

**ORIGINAL RESEARCH:  
EMPIRICAL RESEARCH – QUANTITATIVE**

# The impact of burnout on self-efficacy, outcome expectations, career interest and nurse turnover

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**Abstract****Aims:** To examine the impact of burnout on self-efficacy, outcome expectations, career interest and on nurses' intentions to leave the profession and to leave the organization.**Background:** Burnout is associated with nurse turnover. Research clarifying the underlying mechanism may provide a novel means to mitigate the impact of burnout on nurse turnover.**Design:** This study uses a cross-sectional design and proportionate stratified sampling.**Methods:** Data were collected from a sample of nurses in one medical centre in northern Taiwan during February - March 2017. This study included nurses employed full-time at the medical centre. Burnout was measured using Maslach Burnout Inventory—Human Service Survey. Self-efficacy, outcome expectations and career interest were measured using the scale of Cunningham et al. Intentions to leave were measured using the scales of Teng et al. Structural equation modelling was used to assess the proposed framework.**Results:** Burnout was negatively related to self-efficacy and outcome expectations. Self-efficacy was positively related to outcome expectations. Outcome expectations were also positively related to career interest. However, self-efficacy was not related to career interest. Career interest was negatively related to the intention to leave the organization, which was further related to the intention to leave the profession. The model fitted the data acceptably.**Conclusions:** When nurses leave the profession, patient outcomes may be affected. Policy makers should evaluate whether the healthcare system can instil expectations for satisfaction, power and adequate compensation in the profession and thus retain nurses.**KEYWORDS**

burnout, career, cognitive theory, nurse, self-efficacy, turnover

## 1 | INTRODUCTION

A shortage of nurses is a major challenge in healthcare facilities worldwide. The global nurse shortage may reach 7.6 million nurses by 2030 (World Health Organization 2016). The shortage is likely driven by ageing populations, a growing incidence of chronic diseases, an ageing nursing workforce and an insufficient number of newly trained nurses (World Health Organization 2016).

When it occurs, nurse turnover (Aiken, Sloane, Bruyneel, Van den Heede, & Sermeus, 2013) also contributes to the nursing shortage and it has long been a major focus of the nursing literature (Al-Hamdan, Manojlovich, & Tanima, 2017; Rodwell, McWilliams, & Gulyas, 2017). Nurse retention (i.e. preventing nurse turnover) is pivotal in addressing the global nursing shortage, because it underlies the effectiveness of other strategies to address this shortage (Rodwell et al., 2017).

Nurse turnover has various antecedents, including effort-reward imbalance (Li, Galatsch, Siegrist, Hans Müller, & Hasselhorn, 2011), psychosomatic complaints (Jourdain & Chênevert, 2010), reduced quality of care (Prapanjaroensin, Patrician, & Vance, 2017) professional commitment (Wong & Laschinger, 2015) and burnout (Boamah & Laschinger, 2016; Heinen et al., 2013; Kompier & Marcelissen, 1990). Moreover, burnout affects nurses' professional commitment (Chang et al., 2017) and thus could initiate career changes or enhance intentions to leave the profession (Heinen et al., 2013). However, the literature has not sufficiently clarified the process variables that link burnout to nursing career change. Research filling this gap could provide novel knowledge to nurse managers and policy makers who seek to comprehensively assess the organizational and social consequences of burnout.

To fill this gap, we chose to use social cognitive career theory (SCCT) (Lent et al., 2015), as SCCT is useful in comprehensively explaining general career decisions. Applying SCCT specifically in a nursing context is also useful for scholars to better understand and assess the consequences of nurse burnout on nurse retention and suggest pathways to monitor (and possibly mitigate) it. Such usefulness justified our adoption of SCCT and its key elements, including self-efficacy (defined as confidence in the capability to perform well in one's career), outcome expectations (expecting satisfaction, power and adequate compensation associated with the career) and career interest (interest in choosing an occupation), to construct our framework. Our modification of SCCT is straightforward that intentions to leave the profession or an organization are driven by career interest. Burnout has an impact on the career interest construct of the SCCT indirectly, using outcome expectations and self-efficacy as mediating factors.

The purpose of this study is to examine the impact of burnout on self-efficacy, outcome expectations, career interest and subsequently on nurses' intentions to leave the profession and to leave the organization where they are currently employed. This theory provides novel insights on nurses' intentions to leave the profession

### Why is this research or review needed?

- A shortage of nurses is a major human resource challenge in healthcare facilities worldwide, while reduction of nursing turnover intention may help alleviate it.
- The literature has not sufficiently clarified the process variables that link burnout to nursing career change, indicating a research gap to be filled.

### What are the three key findings?

- This is the first study that found burnout is related to self-efficacy and outcome expectations.
- Outcome expectation is related to career interest among nurses.
- Career interest among nurses is related to nurses' intentions to leave the profession, which is uniquely observed in this study as related to the intention to leave the organization.

