

**Burnout and Empathy of Nurses in Afiliated Hospitals of Kunming
Medical University, the People's Republic of China**
**ความเหนื่อยหน่ายและความเห็นใจผู้อื่นของพยาบาลในโรงพยาบาล
เครือมหาวินิจฉัยการแพทย์คุนหมิง สาธารณรัฐประชาชนจีน**

คู่	เซว่เลย์ *	Du	Xuelei *
จิตติณัฐ	อักคะเดชอนันต์ **	Thititnut	Akkadechanunt **
บุญพิชชา	จิตต์ภักดี **	Bunpitcha	Chitpakdee **

บทคัดย่อ

ความเห็นใจผู้อื่นเป็นสิ่งสำคัญในการให้การพยาบาลที่ดีแก่ผู้ป่วย จากผลการวิจัยที่ผ่านมาพบว่าความเหนื่อยหน่ายเป็นปัจจัยหนึ่งที่มีความสัมพันธ์กับความเห็นใจผู้อื่น การวิจัยเชิงพรรณนาหาความสัมพันธ์ครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความเหนื่อยหน่าย ความเห็นใจผู้อื่น และความสัมพันธ์ระหว่างความเหนื่อยหน่ายและความเห็นใจผู้อื่นของพยาบาล กลุ่มตัวอย่างเป็นพยาบาลจำนวน 368 คน ที่ปฏิบัติงานในโรงพยาบาลเครือมหาวินิจฉัยการแพทย์คุนหมิง สาธารณรัฐประชาชนจีน จำนวน 4 โรงพยาบาล เครื่องมือวิจัยประกอบด้วย 1) แบบสอบถามข้อมูลส่วนบุคคล 2) แบบวัดความเห็นใจผู้อื่นของบุคลากรด้านสุขภาพของเจฟเฟอสัน (Jefferson Scale of Empathy-Health Profession: JSE-HP) ฉบับภาษาจีน 3) แบบวัดความเหนื่อยหน่ายของแมสแลช-สำรวจผู้ให้บริการแก่สังคม (Maslach Burnout Inventory-Human Services Survey: MBI-HSS) ฉบับภาษาจีน โดยเครื่องมือ JSE-HP และ MBI-HSS ได้รับการตรวจสอบความตรงของเครื่องมือโดยผู้พัฒนาเครื่องมือ ค่าสัมประสิทธิ์สหสัมพันธ์แอลฟาของครอนบาคของ JSE-HP เท่ากับ .97 และ แต่ละด้านของ MBI-HSS เท่ากับ .84, .77 และ .85 ตามลำดับ วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา และสัมประสิทธิ์สหสัมพันธ์ของสเปียร์แมน

ผลการศึกษาพบว่า

1. คะแนนเฉลี่ยความเห็นใจผู้อื่นตามการรับรู้ของพยาบาลอยู่ในระดับปานกลาง
2. คะแนนเฉลี่ยของความเหนื่อยหน่ายของพยาบาล 3 ด้านได้แก่ ความเหนื่อยล้าทางอารมณ์ การลดค่าความเป็นบุคคล และความสำเร็จส่วนบุคคล อยู่ในระดับปานกลาง
3. การลดค่าความเป็นบุคคลมีความสัมพันธ์เชิงลบในระดับปานกลางกับความเห็นใจผู้อื่นความสำเร็จส่วนบุคคลมีความสัมพันธ์ในเชิงบวกในระดับปานกลางกับความเห็นใจผู้อื่น และไม่พบความสัมพันธ์ระหว่างความเหนื่อยล้าทางอารมณ์กับความเห็นใจผู้อื่น

ผลของการวิจัยนี้ใช้เป็นข้อมูลพื้นฐานสำหรับผู้บริหารโรงพยาบาลและผู้บริหารทางการพยาบาล ในการกำหนดกลยุทธ์ที่เหมาะสมเพื่อพัฒนาความเห็นใจผู้อื่นของพยาบาล โดยสนับสนุนให้เกิดความสำเร็จส่วนบุคคล และป้องกัน

