

Research Proposal

Research title:

Effects of Expressive Writing on Stress and Work-Related Outcomes among Student Nurse Interns: a randomized controlled trial

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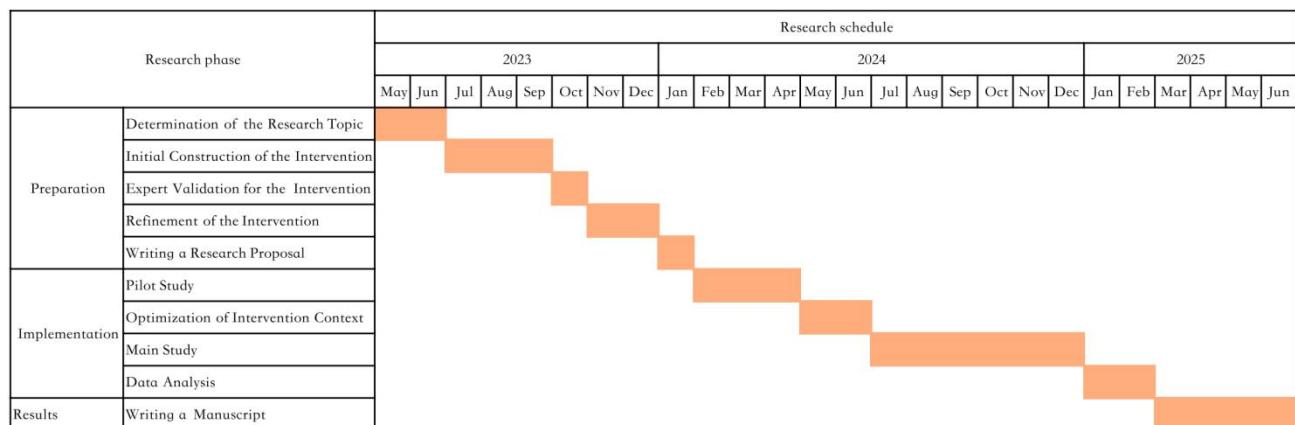
October 17th, 2023

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Funding sources:

Supported by the Program for the Philosophy and Social Sciences Research (PSSR) of Higher Learning Institutions of Shanxi, China (Project No.: 2023W103)

Research schedule:**Ethical Review:**

The Ethics Committee of Changzhi Medical College approved the study protocol on October 17, 2013, registration number RT2023047.

1. Introduction

Nursing internships are essential to nursing programs and a crucial stage in the early careers of nursing students. Those seeking hands-on experience in hospitals or medical facilities are known as student nurse interns. The clinical learning experience is considered a significant source of stress. The

stress level of nursing students during clinical practicum ranges from moderate to severe, affecting 47.82 to 100% of participants.

Stressors in the clinical setting included discrepancy between theory and practice, feeling unprepared, fear of making a mistake, issues related to death and dying, witnessing suffering, challenging interpersonal relationships with clinical staff, being observed and evaluated, communication with physicians, conflict between personal life and internship tasks, and unfamiliarity with the hospital environment. The rapid evolution of healthcare brings new stressors for nurses and nursing students. Health professionals often play down or deny mental health problems, which exacerbates the problem.

Stress not only affects the well-being of student nurse interns but also impacts job satisfaction and can lead to turnover in nursing. The stress of student nurse interns can affect motivation, communication, learning, clinical practice, and academic performance, which can be detrimental to patients. The American College Health Association (ACHA) and the Chinese Ministry of Education have taken steps to promote student mental health. Academic institutions actively conduct mental health research to develop effective strategies and programs.

Stress management interventions (SMI), non-pharmacological approaches to managing psychological and physical stress, show promise in reducing stress among nursing students. Although SMIs have demonstrated efficacy, more studies on senior students and Chinese student nurse interns are needed.

According to the transactional model of stress and coping proposed by Lazarus and Folkman, the three targets of effective stress management are stressors, coping strategies, and cognitive reappraisal. The stressor refers to any event or internal or external environmental stimulus that can be perceived

by an individual and elicit a positive or negative stress response; the coping strategy refers to the process by which an individual deals with internal or external demands that are perceived as stressful or exceed the resources of the individual; cognitive reappraisal is the method of changing an individual's evaluation of the stressor and self-defeating perception of stress.