### How should the findings be used to influence policy/practice/research/education?

- In case burnout cannot be fully eliminated, nurse managers should attempt to improve nurses' outcome expectations and career interest, thereby facilitating retention.
- Nursing scholars should consider the social cognitive career theory as an effective theoretical framework for explaining nurses' career decisions, including their professional and organizational turnover.

and/or the organization that may help better monitor and alleviate the nurse shortage problem.

## 1.1 | Background

### 1.1.1 | Social Cognitive Career Theory (SCCT)

SCCT posits that during the career-search process, individuals evaluate their *self-efficacy* and *outcome expectations* and then formulate their interest in a career (*career interest*), which subsequently contributes to actual performance in that career (Lent et al., 2015). These elements of SCCT are interrelated (Cunningham, Bruening, Sartore, Sagas, & Fink, 2005) and they can motivate nursing students to enter professional practice (Thungjaroenkul, Cummings, & Tate, 2016). Once chosen, nurses have an implicit opportunity, each time they go to work, to resign their current position or leave their chosen profession in favour of an alternative. This also reflects a decision about career choice. While the benefits and costs of the decision may evolve over time, the general constructs underlying retention in a profession or in an organization should be consistent

with those constructs leading individuals to choose that career, or position in an organization, in the first place. One such construct is self-efficacy (Lent et al., 2015; Thungjaroenkul et al., 2016). Therefore, the use of SCCT to model career decisions among practicing nurses is appropriate.

SCCT has been applied to nursing studies, as social influences and past performances in teaching and supervision have an impact on self-efficacy and outcome expectations and subsequently fuel nursing students' interests to become nurse educators (Thungjaroenkul et al., 2016). Moreover, Abrahamsen (2015) found that interest in practicing in mental health nursing increased with perceived practical skills but decreased with theoretical knowledge.

### 1.1.2 | Nurse burnout

Burnout is defined as emotional exhaustion, depersonalization and reduced personal accomplishment (Maslach, Jackson, & Leiter, 1996). Once burnout occurs, the consequences for nurses and the care they provide are significant. Nurse burnout reduces the quality of care (Prapanjaroensin et al., 2017) and degrades mental health among new graduate nurses (Laschinger, Borgogni, Consiglio, & Read, 2015).

Burnout has various antecedents, including stress (Hsu, Chen, Yu, & Lou, 2010), excessive workload (Kompier & Marcelissen, 1990) and deteriorated work environment (Hayes, Douglas, & Bonner, 2014). These antecedents likely exist in the current healthcare systems, indicating the likelihood of burnout among healthcare professionals.

We firstly overviewed how the hypotheses are connected. Specifically, the first two hypotheses (H1 and H2) address these the impact of burnout on SCCT elements. The next three hypotheses (H3, H4 and H5) predict intercorrelations among SCCT's elements. The final three hypotheses (H6, H7 and H8) focus on the expected intercorrelations among career interest and the intentions to leave.

Burnout is defined as depletion of energy and emotions for work and a reduced level of personal accomplishment (Maslach et al., 1996). Depletion of emotions for work and reduced personal accomplishment create negative feedback as nurses evaluate their work performance. Negative work performance may reduce confidence in one's professional capabilities, which is core to self-efficacy (Cunningham et al., 2005). Hence, we hypothesized:

H1: Burnout is negatively related to self-efficacy.

Burnout lowers alertness and overall quality of care among nurses and reduces their work performance (Prapanjaroensin et al., 2017). Reduced work performance may negate the expectations for satisfaction, power and adequate compensation (as subjectively evaluated at the individual level). Expectations for satisfaction, power and adequate compensation were defined as outcome expectations (Cunningham et al., 2005). Hence, we hypothesized:

H2: Burnout is negatively related to outcome expectations.

SCCT studies found a positive relationship between self-efficacy and interest (Lent et al., 2015; Thungjaroenkul et al., 2016). One possible explanation is that self-efficacy represents the amount of confidence in one's abilities (Cunningham et al., 2005). In nursing contexts, enhanced confidence in one's abilities also enhances perceptions of the profession and incentivizes nurses to continue pursuing a career in nursing. Hence, we hypothesized:

H3: Self-efficacy is positively related to career interest.

Various SCCT-based studies have verified the link between self-efficacy and outcome expectations (Lent et al., 2015; Thungjaroenkul et al., 2016). The reason may be that self-efficacy indicates the amount of confidence in one's capabilities (Cunningham et al., 2005). High levels of confidence should lead individuals to expect outstanding job performance and create expectations of satisfaction, power and adequate compensation that are core to outcome expectations (Cunningham et al., 2005). Hence, we hypothesized:

H4: Self-efficacy is positively related to outcome expectations.

According to SCCT, outcome expectations should be positively related to career interest (Thungjaroenkul et al., 2016). This is perhaps the most crucial, yet overlooked, area of SCCT as it applies to nursing. The profession of nursing is vested in the concept of professional development. Once nurses demonstrate mastery of an area of care, opportunities may exist to develop new competencies. The development of new competencies could provide the nurses with enhanced satisfaction, which is an important element of career interest (Cunningham et al., 2005). Hence, we hypothesized:

H5: Outcome expectations are positively related to career interest.