* พยาบาลประจำการ โรงพยาบาลเครือมหาวินิจฉัยการแพทย์คุนหมิงแห่งแรก สาธารณรัฐประชาชนจีน
* Staff nurse, The First Affiliated Hospital of Kunming Medical University, the people's republic of China, nudang_zq@hotmail.com
** ผู้ช่วยศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่
** Assistant Professor, Faculty of Nursing, Chiang Mai University
วันที่รับบทความ 1 กุมภาพันธ์ 2562 วันที่แก้ไขบทความ 20 พฤษภาคม 2562 วันตอบรับบทความ 20 สิงหาคม 2562

การลดค่าความเป็นบุคคลของพยาบาล

คำสำคัญ: ความเหนื่อยหน่าย ความเห็นใจผู้อื่น พยาบาล โรงพยาบาลตติยภูมิ

Abstract

Empathy is an essential element in providing good nursing care for patients. Based upon the previous research result, burnout is one of the factors that related to the empathy. The purposes of this descriptive correlational study were to examine burnout and empathy, as well as to identify the relationships between burnout and empathy of nurses. The sample consisted of 368 nurses who worked in four Affiliated Hospitals of Kunming Medical University. Research instruments included: 1) a demographic data form, 2) the Chinese version of the Jefferson Scale of Empathy-Health Profession (JSE-HP), and 3) the Chinese version of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). The JSE-HP and MBI-HSS were confirmed for validity by the developers. The Cronbach's alpha coefficients were confirmed by the researcher as .97 for the JSE-HP and as .84, .77, and .85 for the three subscales of MBI-HSS. Descriptive statistics and Spearman's correlation were used for data analysis.

The results revealed that:

1. The mean score of empathy as perceived by nurses was at a moderate level.
2. The mean scores in the three subscales of burnout including emotional exhaustion, depersonalization, and personal accomplishment were at moderate levels.
3. There was a moderate negative relationship between depersonalization and empathy, a moderate positive relationship between personal accomplishment and empathy, and no relationship between emotional exhaustion and empathy.

The results of this research could be used as basic data by hospital administrators and nursing administrators in forming strategies appropriate for development of empathy among nurses through support for personal success and prevention of depersonalization

Keywords: *Burnout, Empathy, Nurses, Tertiary Hospitals*

Background and significance

One of the most important indicators to measure the quality of hospital services is the quality of care. The social and economic efficiency of a hospital is affected by the quality of care, and also relates to the work of the hospital (Zhou, 2002). Nurses play an important role in

monitoring and evaluating patients, and in order to reduce risk or prevent disease complications, nurses need to make appropriate interventions. As a result, nurses play a vital role in improving the quality of a hospital, while providing holistic, patient-centered care (Draper, Felland, Liebhaber, & Melichar, 2008). Patient-centered care (PCC)

is being highlighted increasingly as an important conceptual model to improve quality of health care, as it improves patient satisfaction, leads to better health outcomes, and provides cost-effective care. Empathy is seen as an important cornerstone to effective PCC (Bauchat, Seropian, & Jeffries, 2016) Hojat et al. (2002) defined empathy as a predominantly cognitive (rather than emotional) attribute that involves an understanding (rather than feeling) of experiences, concerns and perspectives of the patient, combined with a capacity to communicate this understanding. Based on literature review, there were three factors of empathy: Perspective taking; Compassionate care; Standing in the patient's shoes.

Several studies of empathy in nursing presented many factors that are related to empathy; these include age, gender, marital status, number of years working, and educational qualifications (Yang, Wang, Pan, & Hong, 2013; Zhang & Liu, 2012; Zhong & Liu, 2012). Empathy was also found to be related to emotional exhaustion (Figley, 2002; Rothschild, 2006). Research found that, as scores of personal accomplishment increase, so do levels of empathy (Ferri, Guerra, Marcheselli, Cunico, & Di Lorenzo, 2015; Omdahl & Donnell, 1999). In addition, evidence in literature showed that the depersonalization of burnout had serious impacts on empathy (Poghosyan, Clarke, Finlayson, & Aiken, 2010) and staff turnover (Maslach, 2003; Madhu, 2013). Since emotional exhaustion, personal accomplishment and depersonalization are three dimensions of burnout, it is not surprising that burnout is

closely related to empathizer (Poghosyan et al., 2010).

