

## **Title: Resilience among nursing student in clinical placement**

### **Abstract**

**Purpose:** To understand the mechanism of coping with resilience and its implications for the well-being of nursing students in the context of clinical placement.

**Design and Methods:** Twenty-nine final year baccalaureate nursing students from a university, who had been identified as having low resilience and high burnout, high resilience and low burnout, or high resilience and high burnout in the first phase of the study, participated in ten focus groups and one interview. A thematic analysis was adopted in data analysis.

**Findings:** Two main themes were identified from the interviews: stressors from aligning students' expectations with the demands of the clinical placement, and coping as a process of fitting into the ward culture. The students experienced stress from the practice demands of busy wards, striving for learning opportunities, and discovering the social rules. Use of self-regulation strategies such as reframing, conscious choice with a self-directed goal and perseverance are characteristics in coping among students with high resilience. External orientation and self-blame resulted in cognitive and psychological distress among students with high burnout. Students with high resilience and high burnout were able to maintain competency and reflect deeply on personal and professional issues despite the stress. Reflection facilitated self-awareness, which is essential to resilience. Preparing students to actively fit in using effective mechanisms for learning in the ward environment, and future studies on a resilience building intervention to develop self-awareness and resilience among nursing students at the personal and educational levels are recommended.

**Conclusion:** This study offers an understanding of the different manifestations (i.e. what) and mechanisms (i.e. how and why) of resilience in the process and outcomes of coping among nursing students with different profiles of resilience and burnout in the clinical placement.

Theoretical understanding of resilience under high stress reveals the need to have functional efficacy in addition to psychological distress as the outcome measure in future studies.

**Clinical significance:** Understanding students' expectations enhances the identification of stressors. Interventions to enable students to actively fit into the clinical environment, reflect, adopt self-regulation strategies, and make flexible use of personal resources and external support will boost students' resilience in their clinical placement.

## **Background**

Nursing work is demanding and can result in high levels of stress which may pose challenges to nurses' mental and psychological well-being (Santos, Barros, & Carolino, 2010). Students join the health care professions because of their wish to help others when they are in need.

While individuals can certainly grow and flourish through this altruistic experience, it can also cause suffering (McAllister & McKinnon, 2009). Nursing students are under considerable stress, especially during their clinical placement (Thomas, Jack & Jinks, 2012).

As such, there is increasing attention being paid to the issue of burnout among students.

Uncertainty (Killam & Heerschap, 2013), lack of professional knowledge and skills (Chan, So, & Fong, 2009), mistakes with patients (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012), workload, stress from teacher and nursing staff (Khater, Akhu-Zaheya, & Shaban, 2014), time constraints, inconsistencies, and lack of civility among health care staff (Wallace, Bourke, Tormoehlen, & Poe-Greskamp, 2015), and maintaining interpersonal relationships (Gidman, McIntosh, Melling & Smith, 2011) are all possible stressors. While attempting to cope with these stressors, nursing students can become substantially more distressed as they progress in their programs (Edwards, Burnard, Bennett, & Hebden, 2010). The emotional and cognitive stress involved with caring work can lead to further stress and burnout among students. Burnout is characterized by symptoms of emotional exhaustion and cognitive

impairment, such as memory loss and reduced problems solving ability (Rees et al., 2016). Problem solving, staying optimistic (Sheu, Lin, & Hwang, 2002), self-efficacy, control and seeking support are adaptive coping responses of nursing students in clinical placement while avoidance coping predicted burnout (Gibbons, 2010). However, the mechanism of how adaptive and maladaptive coping contribute to students' resilience and burnout is not yet understood.