### 1.1.3 | Nurse turnover

Nurse turnover can be defined as leaving the profession and/or leaving the organization (Yamaguchi, Inoue, Harada, & Oike, 2016). The former exacerbates the nurse shortage at the level of the industry/economy, while the latter exacerbates this problem in a specific organization. About retaining nurses in the profession, intentions to leave can be predicted by nurses' normative commitment (Gambino, 2010) and continuance commitment (i.e. benefits and costs of switching to another profession) (Chang et al., 2015). On the other hand, nurses' intentions to remain employed in an organization can be predicted by the nursing work environment (Al-Hamdan et al., 2017), management styles (Al-Hamdan, Nussera, & Masa'deh, 2016), trust, work engagement and leader-member exchange (Rodwell et al., 2017).

Recent studies have simultaneously examined intentions to leave the profession and the organization. Empirical examinations of these

two intentions can provide useful insights that allow managers to take actions that simultaneously promote professional and organization nurse retention. Yamaguchi et al. (2016), for example, found that job control and work interference with family were two important determinants of intentions to leave.

Career interest represents an individual's desire to begin/continue an occupation (Cunningham et al., 2005). In nursing contexts, such interest should motivate nurses to continue working as nurses; that is, reduce their intentions to leave the nursing profession. Moreover, SCCT predicts that career interest leads to superior job performance (Lent et al., 2015), which further reduces nurses' intentions to leave the profession, that is:

H6: Nursing career interest is negatively related to intention to leave the profession.

Career interest refers to the appetite for an occupation (Cunningham et al., 2005; Thungjaroenkul et al., 2016). Strong interest in a nursing career should motivate nurses to seek a sustainable environment to pursue a lifelong career, including professional development. Switching to another organization (but in the same profession) should incur additional or unnecessary costs (Meyer, Allen, & Smith, 1993), as nurses learn to navigate the new organizational environment and build professional connections in the new organization. Strong career interest motivates nurses to continue working in the same organization and reduce intentions to leave it (Yamaguchi et al., 2016). Hence, we hypothesized:

H7: Nursing career interest is negatively related to intention to leave the organization.

Intentions to leave an organization have various antecedents, e.g. burnout (Boamah & Laschinger, 2016; Heinen et al., 2013), reduced staff levels and deteriorating work environments (Van den Heede et al., 2013). These antecedents may pertain to a healthcare organization. They may also be attributed to healthcare policies and/or regulations that systematically have an impact on all healthcare organizations, e.g. national healthcare budgets or changes in health insurance reimbursements. Therefore, nurses experiencing frustration with one organization may find similar frustrations in other organizations, boosting their intentions to leave the profession. Hence, we hypothesized:

H8: Intention to leave the organization is positively related to intention to leave the profession.

Figure 1 illustrates the research framework.

## 2 | THE STUDY

### 2.1 | Aim

The aim of this study was to examine the impact of burnout on self-efficacy, outcome expectations, career interest and subsequently on

nurses' intentions to leave the profession and to leave the organization where they are currently employed.

### 2.2 | Design

We adopted a cross-sectional, survey design-based methodology. This approach is suitable for testing correlations among the study constructs and meanwhile facilitates an evaluation of hypotheses with minimal interference by time-related confounding factors. Moreover, this approach has been widely accepted in the nursing literature (e.g. Al-Hamdan et al., 2017; Thungjaroenkul et al., 2016).

### 2.3 | Sample and data collection

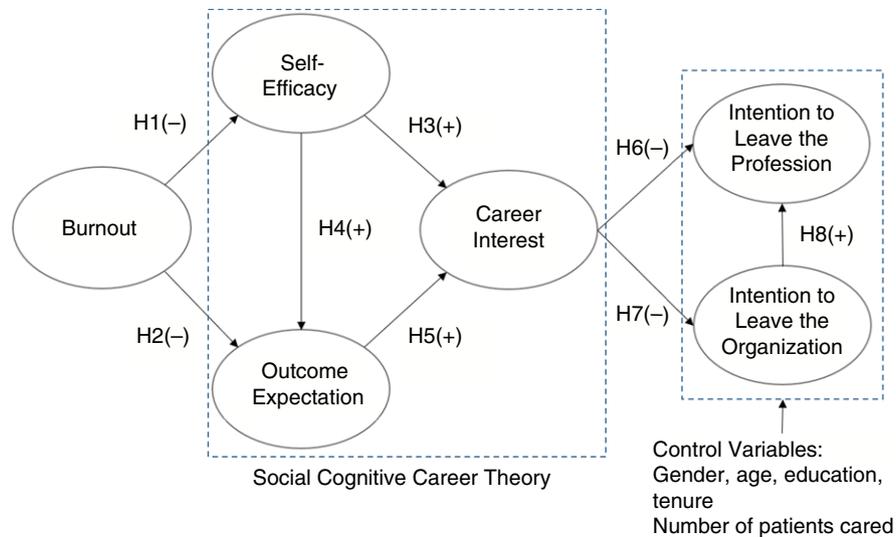
The study was conducted at a major medical centre in northern Taiwan during February and March 2017. The inclusion criteria included nurses who were full-time employees ( $\geq 40$  hr/week) of the medical centre,  $\geq 20$  years of age and had roles that were comprised of nursing duties. Nurse supervisors, nurse practitioners, nurse interns or student nurses were excluded. The criteria were designed to ensure comparability among the participants.