Maslach, Jackson, & Leiter (1996) defined burnout as a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion refers to feelings of being emotionally overextended and exhausted by one's work. Depersonalization is unfeeling and impersonal response toward recipients of one's service, care, treatment, or instruction. Reduced personal accomplishment means reduced productivity or capability, low morale, withdrawal, and an inability to cope.

Williams (1989) found that empathy was significantly positively correlated with both emotional exhaustion ($r = 0.23, p < .001$) and personal accomplishment ($r = 0.25, p < .001$). Astrom, Nilsson, Norberg, & Winbald (1990) conducted a study with 557 nurses in a geriatric care facility in Sweden. They found a negative correlation ($r = -0.19, p < .05$) between empathy and burnout. In Korea, Lee, Song, Cho, Lee, & Daly (2003) found that empathy was the most important predictor of depersonalization ($\beta = -0.24$). There was negative correlation between cognitive empathy and emotional exhaustion ($r = -0.25, p < .001$), a positive correlation between cognitive empathy and personal accomplishment ($r = 0.47, p < .001$) and a negative correlation between cognitive empathy and depersonalization ($r = -0.36, p < .001$). Recently, Ferri et al. (2015) studied the correlation between empathy and burnout among nursing students and nurses, in 17 medical and surgical hospital wards at a general hospital in Italy. The results

showed that personal accomplishment possessed a positive correlation with empathy among the nurses ($r = 0.266$, $p < 0.001$). These findings indicated that the relationship between burnout and empathy were inconsistent.

Aside from previous research of burnout and empathy in China, a study exploring the relationship between the two has not been conducted in the affiliated hospitals of KMU, or anywhere in Yunnan province. Moreover, the descriptive research findings of burnout and empathy from other countries and other areas may not be applicable in the context of China. Therefore, it is necessary to conduct a study examining burnout and empathy among nurses, as well as the relationship between each dimension of burnout and empathy among nurses, in affiliated hospitals of KMU, the People's Republic of China.

Objectives

The purposes of this study were to examine burnout and empathy, as well as to identify the relationships between burnout and empathy of nurses in Affiliated Hospitals of Kunming Medical University, the P. R. China.

Conceptual Framework

The concept of empathy is based on Hojat et al. (2002), who defined empathy as “a predominantly cognitive (rather than emotional) attribute that involves an understanding (rather than feeling) of experiences, concerns and perspectives of the patient, combined with a capacity to communicate this understanding” It is composed of three components: perspec-

tive taking(PT), compassionate care (CC), and “standing in the patient’s shoes (SPS).” Based on literature review, high burnout was found related to low empathy. Burnout based on Maslach and Jackson’s (1981, 1986, & 1996) was defined as “a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with other people in some capacity.” It includes three dimensions: emotional exhaustion(EE), depersonalization(DP), and reduced personal accomplishment(PA). There is no relationship between EE and empathy, a moderately negative relationship between DP and empathy, and there was a moderately positive correlation between PA and empathy of Nurses in Affiliated Hospitals, Kunming Medical University, the P. R. China.

Methodology

The sample size for this descriptive correlational study was 365 nurses, calculated according to the formula of Yamane (1973) and add 20% of attrition rate. Total of 438 questionnaires were distributed to the subject worked in four Affiliated Hospitals of Kunming Medical University using stratified proportional sampling method. Only 368 of completed questionnaires were returned for analysis. The inclusion criteria of the subjects included: 1) nurses who work in seven clinical departments: Medical Department, Surgical Department, Obstetrics and Gynecology Department, Pediatric Department, Intensive Care Unit, Emergency Department, and Outpatient Department; 2) nurses having at least one year of working experience in her

/his hospital; 3) nurses providing direct nursing care to patients. The exclusion criteria of the subjects included: 1) nurses who are nurse administrators, 2) nurses on maternity leave, sick leave, or in continuing education.