Expressive writing (EW) is a form of writing therapy (WT) introduced by James Pennebaker in 1986. It enables individuals to express important emotional events they have experienced, to write down their deepest feelings and thoughts, and to find positive meaning in advert events. Following the transactional model of stress and coping, EW encompasses all three targets of stress reduction (using stressors as a writing topic, writing as a form of coping, and cognitive reappraisal during the writing process). At the same time, its simplicity, cost-effectiveness, brevity, and low expertise requirements make EW an easily accessible intervention method.

As there are few studies on the effectiveness of EW with student nurse interns, this study aims to investigate the efficacy of expressive writing in managing stress and work-related outcomes in student nurse interns, which may provide a valuable new approach.

2. Research Questions

- Is there any difference between the four repeated (at immediate, 4-week, 8-week, and 12-week follow-up) clinical practice stress tests between the intervention and control group in terms of the mean?
- Is there any difference between the four repeated (at immediate, 4-week, 8-week, and 12-week follow-up) coping strategy tests between the intervention and control group in terms of the mean of positive coping and negative coping?

- Is there any difference between the four repeated (at immediate, 4-week, 8-week, and 12-week follow-up) work engagement tests between the intervention and control group in terms of the mean?
- Is there any difference between the four repeated (at immediate, 4-week, 8-week, and 12-week follow-up) perceived professional benefit tests between the intervention and control group in terms of the mean?

3. Research Objectives

General objective:

Evaluate the impact of expressive writing (EW) intervention on stress and work-related outcomes among Chinese student nursing interns

Specific objectives:

- To compare the effectiveness of EW (expressive writing) and NW (neutral writing) in managing clinical practice stress among student nurse interns between intervention and control groups at immediate and 4-week, 8-week, and 12-week follow-up.
- To compare the impact of EW and NW on improving coping strategies among student nurse interns between intervention and control groups at immediate and 4-week, 8-week, and 12-week follow-up.
- To evaluate the effectiveness of EW and NW in promoting work engagement between intervention and control groups at immediate and 4-week, 8-week, 12-week follow-up.
- To compare the impact of EW and NW on promoting perceived professional benefit among student nurse interns between intervention and control groups among student nurse interns at immediate and 4-week, 8-week, and 12-week follow-up.

4. Study Design

A randomized controlled trial with parallel design.

5. Inclusion and Exclusion Criteria of Participants

Inclusion criteria:

- Undergraduate student nurse interns in their first clinical internship (had no prior clinical practice experience)
- Have access and proficiency in utilizing social media
- Be able to read and write via the internet
- Be willing to fill in questionnaires and write according to the assigned writing prompts
- Never participated in an expressive writing or stress management intervention programs

Exclusion criteria:

- Intern at a self-contacted hospital
- Severe current psychological conditions
- Undergoing any form of psychotherapy
- With a habit of keeping diaries

Withdrawal criteria:

- Termination of internship for whatever reason
- Not submitting writing materials twice

6. Sample Size

Using the sample size formula for comparing the means of two independent samples of continuous variables to calculate the sample size.

$$n_i = 2 \left(\frac{Z_{1-\alpha/2} + Z_{1-\beta}}{ES} \right)^2$$

$$ES = \frac{|\mu_1 - \mu_2|}{\sigma}$$

To detect between-group differences with an effect size of 0.69 in clinical practice stress by Stress Rating Scale for Nursing Students in Practice after 10 weeks of intervention (primary outcome), with an α level of 0.05, we require 33 participants per group to attain a power of 80%. Accounting for an expected 10% loss to follow-up, we should include 74 participants.

7. Sampling and Grouping

All eligible student nurse interns in the four target hospitals constituted the sampling frame. Two of the four target hospitals will be selected by lottery and the intervention and control groups will be determined by a coin toss.

Participants will be sampled for both the intervention and control groups using the following method: all potential participants were entered alphabetically into Column A of the Excel sheet from A to Z. Then, random numbers will be generated in column B of the Excel sheet using the Rand() function. The 37 participants with small random numbers will be included as study participants in both groups.

A research assistant who will not be involved in other parts of the study completed all the above processes.

8. Blinding

This is a single-blinded randomized controlled study.