Proportionate stratified sampling was implemented by using computer-generated random digits. This sampling method was chosen because it maximizes sample representativeness while maintaining a high level of randomization. Specifically, the same proportion of nurses in each unit (strata) were randomly identified and invited to participate in the study.

This study was reviewed and approved by an Institutional Review Board (IRB) and the nursing department of the medical centre where the data were collected. The nursing department provided a complete list of eligible nurses (for sampling) and permitted the research team to access the sampled nurses. Research assistants approached the sampled participants, briefed them about the study's purpose and asked for their consent to participate in the study. Research assistants subsequently asked participants to sign the informed consent form and complete the study questionnaire. Appointments were made to collect the completed questionnaires at a later date. These procedures minimize interference with ongoing nursing tasks, yielding more informative responses and a higher response rate.

### 2.4 | Ethical considerations

Prior to data collection, the study was approved by an IRB (201600597BOC601). Research assistants who were not the employees of the medical centre were recruited to collect the data. Research assistants were trained in their ethics and communication to properly administer the written informed consent procedures. Nurses were asked to voluntarily participate in this study. To protect data security, information linking participant identities to survey responses were stored in password-protected files. Paper copies of these data were locked in secure cabinets, conforming to IRB requirements.



**FIGURE 1** Research framework [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

## 2.5 | Instruments

This analysis seeks to characterize the existing level of burnout (rather than examine the formation of burnout) and assess its impact on nurse turnover. Thus, we seek a valid and reliable instrument to characterize burnout. We used the 22 items from Maslach et al.'s (1996) Maslach Burnout Inventory—Human Service Survey (MBI-HSS) to measure burnout. MBI-HSS has been used frequently in the literature and showed sufficient reliability. We received permission to use MBI-HSS from Mind Garden. We used the Traditional Chinese version and modified three items to better fit the original meanings in the English version, including the items involving “working with people”, “influencing patients’ lives” and “enjoy interactions with patients”. These items exhibited acceptable reliability ( $\alpha \geq 0.84$ ) and validity (most of  $\lambda$  values  $\geq 0.65$ ) (Teng, Shyu, Chiou, Fan, & Lam, 2010).

As this study modified the three items on burnout, a confirmatory factor analysis (CFA) is necessary. SCCT contains three concepts, i.e. self-efficacy, outcome expectations and career interest. These concepts were measured using the items modified from Cunningham et al. (2005). The example item for self-efficacy is “I expect I can perform well in a job in the nursing profession”. The example item for outcome expectations is “I expect to obtain a good salary in the nursing profession”. The example item for career interest is “Continuing to work in the nursing profession is an interesting option for me”.

Two items measuring intentions to leave the nursing profession and two items measuring intentions to leave the organization were adapted from Teng, Shyu, and Chang (2007). A third item for each intention scale was developed by the authors and added to the survey, totalling three items for each intention scale. The third survey item in each scale was created by taking the two intention items for a given scale and adapting the time frame of evaluation to ensure that intentions to leave (the profession or the organization) covered

short, intermediate and long run time frames. The two items in Teng et al. (2007) exhibited sufficient reliability ( $\alpha = 0.75$ ) and adequate validity ( $\lambda \geq 0.77$ ) in a sample of 238 hospital nurses. Hence, the intention to leave (the profession and the organization) scales used in this survey are also likely to exhibit adequate reliability.

The survey items used response scales ranging from 1 (very disagreeable) - 7 (very agreeable). If survey items were worded negatively, responses were reverse scored. Items measuring each construct were averaged to represent its level and a higher (average) score represents a higher level in that construct. This study also collected information on various control variables, i.e. respondent's gender, age, educational level, tenure (years working as nurses) and average number of patients for whom the nurse provides care.

## 2.6 | Data analyses

The covariance matrix was used as the input for conducting structural equation modelling (SEM). SEM can analyse complex structural relations (Hair, Black, Babin, Anderson, & Tatham, 2006), as in our framework, justifying its use. This study used the LISREL 8.80 software (Scientific Software International, Lincolnwood, IL, USA) to conduct SEM. Pearson's correlation coefficients were used to examine the correlation between the study constructs and were calculated using Statistical Product and Service Solutions version 22.0 (IBM, IBM SPSS Statistics for Windows, Armonk, NY, USA). The significance level was set at 0.05. All  $\chi^2$  tests used one-sided confidence intervals, while all remaining hypothesis tests were two-tailed.

## 3 | RESULTS

### 3.1 | The Participants

A complete list of 2,660 eligible nurses who worked for 109 units in the medical centre was obtained, including wards, intensive care

units, emergency units, operating rooms and special care centres. As permitted by the IRB, we approached 605 nurses (22.7% of the sampling pool). Of these 605 nurses, nine were on maternity leave. Twelve resigned during the time between obtaining the list and approaching potential participants. Four nurses took positions with affiliated organizations and 10 refused to participate. The low refuse rate (1.7%) may originate from the training provided to the research assistants, which emphasized ethics, respect, communication and convenience for nurses, thereby increasing the likelihood of participation. Cumulatively, 570 nurses (94.2%) provided useable responses. This response rate is acceptable according to the threshold value of 40% by Kramer, Schmalenberg, Brewer, Verran, and Keller-Unger (2009).