Research Instruments

Research instruments included: 1) demographic data form developed by the researcher, 2) the Chinese version of the Jefferson Scale of Empathy-Health Profession (JSE-HP) was translated by An, Yang, Jian, Song, & Qiu (2008), original JSE-HP was developed by Hojat et al., (2002). It included three factors with 20 items, it was measured on a 7-point rating scale. Items from 11 to 20 were reverse scored (Strongly agree = 7, Strongly disagree = 1); Items from 1 to 10 were scored directly (Strongly agree = 1, Strongly disagree = 7). Three factors include: Perspective Taking (2 items), Compassionate Care (8 items), Standing in the Patient's Shoes (10 items). A total score is the sum of all items scores. The scale's scores can range from a minimum of 20 to a maximum of 140, higher scores indicated a greater degree of empathy, based on Best and Kahn (2003), it was classified into three levels: low(20.00-60.00), moderate(60.01-100.00), and high(100.01-140.00). 3) The Chinese version of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) developed by Maslach et al. in 1996. It consisted of three subscales: Emotional exhaustion (EE) (9 items), Depersonalization (DP) (5 items), and Personal accomplishment (PA) (8 items). A total of 22 items with 7-point rating scale to measure the frequency of feelings and anchored from 0 (never) to 6 (every day). The scores for

each subscale are evaluated separately instead of adding them up. The mean score of burnout in each subscale was categorized into three levels: EE: low(≤ 16), moderate(17-26), and high(≥ 27); DP: low(≤ 6), moderate(7-12), and high(≥ 13); PA: low(≥ 39), moderate(32-38), and high(≤ 31). The internal consistency and reliability of the instruments were pretested with 30 nurses within one of the affiliated hospitals used in the study with the same criteria as the subjects at the study settings. The Cronbach's alpha coefficient of JSE-HP was .97, the Cronbach's alpha coefficient of MBI-HSS was .84 for EE, .77 for DP, and .85 for PA.

Ethical consideration

The study was approved by the Research Ethics Review Committee, Faculty of Nursing, Chiang Mai University. Permission to collect data was obtained from the directors of each tertiary hospital. All subjects were informed about the objectives and methods of this study and notified about the right to refuse or withdraw this study at any time without being penalized or losing any benefits. The package of questionnaires included an information sheet, a research consent form, the questionnaires and two envelopes were distributed to the subjects. Confidentiality and anonymity of each subject was guaranteed.

Data Analysis

The level of burnout and empathy were used descriptive statistics by the frequency, percentage, mean and standard deviation. Data on empathy and burnout were tested for normality distribution, and results showed non-normal distribution. Thus, Spearman's Rank order

coefficient was analyzed to examine the relationship between each dimension of burnout and empathy.

Results

1. Almost all of the subjects (94.29%) were female, and average age of the subjects was 32.31 years old (SD=7.22) with a range of 21-57 years. Nearly half of the subjects (54.89%) were aged between 21-30 years old and approximately 68.75% were married. Most of the subjects holding a bachelor degree (83.96%). Years of experience of the subjects ranged from 1-36

the average year of experience of the subject was 10.40 years (SD=8.29) and 66.58% worked less than 10 years. The largest group of the subjects (66.30%) worked on rotating shifts. About 38.04% of the subjects worked in surgical department.

2. As shown in Table 1, the subjects perceived three dimensions of burnout include emotional exhaustion, depersonalization and personal accomplishment at moderate level (\bar{X} = 25.92, SD = 11.16, and (\bar{X} = 32.52, SD = 8.01 respectively)

Table 1 Mean, Standard Deviation, and Level of Burnout in Each Dimension as Perceived by the Subjects (n = 368)

Subscale of burnout	Mean	SD	Level
Emotional Exhaustion	25.92	11.16	Moderate
Depersonalization	8.58	6.56	Moderate
Personal Accomplishment	32.52	8.01	Moderate

3. As shown in Table 2, the subjects perceived empathy at a moderate level (\bar{X} 99.60,

SD = 18.85).

Table 2 Mean, Standard Deviation, and Range of Empathy as Perceived by the Subjects (n = 368)

Empathy	Mean	SD	Minimum	Maximum	Level
Overall	99.60	18.85	32	130	Moderate

4. As illustrated in Table 3, there is no relationship between EE and empathy (r = -.09, p > 0. 05), a moderately negative relationship

between DP and empathy (r = -.32, p < .01), and there was a moderately positive correlation between PA and empathy (r = 0.36, p < .01).