The concept of resilience has evolved over time and its origins can be traced to the discipline of psychology in the 1970s (Thomas & Revell, 2016). Resilience is the ability of a person to recover, adjust or thrive following adversity (Hegney, Rees, Eley, Osseiran-Moisson, & Franics, 2015). It is a complex and dynamic phenomenon (American Psychological Association, 2016). Resilience among healthcare professionals has gained increasing attention globally. A review on resilience in health professions have identified individual factors (i.e. self-efficacy, hope, control) and contextual factors (i.e. colleague support, mentors), that can affect the resilience of nurses (McCann et al., 2013). Cognitive reframing, and 'toughening up' are some of the resilience building strategies used among nurses (Hart, Brannan, & De Chesnay, 2014). Integration and personal growth (Gillespie, Chaboyer, & Wallis, 2007) marked the positive evolving nature of resilience. The concepts of resilience in nursing students is in its infancy. Thomas and Revell (2016) conducted an integrative review and found that nearly all the articles on this topic had been published in the previous three years. Support, time and empowerment were factors affecting students' resilience. Recently, Rees et al. (2016) tested their model of psychological resilience among nursing students. Results of this quantitative study showed that self-efficacy, mindfulness and coping were all related to student burnout but that these relationships were mediated by resilience. Importantly, this study also found the choice of coping strategy to be particularly important for students who

are very high on the personality trait of Neuroticism. Specifically, utilizing active/adaptive coping (e.g. positive reframing of stressors) protected those students high on Neuroticism from burnout whereas those who utilized passive/maladaptive coping (e.g. venting) were particularly at risk of burnout. These are interesting findings that require further exploration. As this study was quantitative, it is essential to contextualize the findings in order to understand how student nurses with different levels of resilience and burnout, cope with the demands of clinical placements. To date, no studies have explored this phenomenon. This paper reports on the qualitative data collected in a larger study (Rees et al., 2016). The aim of this study is to explore the mechanism of coping utilized by nursing students with different levels of resilience and burnout in order to meet the demands of clinical placement.

## **Methods**

This is the second phase of a multi-phased study aiming to identify the conditions influencing the resilience of nursing students in their clinical placements (Rees et al., 2016). Qualitative data were collected through focus groups and one interview from nursing students of a university in Hong Kong. Inclusion criteria were a final year nursing students enrolled in a program leading to a registered nurse qualification in the study university, and who have completed or almost completed their final year clinical placement and participated in phase one of the study. Following the determination of the resilience and burnout profile of students based on quantitative findings in the first phase of the study, nursing students were purposively invited to interviews and divided into three groups: 1) high resilience and low burnout; 2) low resilience and high burnout; and 3) high resilience and high burnout. The last group was not included in our original plan but were identified from the quantitative data. No students were identified as having low resilience and low burnout. Ten focus groups and one individual interview were conducted among 29 undergraduate nursing students (i.e. 12 male

students and 17 female students; with ages ranging from 21 to 25) until data saturation was reached.

A research assistant sent emails to invite students to the focus groups. The principal researcher (SC) conducted all the interviews. An interview guide was developed with broad questions to understand: the nursing students' experience in their clinical placement; the conditions impacting their ability to be resilient; the strategies that they used to maintain resilience; and the outcomes. Interviews were digitally recorded and transcribed verbatim. A thematic analysis was adopted because it is compatible with the constructionist paradigm and allows epistemological flexibility in selecting an appropriate analysis structure grounded in the data (Braun & Clarke, 2006). Following the six phases outlined by Braun and Clarke (2006), SC familiarized herself with the data (phase 1) by reading and re-reading each of the interview transcripts. She then generated initial codes (phase 2) using the software NVivo 10 while reading all the transcripts again. A theoretical memo was written. Codes were collated into sub-themes and themes (phase 3). The first few interviews were analyzed independently by SC and one research assistant, who subsequently met and compared the themes and sub-themes until agreement was reached (Braun & Clarke, 2006). SC then continued to code and analyze the data based on those themes and sub-themes. Themes and sub-themes were reviewed and refined (phase 4), definitions and meanings were denoted (phase 5), patterns of coping were verified, and details were noted. The overall storyline was delineated. Finally, SC, with input from DH and CR wrote the report (phase 6) based on the research questions and reviewed the vivid quotations. Credibility was enhanced through peer debriefing on coding with the second researcher (KC). Keeping an audit trail ensured dependability and confirmability of the findings (Lincoln & Guba, 1985).

Ethical approval and permission to conduct the study were obtained from the study university before data collection. The researchers explained the purpose of the study and the principle of voluntary participation to the students prior to the interviews, using an information sheet. Each student signed a consent form and agreed to keep the interview content confidential. All the data and files were kept strictly confidential.

