Assessing rumination response style among undergraduate nursing students: A construct validation study

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SUMMARY

Background: Rumination is one of the risk factors for mental health problems among nursing students. Rumination refers to repetitive thoughts focusing on negative emotions. There is a need to use an appropriate instrument to detect rumination to prevent the development of emotional problems. The ruminative response scale (RRS) is an instrument widely used to assess rumination levels in adult populations. It is inconclusive if the scale can be used for younger people like nursing students.
Objectives: This study aimed to examine the psychometric properties of the 10-item ruminative response scale (RRS-10) in undergraduate nursing students.
Design: A cross-sectional research design was used.
Settings: This study was undertaken at one of the universities in Thailand.
Participants: A sample of 747 undergraduate nursing students was recruited.
Method: Data were collected through a self-administered questionnaire, containing the 10-item RRS and Thoughts, Feelings and Experiences Questionnaire, and personal information. Exploratory/confirmatory factor analyses and correlational analyses were performed to test the construct and concurrent validity of the RRS respectively. Cronbach's alphas were used as parameters for the internal consistency reliability.
Results: The RRS-10 had two distinct factors: brooding (moody pondering) and reflection (analysing depression-relating situations). Adequate model fit indices were obtained and significant factor loadings were observed, indicating acceptable construct validity. These two factors had significant correlations with emotional distress, depression, anxiety, and hopelessness, supporting concurrent validity of the scale. Cronbach's alphas were 0.71 and 0.73 for the brooding and reflection factors respectively, suggesting good reliability.
Conclusion and recommendation: The RRS-10 demonstrated satisfactory psychometric properties. Therefore, it can be used to assess rumination response style among undergraduate nursing students in Thailand. Future research can test the scale on nursing students or youths in other countries.

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Introduction

Rumination is one of the cognitive vulnerability variables in the Response Style Theory of Depression. Rumination refers to repetitive and passive self-focused thoughts revolving around individuals' negative emotions and depression (Nolen-Hoeksema, 1991). Evidence indicates that rumination is a significant predictor of depression, anxiety, hopelessness, and psychological distress (Nolen-Hoeksema et al, 2008; Smith et al., 2006; Thanoi et al., 2010). In addition, two studies reported the relationship between rumination and suicidal ideation (Smith et al., 2006; Thanoi et al., 2010). To minimise the risks of the

emotional problems and suicidal ideation, it is essential to use an appropriate tool to early detect rumination.

Background

Undergraduate nursing students around the world are at risks of emotional problems (such as depression) (Klainin-Yobas et al., 2013; Pryjmachuk and Richards, 2008; Thanoi et al., 2012; Watson et al., 2008). Stress may contribute to such emotional problems given that nursing students generally encounter numerous stressors. Research has shown that younger nursing students encounter stress relating to their adolescence developmental stage (such as biological and hormonal changes) (Paperny, 2011) and academic stress (such as long study hours) (Burnard et al., 2008; Elcigil and Sari, 2007; Gorostidi et al., 2007; Hakojarvi et al., 2014; Pryjmachuk and Richards, 2007). Some students may ruminate over such stressful experiences, leading to emotional problems, depression, and suicidal ideation, the most serious

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consequence of rumination (Thanoi et al., 2010). Hence, there is a need to detect rumination levels among nursing students so that timely interventions can be provided to this population (Thanoi et al., 2012). The ruminative response scale (RRS) is the most widely used tool to assess individuals' rumination levels (Nolen-Hoeksema and Morrow, 1991).

The RRS was developed based on the Response Style Theory of Depression (Nolen-Hoeksema and Morrow, 1991). Within this theory, there are three main response styles: rumination, problem solving and distraction. People who are ruminating are fixated on their problems and associating negative feelings without taking actions. Rumination increases the risk for depression and other emotional problems via three mechanisms (Nolen-Hoeksema, 1991). Firstly, it enhances the recall of negative memories and pessimism. Secondly, it hinders an effective problem-solving process. Lastly, rumination inhibits instrumental behaviours and therefore reducing individual's sense of control (Nolen-Hoeksema, 1991).

The RRS was developed as part of the Response Style Questionnaire and the original RRS had 22 items (RRS-22) capturing three components: self-focused, symptom/depression-focused and cause/consequence-focused thoughts (Nolen-Hoeksema and Morrow, 1991). A major criticism of RRS is that items concerning symptom/depression-focused thoughts overlap with measures of clinical depression. This might explain a spuriously high correlation between the RRS-22 and measures of depression. Subsequently, Treynor et al. (2003) modified the RRS-22 by removing such overlapping items, resulting in the 10-item RRS (RRS-10). Following factor analyses, two emerging factors of the RRS-10 were labelled Reflection and Brooding (Treynor et al., 2003). The former suggests a purposeful thought to find ways to alleviate one's depressive symptoms whereas the latter indicates a passive thought to compare persons' current situation with some unrealistic standard (Treynor et al., 2003). The RRS-10 is perceived to be easier to use, less time-consuming to complete, less burden on participants, and more economical than the RRS-22.