Table 3 Relationship between each Dimension of Burnout and Empathy as Perceived by the Subjects (n = 368)

Burnout	Empathy
Emotional Exhaustion	-.09
Depersonalization	-.32**
Personal Accomplishment	.36**

Note: **p < 0.01

Discussion

1. The burnout of nurses in Affiliated Hospitals, Kunming Medical University, the People's Republic of China.

The result of this study showed that nurses experienced EE at a moderate level ($\bar{X} = 25.92$, $SD = 11.16$) (Table 1). It was consistent with the results of two previous studies in China conducted by Luo (2011) and Wang (2009), also similar to a study in Vietnam by Dinh (2013). This may due to the evolution of China's health care system, the role of nurses was multiplied (Jiang, 2009). Moreover, the needs for better-quality health care is also increasing in China (Wang, Rao, Wu, & Liu, 2013). Thus, nurses are required to provide high-quality care to meet the needs of patients, thus further increasing the workload of nurses (Maxime, Xue, & Emmanuel, 2009). Nurses who working affiliated hospitals of KMU not only take on clinical care, but also do research and teaching. As a result, nurses spend less time directly caring for patients, increase the workload of nurses, and exhaust their emotional and physical strength. However, the result of this study was inconsistent with the results of study conducted by Li

(1996) in Xi'an, which reported that nurses experience high level of EE may be because of different hospitals, welfare treatment and their personal workloads. However, nearly half of the nurses in Li's study were from military hospitals (Li, 1996), and nurses working in military hospitals have more pressures that lead to higher emotional exhaustion. Additionally, objective factors from the development and enlargement of the healthcare system recently, such as the technologically advanced equipment and the increasing of nursing staff, reduce the workload of nurses, fortunately, the hospital recently has issued several new policies that empower nurses. This regulation would lead them feel more interested and satisfied with their profession. Consequently, nurses in this study had moderate level of EE.

The result of this study showed a moderate level of DP among the nurses ($\bar{X} = 8.58$, $SD = 6.56$) (Table 1). It was consistent with the results of previous studies conducted by Li (1996), Luo (2011), and Dinh (2013). However, it was higher than results found by Wang (2009). This may be because of different settings and different subjects. As the largest tertiary hospital in

Yunnan, the affiliated hospitals of KMU, there are many patients with more complex and critical condition, a lot of heavy work tasks and work pressure for nurses. Moreover, 66.30% of the subjects worked on rotating shift, Liu, Zhao, Li, & Liu (2014) showed that the level of DP of nurses who often work night shifts is higher than that of nurses who often work in the day shift. On the other hand, nurses in affiliated hospitals of KMU get benefits from hospitals' policy. Demir, Ulusoy, & Ulusoy, (2003) indicated that the level of DP will be decrease when the nurses get more benefits. That is, all nurses working in hospitals are covered by Urban Employee Basic Medical Insurance Scheme, Child-bearing female nurses enjoy a five-month paid maternity leave. Meanwhile, hospitals also offer a free physical examination service to nurses every year. In addition, the worker committee often organized many kinds of activities to enhance staff's living. Above activities can enhance nurses' enthusiasm toward working.

The result of this study showed that nurses had a moderate level of burnout in PA dimension ($\bar{X} = 32.52$, $SD = 8.01$) (Table 1). It was consistent with the result of the study conducted by Wang (2009) and Dinh (2013). One possible explanation was that influenced by Chinese history and culture, nurses in the affiliated hospitals of KMU are considered as assistants and followers of doctors (Pu, 2010). Nursing is still seen as a simple, repetitive and practical operation rather than a profession (Chan & Wong, 1999). Lack of professional recognition has a great impact on PA (Lee & Akhtar, 2007). However, it was higher than findings found by Luo (2011). According to

the hospital policies, the hospital managers praised and encouraged nurses who had innovation of the job at the end of each year. This kind of praise and encouragement can be used to promote the PA of the nurse (Wang, 2009).