## Results

Two main themes were identified from the interviews: stressors from aligning students' expectations with the demands of the clinical placement, and coping as a process of fitting into the ward culture. Themes, sub-theme and related categories are summarized in Table 1.

Table 1: Summary of themes, sub-themes and related categories

Themes	Sub-themes	Related categories
Stressors from aligning expectations with demands of clinical placement	Keeping up with practice demands in busy wards	<ul style="list-style-type: none"> <li>• Nurses' expectations regarding speed and accuracy of students' practice</li> <li>• Diversity of practice</li> <li>• Optimizing patient care</li> </ul>
	Striving for learning opportunities	<ul style="list-style-type: none"> <li>• Learning as a second priority</li> <li>• Demonstrating competency</li> <li>• Working with mentors</li> </ul>
	Discovering the social rules	<ul style="list-style-type: none"> <li>• Maintaining a positive working relationship with ward staff</li> <li>• Lack of civility and criticism from the staff</li> </ul>
Coping as a process of fitting into the ward culture	Conforming to external demands (students with low resilience & high burnout)	<ul style="list-style-type: none"> <li>• Struggling to conform to requirements</li> <li>• Self-blame</li> <li>• Avoidance coping</li> <li>• Seeking social support for emotion ventilation</li> </ul>
	Conforming with self-directed principles (students with high resilience & low burnout)	<ul style="list-style-type: none"> <li>• Conforming with self-directed principles</li> <li>• Solving problems</li> <li>• Use of self-strategies</li> <li>• Seeking social support for advice and psychological support</li> </ul>
	Conforming to demands through self-comforting persuasion (students with high resilience & high burnout)	<ul style="list-style-type: none"> <li>• Conforming to demands through self-comforting persuasion</li> <li>• Self-blame</li> <li>• Use of self-strategies</li> <li>• Seeking social support for ventilating their emotions and sharing of thoughts</li> </ul>

### *Stressors from aligning expectations with the demands of clinical placement*

Students were allocated to hospitals for practice in order to increase their exposure and learning. Their expectations were found to have a significant influence on their perception of

stress. A student explained, 'The problems arise out of our perceptions and the demands that we put on ourselves. When we require ourselves to achieve a certain level and there is a discrepancy between our ideal and the reality, we feel the stress.' (IX1).

*Keeping up with practice demands in busy wards*

*Meeting the expectations of nurses regarding the speed and accuracy of practice* was commonly stated by students. Students often worked as 'runners' in the ward, providing routine nursing care to patients. Owing to the high admission rate and the complexity of patient care, the workload was sometimes very heavy. One student explained, 'I could not finish all the work even if I had three heads and six arms. But they ask why I have failed to do so.' (VIII2). Students often placed expectations on themselves to 'work fast' (IX1), 'make no mistakes' (IX3), 'not interrupt or hinder the nurses' work' (VII2), 'not miss any tasks' (V1), and 'help the nurses' (I3). Meeting the demands of working fast in a new and unfamiliar environment added to their stress (VIII1). *Diversity of practice among different hospitals and the school* was another source of stress. A student said, 'The same procedures can be practiced in ten different ways in ten hospitals. I was blamed for practicing what I had learnt in the previous hospital.' (II). The nurses' requirement of strict adherence to their way of practice also resulted in stress. One student exclaimed, 'I believe it is fine as long as the principles of care are not violated. However, the nurse had strict requirements for every step of the nursing procedures. I was frightened.' (III1). *Optimizing patient care* was one of the concerns raised by the students. Students expected themselves to 'have adequate knowledge and skill to provide care' (VIII1), 'report patients' change in condition promptly' (IX2), 'meet patients' needs' (II2), and most importantly 'do no harm to patients.' (IV2). Students' stress was triggered when they were required to take care of patients needing complex care such as ventilators (VII2), when patients were terminally ill (VII1), and when students had difficulty

applying their learning because of limitations in space, time and resources in clinical settings (VIII1). Students said, ‘I asked myself, “Is it good for the patient if we do the dressing in this way?”’ However, I was powerless to change the practice in that hospital.’ (VIII2).