We compared the frequency distributions of sampled nurses and the sampling pool (i.e. 2,660 nurses) across each of the units in the medical centre and did not find any significant differences in the distribution of respondents across units ( $\chi^2 = 10.37$ ,  $p = 1.00$ ), supporting the sample's representativeness. Moreover, since our study is the first to use SCCT as a basis for examining the intentions of practicing hospital nurses, no historical data were available to estimate the required sample size. The sample size (i.e. 570) is comparable to recently published nursing studies, e.g. 411 in Abrahamson (2015), 459 in Rodwell et al. (2017) and 582 in Al-Hamdan et al. (2017).

Table 1 summarizes the profile of the participants, who cared for an average of 7.26 patients, with a standard deviation of 4.47 patients. Among the participants, most were women (98.1%), less than 40 years old (88.8%), had attended universities/colleges (97.0%) and worked as nurses for one to 20 years (86.3%). Around half of the participants worked for wards (50.7%). The gender composition was close to that of the local nurse population.

### 3.2 | Validity, reliability and rigour

Table 2 lists the study items, descriptive statistics and summarizes the results of CFA. Items measuring each construct exhibited a Cronbach's  $\alpha$  value of 0.78 or higher and composite reliability (CR) value of 0.53 or higher, indicating sufficient reliability. Consistent with the literature, two-way intraclass correlations (ICC(2)) were used to assess reliability (Ginsburg & Gilin, 2016). Our ICC(2) values were all  $\geq 0.77$ , which are regarded as acceptable (Glick, 1985; Polit & Yang, 2015).

All but one item measuring constructs other than burnout had indicator loadings of at least 0.50, indicating tolerable convergent validity. Moreover, all except five out of the 22 items measuring burnout had indicator loadings of at least 0.50. The reason for imperfect performance may be due to modifying the three items on the MBI-HSS. Although a few items did not have perfect convergent validity, we chose to retain them, since they are in the well-known MBI-HSS scale. Removal of these items did not substantially change the empirical results.

Discriminant validity was examined by comparing the original measurement model to one where the correlation between any pair of constructs is equal to one. The analytical results (i.e.  $\Delta\chi^2 > 3.84$ )

**TABLE 1** Summary of the participant profile

Variable	Category	N	Percentage
Gender	Male	11	1.9
	Female	559	98.1
Age	$\geq 20$ and $< 30$ years old	299	52.5
	$\geq 30$ and $< 40$ years old	207	36.3
	$\geq 40$ and $< 50$ years old	51	8.9
	$\geq 50$ and $< 60$ years old	10	1.8
	$\geq 60$ years old	1	0.2
	Missing	2	0.4
Education	High School	6	1.1
	University/College	541	94.9
	Graduate Institute	12	2.1
	Missing	11	1.9
Years Working as Nurses	$\leq 1$ year	30	5.3
	$> 1$ year and $\leq 5$ years	213	37.4
	$> 5$ years and $\leq 10$ years	120	21.1
	$> 10$ years and $\leq 15$ years	91	16.0
	$> 15$ years and $\leq 20$ years	67	11.8
	$> 20$ years	48	8.4
	Missing	1	0.2
	Work Unit	Wards	289
Intensive Care Units		147	25.8
Operating Rooms		83	14.6
Emergency Units		43	7.5
Special Care Centres		8	1.4

demonstrated the superiority of the original measurement model and supported its discriminant validity. The measurement fit the data adequately ( $\chi^2/df = 1.07$ , CFI = 1.00, IFI = 1.00, GFI = 0.93, RMSEA = 0.01).

Table 3 lists the Pearson's correlation coefficients among the study constructs. Most of the correlations between the study constructs ranged from  $-0.53$ – $0.66$ . One exception was the correlation between the intention to leave the profession and the intention to leave the organization, which was 0.78. The high magnitude of this correlation was expected, since the two constructs were nominally similar, and their measures passed the discriminant validity test, i.e. their measures were operationally and statistically different. A related concern is common method variance (CMV) bias. To check for CMV, the methodological literature was consulted to construct a model incorporating CMV-related bias. A comparison of the two models yielded  $\Delta df = 52$  and  $\Delta\chi^2 = 3,501.29$ . The  $\Delta\chi^2$  value (i.e. 3,501.29) exceeded the threshold value (i.e.  $\chi^2(52) = 69.83$ ). That is, it is unlikely that CMV had a substantial impact on the results.