2. The empathy of nurses in Affiliated Hospitals, Kunming Medical University, the People's Republic of China.

The results of this study showed that nurses perceived empathy was at moderate level ($\bar{X} = 99.60$, $SD = 18.85$) (Table 2), the finding was inconsistent with the result of the study by Zhong & Liu (2012) in China. Additionally, Mckenna et al (2012), Kesbakhi, Rohani, Mohtashami, & Nasiri, (2017), and Fields et al. (2004) found that empathy among undergraduate nursing students and nurses were at high level. However, the results of this study was consistent with the result of the study of Zhou, Wang, & Yang (2011) in China. There are some problems with nurses' ideas, focus on technical operation, while neglecting psychological care to patients (Qi, Hou, Gu, & Chang, 2011). Most nurses have no formal nursing empathy training, plus heavy work and family chores, which leads to that the patient's emotions are ignored and nurses could not fully think about the problem from the perspective of patients (Yang & Shi, 2012). In addition, Yunnan is a highly diverse terrestrial region, with rich ethnic customs and different nationalities, it might be a weakness for nurses to be more flexible to deal with the various people from the different social and cultural background with various kinds of emotions or status (Liu & Lu, 2013). Another reason might be that nurses' demographic

factors, such as educational level and gender. An et al. (2008) showed a positive relationship between educational level and empathy. In this study, 83.96% of nurses hold bachelor degree far exceeds than who hold diploma (0.82%) or associated degree (14.13%). In addition, 94.29% of nurses in this study were female. According to foreign research results, female nurses are more empathic than male nurses (Hojat et al., 2002). Therefore, the results of this study showed that nurses perceived empathy was at moderate level.

3. The relationship between burnout and empathy of nurses in Affiliated Hospitals, Kunming Medical University, the People's Republic of China.

The study found DP had moderately negative relationship with empathy ($r = -.32, p < 0.01$) (Table 3). This means nurses with high level of DP will demonstrate a low level of empathy. According to Ferri et al. (2015), suggesting that a high level of DP could represent a defense mechanism to avoid emotional contact with patients and, subconsciously attempting to protect themselves by lacking empathy for the patient, ultimately, nurses' reduced empathy. The PA was positively correlated to empathy at a moderate level ($r = .36, p < .01$) (Table 3). This result implies if nurses have a high level of PA then the level of empathy could be high. The result of this study was consistent with previous study of Yuguero et al. (2017). When nurses took good care of patients by themselves, the patients were recovered and they felt more achievement, the perception of their sense of accomplishment will be higher.

It urges nurses to learn to pay attention to others, thinking from the perspective of others, understanding the problem, can distinguish between self-view and other people's views, to view things rationally and objectively, and to virtually increase self-satisfaction and self-worth (Wang et al., 2015). However, this study found that there was no significant correlation between EE and empathy perceived as perceived by nurses ($r = -.09, p > 0.05$) (Table 3). It was different from the study of Ferri et al. (2015). The results showed that the moderate level of empathy among nurses was not directly related to the increase or decrease of EE, but it indicated that the influence of nurses' empathy level came from other factors too not just EE. On the other hand, it may be related to the "Quality Care Service Demonstration Project" carried out by the hospitals in recent years, which enables nurses to care patients with enthusiasm and empathy even though they are feeling exhausted.

Conclusions and Implications

The results of this study indicated that subjects perceived empathy at a moderate level, and each subscale of burnout at a moderate level. The study found DP had moderately negative relationship with empathy, the PA was positively correlated to empathy at a moderate level, however, there was no significant correlation between EE and empathy perceived as perceived by nurses.

The results of this study could provide valuable information to hospital and nurse managers to develop a strategy to reduce emotional exhaustion and depersonalization,

which will lead to better empathy among nurses in their organizations to improve the level of empathy and take the necessary steps to reduce emotional exhaustion and depersonalization of nurses in Affiliated Hospitals of KMU.

Recommendations

Further research needs to replicate this study in different level of hospitals or in different area. The intervention that improves personal accomplishment in future research, such as the

ratio of nurse and patient, reduce workload, and set up nursing knowledge training program. In addition, it is recommended that interventions to reduce burnout be reviewed and that results be measured and evaluated.

Acknowledgement

Sincere appreciations are express to the Director and head nurses of the affiliated hospitals, and to all subjects in this study.