#### *Striving for learning opportunities*

A majority of the students indicated that *learning was a second priority* when compared with assisting in routine work in the ward, ‘The majority of the staff view students as additional manpower to complete the basic care. Some mentors may not provide much guidance. This is not what I expected.’ (XI1). In order to increase their opportunities to learn, students adopted strategies such as learning from the staff when they were not busy (IX3), and staying behind after the shift to read patients’ case notes (XI4) and following the nurses and observed (XI2).

*Demonstrating competency of knowledge and skills* was a key concern of most students (IX2).

Another student said, ‘My mentor expected me to have mastered certain skills and knowledge, but I failed to apply what I had learnt. I was very frustrated.’ (X1). Clinical assessment was a significant trigger of stress among students because of the lack of predictability in the clinical environment (VI1) and uncertainty about the requirements of the assessor (IV1). Some students had difficulty in *working with some mentors*, ‘You have to know where the line is drawn and put demands on yourself so as to meet the standard.’ (III2).

#### *Discovering the social rules during clinical placement*

Students were concerned about *maintaining a positive working relationship with ward staff*. Nursing students entered the wards with expectations of being able to work as members of the team (III2). Students learnt the implicit rules by following the instructions of the nurse (III1), taking the initiative in offering help (VII1), addressing the staff by name (X3) and maintaining harmonious relationships (III2). Students said, ‘I reported any abnormality of

patients in my previous placements but nurses got annoyed when I do so in this placement. We have to meet their requirements.’ (II2); and ‘If we are polite and have a good relationship with the healthcare assistants, they will give us a lot of practical tips at work.’ (IX2). Students observed the nurses’ responses for hints on their performance and the right time to communicate with them (VIII1). Some students encountered difficulties from *lack of civility and criticism of the staff*, ‘I was not fast enough. They rejected me.’ (XI1); ‘I was embarrassed as the nurse spoke loudly when pointing out my problem...They tell other nurses when we do something wrong.’ (IX3).

### *Coping as a process of fitting into the ward culture*

Depending upon their resilience and burnout scores, (i.e. low resilience and high burnout, high resilience and low burnout, and high resilience and high burnout), researchers noted that the focus and orientation of coping were different among the three groups. Focus refers to the things that were the focus of students’ attention, and it varied from focusing on coping to focusing on problems. Orientation refers to the inclination of the students, and it varied from self-directed orientation to an external orientation that targeted the demands of people or events in the clinical placement. The process of nursing students’ fitting into the ward culture had implications for their personal and professional well-being as the outcome (Table 1).

### *Conforming to external demands: students with low resilience and high burnout*

When facing the stressors, the coping of nursing students with low resilience and high burnout was characterized by focusing on problems and adopting an external orientation. They often focused on the anticipated problems and appraisal of the situation as stressful. One student said, ‘A few weeks before placement, I was so worried about how I was going to adapt to the new environment, making mistakes, lacking familiarity, and being blamed by

others.... I cried. I don't know why but I just felt sad.' (IX3). Together with adopting an orientation towards external demands and lacking a reference point of self, students were busily engaged in meeting the many demands in the complex and dynamic context of the clinical placement, which were often beyond their control and difficult to meet. They were preoccupied or even immobilized by the disturbing emotions that affected their daily life and performance. Students described their *struggle to conform to the requirements*: 'I was under stress from the beginning of the placement. It was on my mind 24 hours a day. My mentor reminded me that I had much room for improvement, so I kept on evaluating my progress until I was so down that I did not want to do anything. I thought I was not good enough and I cried. I blamed myself as I expected myself to improve.' (VIII1). 'I went to the changing room, and it was hard to get there even though it was not far.' (VIII1). *Self-blame* had further reinforced their negative anticipation and undermined their confidence. *Avoidance coping* was a strategy used by students, which included 'hiding on the sidelines and keeping silent' (IX3) and 'letting the problem pass as time went by' (III1). One student said, 'I did not respond when other people asked me about my placement. I absolutely did not want to think about it.' (VIII1). To relieve the intense worry, some adopted diversional strategies such as sleeping (VII2), browsing the Internet (VIII1), and washing their hands (IX2), and *seeking social support* by sharing in the hopes of being understood, and by ventilation (VIII2). The *outcome of coping* of students with low resilience and high burnout was denoted by *loss of engagement in nursing professionally and lack of vitality personally*. One student said, 'I considered quitting the program because my confidence was very low.' (VII2), and 'I hid at home after my placement. I was too exhausted to contact others.' (VII2).