Burnout was negatively related to self-efficacy (path coefficient, hereafter,  $p.c. = -0.69$ ,  $p < 0.001$ ) and outcome expectations ( $p.c. = -0.49$ ,  $p < 0.001$ ), supporting H1 and H2. Self-efficacy was

**TABLE 2** Study items and summary of the confirmatory factor analyses

Construct-item	M	SD	$\lambda$	$\alpha$	C.I. of $\alpha$	CR	ICC
Burnout-Emotional Exhaustion	4.20	1.14		0.92	[0.91, 0.93]	0.79	0.88
EE1	4.96	1.45	0.55				
EE2	5.15	1.36	0.56				
EE3	4.39	1.54	0.62				
EE4	3.95	1.58	0.55				
EE5	4.14	1.51	0.62				
EE6	4.13	1.54	0.66				
EE7	4.60	1.42	0.44				
EE8	3.26	1.45	0.42				
EE9	3.21	1.35	0.47				
Burnout-Depersonalization	2.71	1.25		0.85	[0.83, 0.87]	0.71	0.84
DP1	2.43	1.51	0.62				
DP2	2.77	1.55	0.65				
DP3	3.18	1.81	0.53				
DP4	2.27	1.32	0.59				
DP5	2.93	1.65	0.46				
Burnout-Personal Accomplishment	3.00	0.84		0.90	[0.88, 0.91]	0.77	0.86
PA1	2.60	1.03	0.52				
PA2	2.77	0.97	0.57				
PA3	2.40	0.93	0.57				
PA4	3.03	1.11	0.58				
PA5	0.77	1.12	0.57				
PA6	3.28	1.23	0.50				
PA7	3.87	1.31	0.48				
PA8	3.29	1.13	0.53				
Self-Efficacy <sup>a</sup>	5.12	0.85		0.87	[0.86, 0.89]	0.71	0.84
SE1	5.49	0.99	0.57				
SE2	4.71	1.15	0.54				
SE3	4.72	1.14	0.55				
SE4	5.54	0.93	0.61				
SE5	5.15	1.00	0.58				
Outcome Expectations <sup>a</sup>	5.29	0.98		0.89	[0.88, 0.91]	0.74	0.87
OE1	5.22	1.19	0.64				
OE2	5.48	1.07	0.63				
OE3	4.96	1.33	0.58				
OE4	6.00	1.15	0.46				
OE5	5.04	1.24	0.51				
OE6	4.96	1.33	0.55				
Career Interest <sup>a</sup>	4.82	1.31		0.78	[0.75, 0.81]	0.53	0.77
CI1	4.69	1.62	0.55				

(Continues)

**TABLE 2** (Continued)

Construct-item	M	SD	$\lambda$	$\alpha$	C.I. of $\alpha$	CR	ICC
CI2	4.96	1.25	0.65				
Intention to Leave the Profession	3.32	1.44		0.88	[0.86, 0.90]	0.67	0.83
ILP1	2.81	1.33	0.62				
ILP2	3.19	1.54	0.66				
ILP3	3.97	1.88	0.62				
Intention to Leave the Organization	3.48	1.47		0.86	[0.84, 0.88]	0.64	0.78
ILO1	2.65	1.37	0.54				
ILO2	3.50	1.65	0.64				
ILO3	4.30	1.94	0.65				

Note. <sup>a</sup>Concepts included in the social cognitive career theory;  $\lambda$  denotes indicator loading;  $\alpha$  denotes Cronbach's  $\alpha$ ; C.I. denotes 95% confidence interval of the Cronbach's  $\alpha$ ; CR denotes composite reliability. ICC denotes intraclass coefficient.

not related to career interest ( $p.c. = -0.04, p > 0.05$ ), not supporting H3. Self-efficacy was positively related to outcome expectations ( $p.c. = 0.32, p < 0.001$ ), which was positively related to career interest ( $p.c. = 0.95, p < 0.001$ ), supporting H4 and H5. Career interest was negatively related to the intention to leave the profession ( $p.c. = -0.26, p < 0.001$ ) and the intention to leave the organization ( $p.c. = -0.50, p < 0.001$ ), supporting H6 and H7. The intention to leave the profession was positively related to the intention to leave the organization ( $p.c. = 0.74, p < 0.001$ ), supporting H8. Figure 2 illustrates our final model.

The structural model fit the data adequately ( $\chi^2/df = 1.09$ , CFI = 1.00, IFI = 1.00, GFI = 0.94, RMSEA = 0.01) and explained 84% of the variance in the intention to leave the organization and 47% of the variance for the intention to leave the profession. These proportions should be regarded as very large effect sizes (Cohen, 1992). The reason may be the inclusion of highly relevant factors in our model.

Men were more likely than women to leave the profession and the organization ( $p.c. = -0.10$  and  $-0.11$ , respectively,  $p = 0.03$  for both path coefficient estimates), consistent with European nurses

**TABLE 3** Correlations among the Study Constructs

	1	2	3	4	5
1. Burnout	—				
2. Self-Efficacy <sup>a</sup>	-0.42	—			
3. Outcome Expectation <sup>a</sup>	-0.45	0.59	—		
4. Career Interest <sup>a</sup>	-0.50	0.41	0.66	—	
5. Intention to Leave the Profession	0.42	-0.30	-0.53	-0.48	—
6. Intention to Leave the Organization	0.44	-0.27	-0.43	-0.36	0.78

Note. All numbers have a  $p < 0.05$ .