Reference

- An, X. Q., Yang, H., Jian, P. X., Song, L. P., & Qiu, C. (2008) Compilation and evaluation of Jefferson empathy scale. *Nursing Research*, 22, 8A.
- Astrom, S., Nilsson, M., Norberg, A., & Winbald, B. (1990). Empathy, experience of burnout and attitudes towards demented patients among nursing staff in geriatric care. *Journal of Advanced Nursing*, 15, 1236-1244.
- Bauchat, J. R., Seropian, M., & Jeffries, P. R. (2016). Communication and empathy in the patient-centered care model-Why simulation-based training is not optional. *Clinical Simulation in Nursing*, 12(8), 356-359.
- Best, N., & Kahn, J. V. (2003). *Research in education* (9th ed.). Boston: Pearson Education.
- Chan, S., & Wong, F. (1999). Development of basic nursing education in China and Hong Kong. *Journal of Advanced Nursing*, 29(6), 1300-1307.
- Demir, A., Ulusoy, M., & Ulusoy, M. F. (2003). Investigation of factors influencing burnout levels in the professional and private lives of nurses. *International Journal of Nursing Studies*, 40, 807-827.
- Dinh, T. Q., Orn-Anong, W., & Raymoul, N. (2013). Nursing practice environment and burnout among nurses in central general hospitals, The Socialist Republic of Vietnam. *Nursing Journal*, 40(4), 150-161.
- Draper, D. A., Felland, L. E., Liebhaber, A., & Melichar, L. (2008). The role of nurses in hospital quality improvement. *Research Brief*, 3, 1-8.
- Ferri, P., Guerra, E., Marcheselli, L., Cunico, L., & Di Lorenzo, R. (2015). Empathy and burnout: An analytic cross-sectional study among nurses and nursing students. *Acta Bio-Medica De L'ateneo Parmense*, 86(Supple. 2), 104-115.

- Fields, S. K., Hojat, M., Gonnella, J. S., Mangione, S., Kane, G., & Magee, M. (2004). Comparisons of nurses and physicians on an operational measure of empathy. *Evaluation & the Health Professions, 27*(1), 80-94.
- Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self-care. *Journal of Clinical Psychology, 58*, 1433-1441. doi:10.1002/jclp.10090
- Hojat, M., Gonnella, J. S., Nasca, T. J., Mangione, S., Vergare, M., & Magee, M. (2002). Physician empathy: Definition, components, measurement, and relationship to gender and specialty. *American Journal of Psychiatry, 159*(9), 1563-1569.
- Jiang, A. L. (2009). *Nursing theories* [in Chinese]. Beijing: People's Medical Publishing House.
- Kesbakhi, M. S., Rohani, C., Mohtashami, J., & Nasiri, M. (2017). Empathy from the perspective of oncology nurses. *Journal of Compassionate Health Care, 4*(1), 7.
- Lee, H., Song, R., Cho, Y. S., Lee, G. Z., & Daly, B. (2003). A comprehensive model for predicting burnout in Korean nurses. *Journal of Advanced Nursing, 44*(5), 534-545.
- Lee, J. S. Y., & Akhtar, S. (2007). Job burnout among nurses in Hong Kong: Implications for human resource practices and interventions. *Asia Pacific Journal of Human Resources, 45*(1), 63-84
- Li, X. M. (1996). *Job stressors and burnout among staff nurses in four urban Chinese teaching hospitals* (Unpublished master's thesis). Chiang Mai University, Thailand.
- Liu, W., Zhao, J., Li, F. Y., & Liu, J. W. (2014). A survey on nurses job burnout in a 3A-level comprehensive hospital. *Journal of Xinjiang Medical University, 37*(6), 802-805.
- Liu, Y., & Lu, Y. M. (2013). Investigation and analysis of stressors of clinical nurses under new situation [in Chinese]. *Medical Information, 26*(6).
- Luo, Y. F. (2011). *Conflict management and burnout among nurses in university hospitals, the People's Republic of China* (Unpublished master's thesis). Chiang Mai University, Thailand.
- Madhu, K.C., Ratanawadee, C., & Thitinut, A. (2013). Organizational Culture and Turnover Intention among Nurses in University Hospitals, Kathmandu, Nepal. *Nursing Journal, 40*(2), 1-12.
- Maslach, C. (2003). *Burnout: The cost of caring* (2nd ed.). Cambridge, MA: Malor Books.
- Maslach, C., & Jackson, S. E. (1981) The measurement of experienced burnout. *Journal of Occupational Behavior, 2*, 99-113.
- Maslach, C., & Jackson, S. E. (1986). *Maslach Burnout Inventory Manual* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maxime, M., Xue, X., & Emmanuel, F. (2009). China's health system reform and medical education. *The Journal of American Medical Association, 302*(12), 1270-1271.

