life objectives. A common phenomenon in Taiwan is working mothers who prefer spending more time with their families than aggressively pursuing career advancement. In addition, the stress and the token role conferred on many female fast trackers may make them reluctant to adopt the required fast-paced lifestyle and personal constraints. Conversely, those deemed to be slow trackers may come to accept a more modest career trajectory and enjoy the better health achieved by a more relaxed lifestyle. These women may accept the implications of personal and familial priorities on their career development and can enjoy better health.

A significant finding of this study is the harmful effect of work–family conflicts on the health of female managers. This study confirms the view that work–family conflicts adversely affect the health of women in management position. Kirchmeyer (2002) found that the family situations of female managers continued to present obstacles throughout their careers. Lyness and Thompson (2000) reported that 67% of female executives surveyed agreed that commitment to personal and family responsibilities was the most important challenge for women. According to the Kaleidoscope model of career women, the career decisions of women are normally part of a large and intricate web of interconnected issues and people (Mainiero & Sullivan, 2005). The careers of women, like kaleidoscopes, are relational and multifaceted. In this study, most female managers were in the middle of their careers, and issues of goal achievement and challenge in their careers may take on a secondary role to personal preference for a more balanced lifestyle. An imbalance between work and family can be a significant source of stress, particularly in managerial and professional women, and hinder physical health. Work–family conflict is an unresolved problem worldwide that continues to be detrimental to working women. Possible remedies include providing child care support, flexible working hours, and appropriate mentorship.

The composition of social capital, such as the number of mentors and having a same-gender mentor, was not supported by this study. However, having mentors in higher positions and in different circles from those of their prote'ge's was associated with good health in female managers. The implication is that, from a boundary-spanning perspective, those pursuing a healthy work life should seek a mentor of higher rank in some other department. Furthermore, a mentor who provides substantial help in career development, regardless of gender, can be important in the health of female managers. These findings suggest that careful selection of mentors can truly advance the health of women.

As for the Level 2 hospital effect, Table 2 shows that female managers employed in public hospitals report poor current health condition as compared with those in private hospitals. In Taiwan, nepotism rather than performance is often involved in the appointment of high-level managers in public organizations. The resulting internal organizational politics may in turn increase occupational stress (Elovainio et al., 2002). However, due to the limited number of hospitals surveyed, the effect of organizational context on employee health requires further investigation.

## **Implications and Conclusion**

This study employed a multilevel approach to clarify the hierarchical relationships between hospital profiles, individual characteristics, and the health of female managers. That is, nested in different contexts of hospital management, the individual variable effects observed in this study had more predictive power for the health condition of female managers. Perception-induced career stress was

found to more significantly impact the well-being of female managers in comparison with social capital variables and cross-gender sociodemographic factors. In addition, the most significant variable impeding the health of female managers is work–family conflict. Some implications for health care administrators and for female managers may be derived from the research findings.

#### *For Health Care Administrators*

To retain qualified elite female personnel, a perception management and mentoring system can be planned and implemented in advance. The outcome of perceived stress seems to be more critical than social capital in explaining the health of female managers. Most of the significant variables listed in Table 2 are subjective perception variables, namely, perceived procedural justice, perceived fast-track promotion, and perceived work–family conflict. In addition, the significance level of the perceived variables is higher than that of the two fact-based variables: having a mentor who is a supervisor in some other department and having a mentor who actually assists in career advancement. Unexpectedly, the well-documented effect of social support in terms of the number and gender of mentors revealed no significant influence in this study. A possible explanation is that the sample participants were elite females with considerable self-confidence, which may have mitigated their need for social support. The negative outcome regarding subjective perceptions in female managers suggests that external support may not provide adequate compensation. The implication for administrators is that organizations expecting to benefit from the long-term contribution of female elites should clarify their concern with psychosocial environment at work. Perception management by continuously promoting procedural justice and by addressing work–family conflicts, such as offering flexible work schedules, family-friendly policies, time off for sick children, and time off to accompany children on their first day of school, may offer substantial relief to modern working women.

Although mentoring at work was not as influential in the career advancement of women as expected, having a higher ranking mentor from a different department and substantial mentor assistance did reveal positive effects on the health of female managers. Therefore, a formal mentoring program should be of value. A mentoring system should help talented working women avoid expending time and energy exploring a mentorship on their own while at the same time provide a broader pool of qualified mentors from across departments. Furthermore, a formal mentoring system must be constantly scrutinized to ensure a proper process and outcome. Such a system should consider prote´ge´ feedback to ensure effectiveness. In addition, an effective system for promoting procedural justice should be established in organizations in order to nurture a healthy female workforce.

#### *For Female Managers*

Female managers must clarify their long-term goals and then strive to achieve a satisfactory work–family balance. They should also prioritize health or career development issues according to their changing life stages. Furthermore, female managers must balance the demands of work and family without unduly pressuring themselves in order to preserve their health. In addition, they must control their stress and lead a more relaxed life. For instance, if a health condition becomes a great concern at a certain stage, then promotion and other career goals should be adjusted appropriately.

### **Limitation and Future Research**

The common method problem is not a major concern because this study assessed sociodemographic variables, personal perception, and individual health condition without addressing more sensitive issues such as personal job performance and job satisfaction. Nevertheless, some limitations of this study are recognized. Future studies may benefit from collecting objective health data and comparing differences between perceived and objective measures of health. Because self-reported health information says more about people’s subjective perception of the quality of life, we believe that it is a useful indicator for women who were still in the labor market. The limited number of hospitals

surveyed also limits the conclusions of this study. A future longitudinal study may be conducted to examine how work–family conflicts and mentoring relationships influence long-term health in female workers. Investigating intra-office politics in the public sector would also be of interest. In conclusion, this study investigated an important yet comparatively unexplored issue in the health care industry: the health effects of career-related stress in female managers. Although the glass ceiling is an individual career impediment, the well-being of female managers is vital for organizational development. All concerned parties, including the government, company managers, and the female managers themselves, may benefit by exploring the issues raised in this study.

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