*Confirming with self-directed principles: students with high resilience and low burnout*

When facing the stressors, the coping of nursing students with high resilience and low burnout was characterized by focusing on coping and adopting an orientation guided by self-directed principles. This limited the scope of issues to be coped with, and enabled the students to manage the demands. As a student explained, ‘When someone says I do not know a simple thing, I think of a way to do it better instead of blaming myself for doing so badly... this is important.’ (I1). Students with high resilience and low burnout coped by *conforming with self-directed principles*, they balancing the external demands and self-directed principles, and adjusting their expectations. *Problem solving* was the most frequently used coping strategy. Student stated ‘When I face a new problem, I always try to solve the problem, think of a way to comfort myself, consider an alternate plan, and seek help from someone to solve the problem.’ (XI1). ‘Some staff complained that I worked slowly. I believed it would do the patients good if I followed the principle of care, so I tried to work properly and faster at the same time.’ (I3); ‘If I have done something wrong, I apologize to the nurse and go back to revise my mistake with no hard feelings.’ (VI1). ‘It is important to understand our strengths and know our limits. However, we should set our standard and work to that standard.’ (I4). The process required much mental flexibility, self-understanding and self-efficacy on the part of the students. In order to sustain their coping without too much cognitive or psychological disturbance, they *used self-strategies* to comfort and support themselves, and most importantly to find meaning in the experience. Students said, ‘Encountering problems during placement is normal. We need to know how to enjoy each placement instead of being forced to do it.’ (I1); and ‘I believe the nurses give me feedback because they care about me and want me to improve.’ (I1). Students’ personal beliefs and passion for nursing were other sources of sustaining force. Students said, ‘I remind myself that all problems can be overcome and will be over at some point.’ (III1); ‘Nothing can make me give up.’ (VI1); and ‘I like

what I am doing in my placement. This helps me to keep going.’ (I3). *Social support* from fellow students, senior students, teachers, family and friends was important for seeking advice and support (I3). They also engaged in relaxation activities such as listening to music (VI1). Lack of time to think because of a busy schedule were mentioned to be a barrier to coping. The *outcome of coping* of students with high resilience and low burnout was denoted by *satisfaction in nursing professionally and high self-awareness personally*. Students said, ‘I enjoy what I am doing now. I believe I am preparing myself to provide good nursing care in future.’ (II); and ‘I was not afraid of the strict mentor. I would not worry all the time.’ (III1).

*Conforming to demands through self-comforting persuasion: students with high resilience and high burnout*

When facing stressors, the coping of nursing students with high resilience and high burnout was characterized by focusing on coping and adopting an external orientation. A student explained how she had *conformed to the external demands*, ‘I perceived that the nursing procedures there were different but I needed to follow them. I was upset.’ (X1). Conforming had resulted in psychological and cognitive disturbance and even *self-blame*. Students with high resilience and burnout used many *self-strategies to persuade and comfort themselves*, identify meaning out of the experience, sustain in coping, and be relieved of their disturbing emotions and thoughts much more quickly than students with low resilience. One student said, ‘I told myself, “If I can survive this challenge, I will be invincible.”’ (X3). Another comforted himself and let go even though the mentor had strict requirements on him, ‘She is a good mentor; I am not angry with her any more. I learned a lot.’ (X2). Adjusting one’s own thinking and expectation was the key to coping with the demands. One student said, ‘There is a saying in Chinese that the best person to untie the bell is the one who tied it. If I explain things to myself in another way, they may appear different.’ *Social support*, especially from

teachers and fellow classmates, was important for ventilating their emotions (X3), sharing their thoughts and collecting suggestions on coping (X2). The *outcome of coping* of students with high resilience and burnout was denoted by *passion for nursing professionally and endurance personally*. As a student said, ‘We should provide the best possible care to patients and make judgments based on moral standards. This is the autonomy of the nursing profession. A nurse’s work is very meaningful. I find my passion in nursing’ (X2); and ‘There is a saying that ‘iron must be tempered to become steel’ We grow up through repeated training and discipline.’ (X2).