<sup>a</sup>Concepts included in the social cognitive career theory.

(Heinen et al., 2013). Age was negatively related to the intention to leave both the profession and the organization (p.c. =  $-0.13$  and  $-0.10$ , respectively,  $p = 0.01$  and  $p = 0.05$ ). A nurse's educational level was positively related to the intention to leave the profession (p.c. =  $0.11$ ,  $p = 0.01$ ). Tenure was negatively related to the intention to leave the profession (p.c. =  $-0.13$ ,  $p = 0.01$ ). Average patient care loads were not significantly related to the intention to leave the profession and the organization (p.c. =  $0.01$  and  $-0.01$ , respectively,  $p = 0.76$  and  $0.89$ ).

## 4 | DISCUSSION

### 4.1 | Main findings, contributions and theoretical implications

This study was the first to use SCCT to examine outcome expectations among practicing hospital nurses, rather than students or newly recruited nurses, providing a broader framework to apply and assess SCCT. This theory explains early-career choices, while the present study explains subsequent career choices; that is, when and how nursing professionals intend to quit. By doing so, our study used the theory to make predictions across an individual's entire career span, contributing in-depth understanding on nurses' turnover.

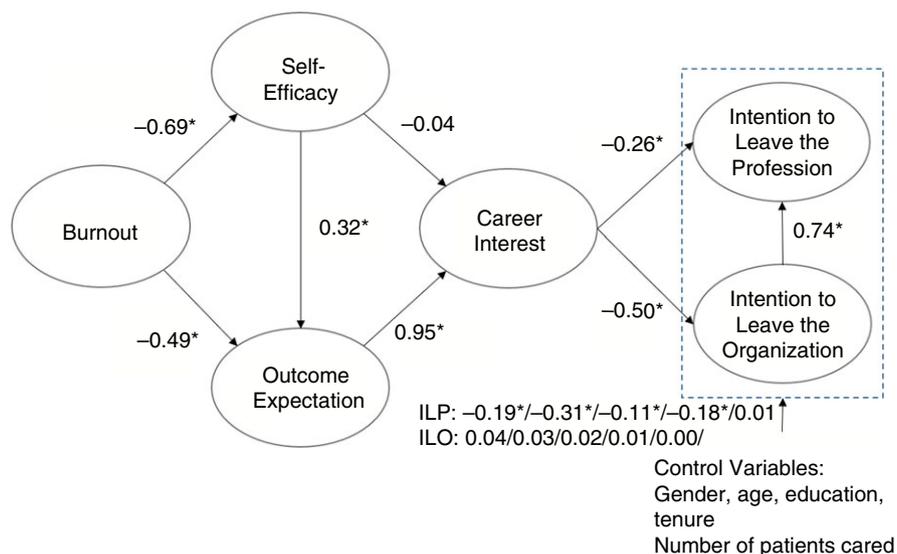
Thungjaroenkul et al. (2016) used SCCT in a population of graduate nursing students. They found that social influence and past performance (in teaching and supervision) were related to self-efficacy and outcome expectations and subsequently to the interest to be a nurse educator. Consistent with Thungjaroenkul et al. (2016), our study examined the usefulness of SCCT in nursing contexts. Our study also suggested that self-efficacy and outcome expectations lead to career interest. This extends Thungjaroenkul et al. (2016) by applying SCCT to hospital nurses, extending its usefulness to the nursing profession.

The insignificant link between self-efficacy and career interest (H3) also appears in Thungjaroenkul et al. (2016). A possible explanation may be that individuals create self-efficacy through past successes and proficiency that may be in or beyond their occupations. Thus, individuals may exhibit self-efficacy in all areas of their lives, whether work-related or otherwise and whether or not they have a strong interest in the profession.

This study makes several additional contributions to the nursing workforce literature. First, Yamaguchi et al. (2016) found that work interference with family activities and low levels of job control, predicted nurses' intention to leave both hospitals and the nursing profession. We extended Yamaguchi et al.'s (2016) study by providing an alternative and more integrated framework (i.e. SCCT) to explain the difference between these intentions and their sources. In doing so, a precedent is set for future researchers to use SCCT as a framework to distinguish intentions to quit from their antecedents and/or sources.

Second, Rodwell et al. (2017) found that nurses' trust, work engagement and leader-member exchange help reduce nurses' intent to quit. Moreover, Brunetto, Rodwell, Shacklock, Farr-Wharton, and Demir (2016) found that psychological capital and organizational support help reduce nurses' intentions to quit. Our study went further by introducing theoretically justified antecedents of nurses' intentions to quit, contributing insights for policy makers and managers to retain nurses in the profession and the organization, respectively.

Van den Heede et al. (2013) found that high patient-to-nurse staffing ratios and a deteriorated work environment were associated with nurses' intention to leave. These factors also affect patient satisfaction and quality (Aiken et al., 2012). Our study examined nurses' intentions to leave and provided an explanation for Van den Heede et al.'s (2013) findings. Specifically, high patient-to-nurse ratios and deteriorated work environment likely fuel burnout, thus boosting nurses' intentions to leave.