The intervention trainer will not be blinded, given that a single researcher conducts the study. To minimize experimenter bias, outcome assessments will be conducted through an online questionnaire survey platform (Wenjuanxing), with the trainer distributing the same link to all participants. During data

collection, only acronyms of the questionnaires will be used to avoid self-fulfilling expectations.

Participants will be informed during the recruitment phase only that the study aimed to explore the effect of writing on internship experience and feelings. Assignment to the intervention or control group will remain undisclosed to participants until the end of the 3-month follow-up.

Participants could unblind themselves by exiting the study and requesting debrief information.

9. Intervention Description

Intervention group:

According to the writing prompts, online expressive writing focuses on stressful events and will be conducted twice a week (every Monday and Thursday) for 15 minutes each time, lasting for ten weeks.

Writing prompts are developed based on Emotional Processing Theory (EPT) and Cognitive Adaptation Theory (CAT).

- 1st writing/Monday:

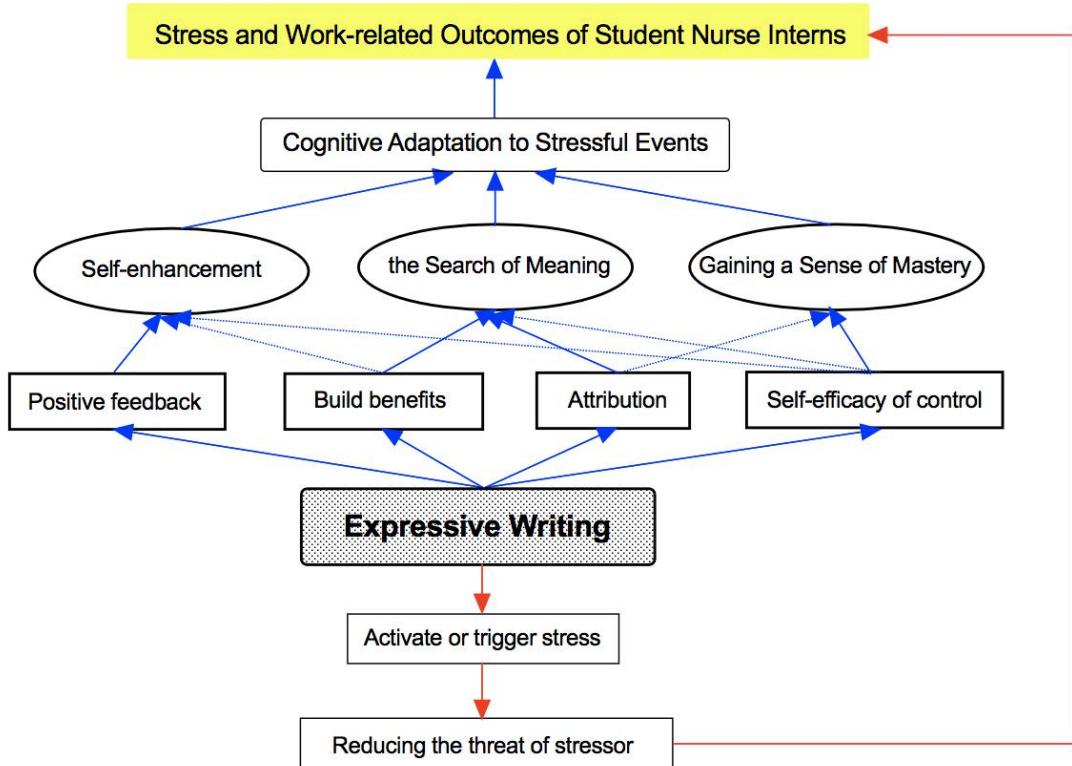
Describe the distressing/stressful event (like workload, lack of break/leisure time, knowledge proficiency, patient care, interpersonal communication, role adaptation...) with causal links between the event's segments; describe your thoughts and feelings at the time of the event; describe what you did to keep the event under control.

In your writing, I'd like you to let go and explore your deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives; to your past, your present, or your future; or to who you have been, who you would like to be or who you are now. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing, you continue until the time is up.