## **Discussion**

The aim of this study was to better understand the mechanism of coping utilized by nursing student to meet the demands of clinical placement. The key finding emerging from this study is stressors aroused from aligning students’ expectations with the demands of the clinical placement, and coping as a process of fitting into the ward culture. Students with different burnout and resilience profile used different coping mechanisms which had implications on their outcomes.

Clinical learning is an indispensable and important part of nursing education. In this study, stressors arose when nursing students had difficulty in fulfilling the expectations they brought into their clinical placement. Discrepancies between students’ expectations and reality have been found in previous studies (Chan & Ip, 2007; Thomas et al., 2012). Stress arises when there is non-acceptance of an event with a perceived impact on that to which we have attached. The greater the desire, the harder it is to maintain this critical sense of control (Johnson & Johnson, 2010). Uncertainty has been identified to further increase student stress in the clinical placement (Helgesen, Gregersen, & Roos, 2016). Therefore, mechanisms to

enhance the students' understanding of their own expectations for their clinical placement is crucial to identifying potential sources of stress. Participants in this study reported facing stressors in clinical placement which echoed the difficulties encountered by nursing students in previous studies as discussed before. Routine care and case management are integrated components of patient care. However, students focus primarily on completing activities of daily living and other routine care of patients may be frustrated at being unable to learn more complex skills for patient care such as critical thinking or reasoning in an evolving situation (Ironside, McNelis, & Ebright, 2014). The importance of interpersonal relationships and teamwork is comparatively less emphasized in the extant literature, especially as part of the preparation of clinical placement (Levett-Jones & Lathlean, 2008). However, in this study, this was found to be a significant sources of stress for the students.

Fitting into the ward culture was a key theme in this study and it was found in previous studies to be important if nursing students were to be accepted by ward staff (Thomas et al., 2012), be part of the teams, make the clinical placement less stressful (Holland, 1999). In order to improve the likelihood of acceptance and inclusion by the nursing staff, students adapted the team's values and norms rather than challenging them (Levett-Jones & Lathlean, 2009), caught up with 'getting the job done' and felt compelled to work hard (Levett-Jones & Lathlean, 2008). The major finding of this study is that depending upon their profile of resilience and burnout, nursing students used different coping strategies.

When facing stressful events during their placement, students with low resilience and high burnout were preoccupied with deficiency (i.e. focusing on the problem), which resulted in an overemphasis of the barriers contributing to the increase in their stress (Larrabee et al, 2010). A focus on coping enabled high resilience students to manage the demands and limited their

cognitive and emotional disturbance. Students with low resilience tended to conform to external demands (Wén, 1995) and sacrifice their needs. The strong social orientation of Chinese people makes it difficult at times for them to abstract themselves from the interpersonal demands of a situation (Gabrenya, & Hwang, 1996 in Bond). However, students who adopted a self-directed orientation in this study were aware of their own limitations and potential, had a sense of responsibility and an active attitude. This contributed to their adaptive coping and high resilience. *Self-regulation* and self-awareness was another distinguishing characteristic of students with high resilience. When compared with students with low resilience, they used much more self-strategies with the objectives of comforting, sustaining themselves, and most importantly of finding meaning in the experience. When compared with students with high resilience and low burnout, students with high resilience and high burnout used more self-persuasion strategies to buffer the increased cognitive and psychological distress, enable them to face the challenges and sustain their coping. Self-regulation in the form of reframing, conscious choice based on self-directed goals and persistent support by self-efficacy are key elements in adaptive coping with resilience despite adversity (Stephens, 2013). *Self-awareness* refers to the ability to separate oneself from a situation and reflect (Rees, Breen, Cusack, & Hegney, 2015). Students with high resilience and low burnout were able to detach themselves from the problem. Reflection is the key to enhancing self-awareness and self-knowledge. Challenges, changes, and disruption are all aspects of adversity that should be noted before the process of resilience can occur (Earvolino-Ramirez, 2007). A specific and unique type of self-strategy used by students with high burnout is self-blaming. It increases psychological disturbance and reduces students' confidence in their ability to cope. Self-blame and avoidance coping contributed to the maladaptive coping of students with low resilience and high burnout. Social support in the

forms of acknowledgment of progress, support in learning, emotional support, and problem solving were described by all students as an important source of support.