- McKenna, L., Boyle, M., Brown, T., Williams, B., Molloy, A., Lewis, B., & Molloy, L. (2012). Levels of empathy in undergraduate nursing students. *International Journal of Nursing Practice, 18*(3), 246-251.
- Omdahl, B., & Donnell, C. (1999). Emotional contagion, empathic concern and communicative responsiveness as variables affecting nurses' stress and occupational commitment. *Journal of Advanced Nursing, 29*(6), 1351-1359.
- Poghosyan, L., Clarke, S. P., Finlayson, M., & Aiken, L. H. (2010). Nurse burnout and quality of care: Cross-national investigation in six countries. *Research in Nursing and Health, 33*(4), 288-298. doi:10.1002/nur.20383
- Pu, Y. X. (2010). *Job characteristics and job performance among professional nurses in the university hospitals of Yunnan Province, People's Republic of China* (Unpublished master's thesis). Chiang Mai University, Thailand.
- Qi, X. H., Hou, D. Y., Gu, X. L., & Chang, X. D. (2011). Associations between job burnout and capacity for empathy of operating room nurses [in Chinese]. *Journal of Nursing Science, 26*(4), 56-58.
- Rothschild, B. (2006). *Help for the helper: The psychophysiology of compassion fatigue and vicarious trauma*. New York, NY: Norton Professional Books.
- Wang, C., Rao, K. Q., Wu, S. N., & Liu, Q. (2013). Health care in China: Improvement, challenges, and reform. *Chest, 143*(2), 524-531.
- Wang, T., Wang, W., Hong, J., Luan, B., Zhu, Y., & Wang, J. (2015). Subjective well-being and job burnout of clinical nurses: the role of empathy. *Chinese Nursing Management, 3*, 12.
- Wang, X. (2009). *Work empowerment and burnout among registered nurses in tertiary general hospital in Harbin, the People's Republic of China* (Unpublished master's thesis). Chiang Mai University, Thailand.
- Williams, C. A. (1989). Empathy and burnout in male and female helping professionals. *Research in Nursing & Health, 12*(3), 169-178.
- Yamane, T. (1973). *Statistics: An introduction analysis*. New York: Harper & Row.
- Yang, X., & Shi, R. F. (2012). Research status and prospect of empathy in nurses [in Chinese]. *Journal of Nursing Science, 27*(16), 86-89.
- Yang, Y., Wang, W. L., Pan, Q., & Hong, J. F. (2013). Empathy of clinical nurses and its influencing factors [in Chinese]. *Chinese Journal of Practical Nursing, 29*(25), 16-18.
- Yuguero, O., Forné, C., Esquerda, M., Pifarré, J., Abadías, M. J., & Viñas, J. (2017). Empathy and burnout of emergency professionals of a health region: A cross-sectional study. *Medicine, 96*(37), e8030. doi:10.1097/MD.00000000000008030
- Zhang, N. L., & Liu, M. L. (2012). Analysis of empathy ability of male nurses and female nurses [in Chinese]. *Chinese General Practice Nursing, 10*(12), 3446-3447.

- Zhong, L. M., & Liu, Y. S. (2012). Investigation of the empathy ability and its influencing factors of nurses in a Third Grade Class A Hospital [in Chinese]. *National Medical Frontiers of China*, 7(22), 95-96.
- Zhou, F. (2002). The development trend of nursing quality management in China. *Modern Nursing*, 10, 798-799.
- Zhou, Q. H., Wang, C. P., & Yang, Y. M. (2011). Investigation of empathic ability of nurses and its influencing factors. *Journal of Modern Nursing*, 17(15), 1762-1763.