**Information for scales**

*1. Self-Efficacy*

Self-efficacy (SE) was measured by the General Self-Efficacy (GSE) scale as previously detailed (Schwarzer 1992). GSE scale is designed to measure the emotional stress and ability to deal effectively stressful situations. It is composed of 10 itemized questions that are answered on a 6-point Likert-type scale ranging from strongly disagree (score 1) to strongly agree (score 6). In this study, we set the Cronbach coefficient alpha as 0.80 to reflect the data validity and reliability as described previously (Godin et al. 2014).

*2. Quality of Life*

Quality of life (QoL) was measured by the Medical Outcomes Study Short Form 8 (SF-8). SF-8 is a valid quality of life survey that covers the same eight domains of the SF-36 but in a shorter (eight question) form (Turner et al, 2003). The domains covered by the SF-8 survey include: physical function, limitations due to physical health problems, bodily pain, general health, energy/fatigue levels, social function, limitations due to emotional problems, psychological distress and mental well-being. The score of pain domain ranges from 1 to 6, while scores of the other domains range from 1 to 5. Higher scores represent better physical state and mental state. The reliability of SF-8 is supported by Cronbach coefficient alpha as 0.80. The validity of SF-8 among medical students was established previously (Derby et al. 2010).

*3. Depression*

The Patient Health Questionnaire-9 (PHQ-9) is a valid self-administered 9-item scale that indicates depression symptoms. (AdAway et al. 2006; Sob wales et al. 2014). PHQ-9 has 9 questions involving: core symptoms of depression (anhedonia and depressed mood), suicidal tendency (suicidal thoughts), physical symptoms (trouble sleeping or concentrating, feeling tired, changes in appetite, feeling slowed down or restless) and the feeling of guilt or worthlessness over the past two weeks. The score of each question can be: " not at all “(zero points); "several days " (one point); " more than half the days " (two points); and " nearly every day " (three points). Scores more than one in the core symptoms of depression or suicidal tendency indicate depression symptoms. Medical students scoring < 5 points were diagnosed with no signs of depression (less than 5 points), scores between 5 to 9 points indicate mild degree of depression, scores between 10 to 14 points indicate moderate degree of depression and 15 to 19 points indicate moderately severe degree of depression while scores> 19 points indicate severe degree of depression. The reliability in our study is supported by Cronbach coefficient alphas as 0.80. In the current study, depression was defined as the PHQ-9 scale score > nine points.

*4. Burnout*

Maslach Burnout Inventory (MBI) is a valid and widely used standard survey to measure burnout (Derby et al. 2012; Derby et al. 2010; Thomas 2004). The validity of MBI as a burnout scale among medical students has been confirmed previously. Burnout has 3 criteria: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). MBI is a 22-items scale that includes all three domains (the score range of EE is 0-54, the score range of DP is 0-30 and the score range of PA is 0-48) through a 7-point Likert scales indicating the frequency level. We utilized scores from each domain as continuous variables and as high scores using the previously established cutoffs (Maslach C., 1996). Medical students that scored ≥ 27 in the EE scale or ≥ 10 in the DP were identified as having at least one manifestation of professional burnouts. As established previously, the reliability is supported by Cronbach coefficient alphas for the EE, DP and PA were 0.89, 0.78 and 0.81, respectively (Maslach C 1996). The validity of our model is supported by the observed relationships between burnout and suicidal thoughts (Derby et al. 2008), dropping out (Derby et al. 2010), and low empathy (Thomas et al. 2007) among medical students.

*5. Empathy*

Empathy is fundamental element of the medical profession. We measured empathy by the Jefferson Scale of Empathy-Health Care Provider Student version (JSE-HPS) that included a 20--items survey answered on a 7-point Likert scale Student were required to score each item according to the level of agreement (from 1 = strongly disagree to 7 = strongly agree) in less than 10 minutes. Ten items were negatively worded with reverse score. The total JSE-HPS score ranges from 20 to 140, with higher score values indicating higher degree of empathy (Chen et al. 2007). The validity of the JSE-HPS has been detailed previously (Hoja et al. 2002).