Research focused on *process of resilience* aims to understand the mechanisms or processes that act to modify the impact of a risk setting (Rutter, 2007). As revealed in this study, students' expectations, their focus and orientation of coping, self-regulation, self-awareness and social support are factors influencing the resilience of the nursing students. Studies commonly defined *resilience outcomes* in terms of good mental health, functional capacity, and social competency (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003). Functional competency, namely satisfaction and passion for nursing, self-awareness and endurance, are the distinguishing outcomes of high resilient students with high or low burnout. Resilience does not imply an invulnerability to stress but an ability to recover from adversity.

Maintaining competence despite significant negative affect may be demonstrating the highest form of resilience (Olsson et al., 2003). The findings of this study added details to the Nursing Student Resilience Model proposed by Stephens (2013). The expectations of students themselves and the demands of the clinical placement characterized the 'perceived adversity'. 'Protective factors' included self-regulation and social support. 'Effective coping' outcomes including functional efficacy and well-being in the personal and professional dimensions. The findings also supported Rees's (2016) model that self-efficacy, mindfulness and choice of coping strategies were related to students' resilience and burnout.

### **Implications**

The findings of this study provide some insight into nursing students' mechanism for coping, depending upon their level of resilience and burnout, and its implications for outcomes in the context of clinical placement. Students with high resilience demonstrated self-knowledge,

accepting limitations from themselves, recognizing the stressors and putting strategies in place that were associated with resilience and self-nurturing. Reflection on all these elements and students' perception of stressors and expectations is the key to enhancing self-awareness and self-knowledge. Support that enables students to adjust their expectations, reframes the experience by identifying meaning out of it, facilitate the flexible use of internal and external resources such as social support, allows time for self-reflection and self-care will be helpful in enhancing students' resilience. Resilience building strategies should be included in the undergraduate nursing curriculum.

To promote an active 'fitting in' of students to the clinical environment, briefing and debriefing sessions in which faculty encourage students to share their experience and feelings, bridge the gap between their expectations and reality, and provide feedbacks on clinical practice are recommended. Preparing them to apply their learning and prioritize their work in a busy ward environment, arranging protected time for them to learn patient care under the coaching of clinical mentors, and equipping them with communication and interpersonal skills for integration into teamwork are recommended to reduce the impact of stressors. Providing a desirable clinical learning environment through collaboration between faculty and clinical staff and encouraging open communication will motivate students to learn and develop relationships with team members.

As found in this study, resilience individuals show adaptive coping, regardless of the distressing emotion. Theoretical understanding of resilience under high stress reveals the need to have functional efficacy in addition to psychological distress as the outcome measure in future studies. Further studies on the support required by students and interventions to promote their resilience is recommended.

## **Limitations**

The participants on this study were recruited from one university in Hong Kong.

Consideration should be taken before applying the findings to other students, particularly with a different cultural background. A prospective instead of cross-sectional approach may be more sensitive in identifying the students' change in their coping and resilience across time. Further verification of the mechanism of resilience coping including associated factors and outcomes is necessary.

## **Conclusion**

Nursing students are the carers for future patients and the basis of the future nursing workforce. Resilience is an important quality to develop so as to assist them to cope with the demands of learning and practicing on clinical placement and at the same time maintain their well-being. The new knowledge generated by this study is that students with different burnout and resilience profiles use different coping mechanisms when faced with the stressors of clinical placement. Self-regulation and self-awareness, which can be enhanced by reflection, are essential to resilience. Preparing students to actively fit in through open communication and protected time for learning is suggested. It is recommended that future studies be conducted on the intervention to develop resilience among nursing students, and taking functional efficacy and psychological well-being as outcome measures.

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