- 2nd writing/Thursday:

Reflect on how the event you wrote about in your first writing of this week affected your life (any gains or growth); how you currently think and feel about the event; whether or not you are grateful it did not get worse; where do you

Cognitive Adaptation Theory (CAT)



Emotional processing theory (EPT)

feel you did well in this coping; future coping with a similar event.

In your writing, I'd like you to let go and explore your deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives; to your past, your present, or your future; or to who you have been, who you would like to be or who you are now. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing, you continue until the time is up.

Control group:

According to the writing prompts, online neutral writing focuses on immediate surroundings and will be conducted twice a week (every Monday and Thursday) for 15 minutes each time, lasting for ten weeks. Writing prompts are as follows:

- 1st writing/Monday:

Describe the specified object (from week one to week ten, specify the specified object as "the door you see now", "your hairstyle", "the pants you are wearing", "the room you are in", "your hands", "the shoes you are wearing", "the view from the window", "the clothes you are wearing", "your water bottle" and "your phone/computer").

In your writing, concentrate on the facts and details of the activity and thing you chose. We are not interested in your emotions or opinions, rather we want you to try to be completely objective. Feel free to be as detailed as possible.

- 2nd writing/Thursday:

Describe the specified object in the picture (from week one to week ten, provide pictures of the door, hairstyle, pants, room, hands, shoes, view from a window, clothes, water bottle, and computer).

In your writing, concentrate on the facts and details of the activity and thing you chose. We are not interested in your emotions or opinions, rather we want you to try to be completely objective. Feel free to be as detailed as possible.

To ensure the effectiveness of online writing, we developed a webpage suitable for the program. Participants can write from their computers or mobile devices. When a participant goes to the web page, the first page will be the instructions. This page shown before the writing tasks described the main objective of each task, emphasizing the importance of carefully reading the instructions. After reading the instructions, participants fill in their unique number and click on the "start writing" button. Then it will turn to the second

page for writing. There will be a countdown clock on this page, with the remaining time for the task. The clock flashed when one minute remained. When the time expires, the writing page will automatically close and display the final text. At this point, no editing was possible, but participants could read their texts.

10. Outcome Measures

All measures will be taken one day before the start of the intervention, one day after the end of the intervention, and followed up at 4 weeks, 8 weeks, and 12 weeks after the end of the intervention.

Primary outcome: Clinical Practice Stress

Stress Rating Scale for Nursing Students in Practice

The scale consists of 6 dimensions and 37 entries, including the nature of work, workload, preparation for an internship, interpersonal relationships, work support, and learning and work impulse. The scale rates on a 4-point Likert scale, with no stress, mild stress, moderate stress, and severe stress, assigned a score of 0, 1, 2, and 3, respectively, and the higher the score, the greater the stress.

Secondary outcome: Coping Strategy, Work Engagement, Perceived Professional Benefit

Brief Coping Style Scale

The scale consists of two dimensions, positive and negative coping, with 20 entries. A 4-point Likert scale is used, with 1-4 indicating "not used" to "often used". Positive coping has 12 entries, and negative coping has 8 entries, with higher scores indicating more frequent use of coping strategies.

Utrecht Work Engagement Scale

The scale consists of 3 dimensions: vitality, dedication, and concentration, comprising 15 entries. A 7-point Likert scale is used, with scores ranging from 0-6 for "never," "almost never," "rarely," "sometimes," "often," "frequently," and "always." The total score is the sum of the scores of each entry. An average entry score of 4 or more is defined as a high level of work engagement, 2-4 as a moderate level, and less than 2 as a low level of work engagement.

Perceived Professional Benefits Scale

The scale consists of 7 items of positive career sense, 6 items of good nurse-patient relationship, 6 items of sense of belonging to the team, 8 items of self-growth, and 6 items of identification with friends and relatives, 33 items in 5 dimensions in total, and each item is scored 1 to 5 on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree. The higher the score, the stronger the perceived professional benefit.

11. Data Analysis

Data will be analyzed with Stata version 14. All endpoints will be analyzed with generalized estimating equations and will use robust standard errors. The working correlation structure will be specified as exchangeable.

Data from all available time points will be used. The independent variables included in the model will be the treatment group (categorical) and the baseline value of the dependent variable (continuous). A model that additionally adjusted for age and sex for the primary endpoint will run.

The primary endpoint and secondary endpoints will all be analyzed with an intention-to-treat approach.

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