A screening tool requires acceptable psychometric properties such as construct validity, concurrent validity, and reliability. Construct validity refers to the extent to which the scale captures the underlying construct it is supposed to measure (Streiner and Norman, 2008). Factor analyses can provide evidence to support the construct validity (Streiner and Norman, 2008). Concurrent validity is supported by correlation coefficients between the scale and other gold standard measures (Streiner and Norman, 2008). Psychometric properties of the RRS-22 have been established in English-speaking individuals (Luminet, 2004). Furthermore, the scale has been cross-validated in Japanese (Ito and Agari, 2002), Dutch (Raes et al., 2003), and Turkish samples (Baker and Bugay, 2012). Nevertheless, such cross-validation is limited for the RRS-10 and it is unclear if the scale will be useful for people in other countries like Asian adolescent samples (such as undergraduate students). This indicates a knowledge gap in the existing literature.

Study Aims

Consequently, this study aimed to examine psychometric properties (construct validity, concurrent validity, and internal consistency reliability) of the RRS-10 on Thai undergraduate nursing students. Two emerging research questions were: a) what is the factorial structure of the RRS-10? and b) Is the scale correlated with other standardized measurements?

Guided by the Response Style Theory of Depression and previous empirical evidence (Treynor et al., 2003), the first hypothesis addressed that the scale would display the two-factor structure: Reflection and Brooding and the two emerging factors would have acceptable reliability. Theoretically, rumination is postulated to have a positive association with various emotional problems. Therefore, the second hypothesis stated that the RRS-10 (the measure of rumination) would significantly correlate with the measure of emotional distress (depression, anxiety, and hopelessness). Positive findings from this study might suggest that the RRS-10 is a valid and reliable tool to screen rumination levels among undergraduate nursing students.

Methods

Research Design

A cross-sectional research design was used to test the psychometric properties of the RRS-10. The research design enabled assessments of the scale validity, the conceptual structure, and reliability (Grove et al., 2013).

Target Population and Sample

The target population included nursing students who are enrolled in the four-year undergraduate programme (Nursing and Midwifery) at a university in Thailand. Both male and female nursing students were eligible regardless of their academic year. No exclusion criteria were set as the researchers aimed to recruit all students. During the recruitment period, there were approximately 1200 enrolled nursing students. Following the ethics approval, the investigators seek permission from the Dean to collect data on nursing students. Subsequently, the investigators scheduled out-of-class meetings with groups of nursing students to provide information about the study, allow time to answer questions they may have and request for their participation. Interested students were requested to sign a consent form, complete a self-reported questionnaire, and then submit it to the investigators.

Ethical Consideration

This study obtained the ethics approval from the Internal Review Board (IRB) of the university. According to the IRB, participants were required to sign a consent form before completing the questionnaire. The investigators emphasized the issues of voluntary participation (i.e., students were not obligated to taking part in the study and there would be no penalty for non-participants) and anonymity during the data collection. To protect the identity of the study participants, they were advised not to write their personal information on the questionnaire. Furthermore, the signed consent forms were kept separately from the completed questionnaires and there were no links between the two documents. Therefore, it was not possible to trace back to participants.

Variables and Measurements

Data were collected using anonymous self-reported questionnaires that take about 20 min to complete. The questionnaire contained information listed below.

Rumination was measured with the RRS-10 (Treynor et al., 2003). Participants were asked to rate on four response categories ranging from "never/almost never" (1) to "always/almost always" (4). Possible scores are in the range of 10–40 with higher scores signifying higher levels of ruminative response style. On a sample of elderly living in communities in the USA (n = 1328), factor analyses revealed that the scale had two main factors: Reflection and Brooding (Treynor et al., 2003). Cronbach's alphas were 0.60–0.72 for the Reflection factor and 0.62–0.77 for the Brooding factor (Treynor et al., 2003). The RRS-10 was translated into Thai language using Brislin's (1986) translation method. Particularly, a nurse educator specialized in mental health nursing translated the scale into Thai and another nurse educator back-translated the Thai version into English. Next, the two versions were examined for semantic and content equivalence by five native English speakers.