**FIGURE 2** Analytical results. Note. \*denotes  $p < 0.05$ . ILP denotes the impact of control variables on the intention to leave the profession. ILO denotes the impact of control variables on the intention to leave the organization [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

## 4.2 | Implications for nurse managers and policy makers

This study was conducted in Taiwan, where most nurses were female and under 50 years old. These features are common to nurses in international contexts (Al-Hamdan et al., 2016; Rodwell et al., 2017). Sampled nurses in this study worked for various units throughout the medical centre, thereby providing results that reflect most areas of nursing practice. While our findings certainly apply to the population of nurses working in the facility where the study took place, our findings may also generalize to other facilities (and possibly countries) that provide a similar mix of services, face similar nurse-related demographics and face similar nursing shortages as those encountered by the medical in our study.

For organizations (and possibly countries) that are comparable to our study's setting, the findings of this study provide several useful insights. Most importantly, this study found that burnout indirectly reduced intentions to leave the profession and the organization. Hence, it is important for nurse managers and policy makers to consistently monitor the level of nurse burnout for the organization and the profession, respectively, as it predicts intentions to leave. Consistent monitoring provides an opportunity to recognize and address intentions to leave before these intentions are acted on. Mitigating nurse turnover in a facility may have a positive impact on patient care, nursing workflow and the financial viability of the organization. At a societal level, monitoring burnout also provides policy makers with an opportunity to intervene before intentions to leave the profession are acted on. Such interventions prevent the current nursing shortage from becoming exacerbated. In certain cases, monitoring burnout may provide an obvious means for managers or policy makers to directly address the burnout. Those opportunities were not addressed in our study. However, the current study does provide a linkage between burnout and intentions to leave. By using these linkages (as described below), managers and policy makers have additional tools to retain nurses in the organization and profession, respectively.

Burnout has a clear antecedent, work-related stress, which has a negative impact on nurses' health, patient safety (Cox, Griffiths, & Rial-González, 2000), absenteeism and turnover (Kompier & Marcelissen, 1990). Work-related stress may be alleviated by increasing salary, supportive resources (Glazer & Gyurak, 2008), job control, job security and reducing working hours (Kompier & Marcelissen, 1990). Managers and policy makers may use any of these factors as a means to reduce burnout.

Self-efficacy was positively related to outcome expectations, which were also positively related to career interest. Hence, enhancement of self-efficacy among nurses is important. To improve nurses' self-efficacy, one may consider transformational leadership, the ability to guide nurses to change through inspiration (Salanova, Lorente, Chambel, & Martínez, 2011). Such ability could inspire the nursing staff to provide improved patient care and thereby improve nurses' self-efficacy.

## 4.3 | Research limitations and future research directions

Our study adopted a cross-sectional design. This design minimizes the impact of time-related confounding factors and thus has been used widely in the nursing literature (e.g. Al-Hamdan et al., 2017; Rodwell et al., 2017). However, this design is also limited in its ability to directly examine causal relationships. Mixed methods may be used in the future to assess the current study's hypotheses in a more robust manner.

We were required to follow the regulations of the medical centre where we collected data. The required approval of the study by the medical centre's nursing department may impose pressure on nurses to participate in this study. To alleviate this pressure, we recruited research assistants who did not work for the medical centre (and certainly not for the nursing department). Moreover, research assistants were instructed to highly respect nurses' decisions to participate or not participate in the study. Furthermore, nurses' participation was unrelated to the compensation or evaluation of research assistants, minimizing research assistants' incentives to pressure nurses to participate. Cumulatively, we took all reasonable means to alleviate the pressure to participate in this study, as required by ethical standards. Nonetheless, it is impossible to completely eliminate the presence of actual or implied pressure to participate. Future research may collect data in practice settings that are void of such actual or perceived pressures.

This study used SEM as a method of analysis. As such, model overfitting is a concern. Future research could collect two data sets, using the one data set to analyse the model and the other data set to validate the model. This process would provide valuable information about the robustness of our model. Larger data sets may also facilitate sensitivity analyses where slightly different specifications of the SEM are evaluated.

This study did not implement multiple comparisons, nor were p-values adjusted to facilitate the testing of multiple (sequential) hypotheses. Future works whose empirical analyses use multiple comparisons (including, but not limited to, Bonferroni corrections) would improve on our empirical results.

## 5 | CONCLUSIONS

This study extended SCCT to practicing nurses and found that SCCT is appropriate for explaining why and how burnout may motivate established, practicing nurses to re-examine their careers and determine whether they intend to leave the profession and/or their current organization. This study found that burnout is related to career interest via self-efficacy and outcome expectations, but the link between self-efficacy and career interest (which is a part of SCCT) is not a significant correlate of these intentions, setting an interesting boundary for SCCT. Future studies should develop more sophisticated theoretical and/or empirical mechanisms to explain when or

why the link exists. Moreover, future studies could adopt alternative designs for confirming causality among the constructs in this study.

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## AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE [<http://www.icmje.org/recommendations/>]):

1. substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
2. drafting the article or revising it critically for important intellectual content.

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