

Effect of high-quality nursing on alleviating depression and anxiety in patients with thyroid cancer during perioperative period

A protocol for systematic review

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Abstract

Background: This study will assess the effect of high-quality nursing (HQN) on alleviating depression and anxiety (DA) in patients with thyroid cancer (TC) during perioperative period (PPP).

Methods: We will search the following electronic databases (MEDLINE, EMBASE, PsycINFO, Cochrane Library, CINAHL, Web of Science, CBM, WANGFANG, and CNKI) from inception to the present and other literature sources without language limitation. All potential randomized controlled trials reporting on effect of HQN on DA in patients with TC during PPP will be considered for inclusion. Two researchers will separately carry out study selection, data extraction, and study quality evaluation. Any different opinion will be solved by a third author through discussion. All statistical analysis will be performed by RevMan 5.3 software.

Results: We will appraise the effect of HQN on DA in patients with TC during PPP through assessing outcomes of depression, anxiety, pressure, quality of life, and adverse events.

Conclusion: This study will provide evidence to determine whether HQN is effective or not on DA in patients with TC during PPP.

OSF registration: osf.io/sb5r8.

Abbreviations: CIs = confidence intervals, DA = depression and anxiety, HQN = high-quality nursing, PPP = perioperative period, RCTs = randomized controlled trials, TC = thyroid cancer.

Keywords: anxiety, depression, nursing, thyroid tumor

1. Introduction

Thyroid cancer (TC) is a very common endocrine malignancy,^[1–3] which is characterized by different biological and clinical features.^[4–6] It is also the leading cause of mortality and morbidity around the world.^[7–8] It consists of 4 subtypes of papillary thyroid cancer, follicular thyroid cancer, medullary thyroid cancer, and anaplastic thyroid cancer.^[9–11] It accounts

for 3.4% of all diagnosed cancers globally each year.^[12] Treatment of TC comprises of medication, radiotherapy, chemotherapy, and surgery.^[13–18] Many patients are reported to experience depression and anxiety (DA) during the perioperative period (PPP).^[19–23] Luckily, studies suggested that HQN can help relieve this disorder.^[24–26] However, no systematic review has explored this issue. Thus, this study firstly evaluates the effect of HQN on DA in patients with TC during PPP.

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The authors report no conflicts of interest.

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

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2. Methods

2.1. Study registration

We have registered this study on OSF (osf.io/sb5r8). It is reported according to the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols standards.^[27]

2.2. Eligibility criteria

2.2.1. Type of studies. This study will include randomized controlled trials (RCTs) of HQN on DA in patients with TC during PPP. We will exclude animal study, review, comment, case report, case series, observational study, uncontrolled study, and quasi-RCTs.

2.2.2. Type of participants. We will include patients (over 18 years old) with TC who were diagnosed as depression and/or anxiety without restrictions of race and sex.

2.2.3. Type of interventions and controls. In the experimental group, HQN as the intervention was used for the management of DA in patients with TC during PPP.

In the control group, any management could be used as comparator, such as conventional treatment, or placebo. However, we will exclude combined therapy with any forms of HQN.

2.2.4. Type of outcomes. The primary outcomes include depression (e.g., Hamilton Depression Scale) and anxiety (e.g., Hamilton Anxiety Scale).

The secondary outcomes comprise of pressure, quality of life, and any adverse events.

2.3. Search strategy

Two researchers will search the electronic databases (MEDLINE, EMBASE, PsycINFO, Cochrane Library, CINAHL, Web of Science, CBM, WANGFANG, and CNKI) from inception to the present without language and publication status restrictions. All potential RCTs examining the effect of HQN on DA in patients with TC during PPP will be included. The detailed retrieval strategy of MEDLINE is built in a Table 1. We will modify this retrieval strategy to other electronic databases.

Additionally, we will also retrieve other literature sources, such as conference proceedings, bibliography lists of associated review, and ongoing trials from website of clinical trial registration.

Table 1
Search strategy for MEDLINE.

Number	Search terms
1	thyroid
2	papillary
3	follicular
4	medullary
5	anaplastic
6	cancer
7	carcinoma
8	tumor
9	depression
10	anxiety
11	psychological disorder
12	Or 1-11
13	surgery
14	operation
15	nursing
16	care
17	high quality
18	advanced
19	Or 13-18
20	randomized
21	randomly
22	random
23	controlled trial
24	clinical trial
25	control
26	concealment
27	blind
28	allocation
29	Or 20-28
30	12 and 19 and 29

2.4. Data selection and extraction

2.4.1. Study selection. Two researchers will independently carry out study selection. First, titles/abstracts of all searched studies will be screened to remove duplicated and irrelevant studies. Then, full text of all potential articles will be further identified against all inclusion criteria. If there are divergences between 2 researchers, we will invite a third researcher to solve them. The whole process of study selection will be exerted in a flow chart.

2.4.2. Data extraction. Two researchers will independently extract data using a data collection template. We will extract data of study information (title, first author, time of publication, location, et al), study characteristics (study design, study setting, sample size, study methods, et al), patient characteristics (race, sex, age, tumor types, inclusion and exclusion criteria, et al), interventions and controls (treatment types, dosage, duration, route of administration, et al), outcomes (primary and secondary outcome indicators, dropouts, follow-up information, et al), and conflict of interest. We will invite a third researcher to resolve any division. If any unclear or missing data occurs, we will contact primary authors to obtain it by email.

2.5. Assessment of risk of bias

The methodological quality of all included study will be appraised by 2 independent researchers according to the Cochrane Risk of Bias Tool. It covers 7 domains, and each one is judged as low, unclear or high risk of bias. Any divergence will be solved by a third researcher through discussion or consultation.

2.6. Statistical analysis

This study will utilize RevMan 5.3 software for statistical analysis. We will analyze outcome results of continuous data as mean difference (MD) or standardized MD and 95% confidence intervals (CIs), and of dichotomous data as risk ratio and 95% CIs. All statistical heterogeneity will be assessed using I^2 test. It is explained as follows: $I^2 \leq 50\%$ exerts reasonable heterogeneity, and we will select a fixed-effects model; $I^2 > 50\%$ indicates substantial heterogeneity, and we will choose a random-effects model. If reasonable heterogeneity is identified and sufficient data are collected from included studies, meta-analysis will be performed. On the other hand, if significant heterogeneity is found, we will perform subgroup analysis to explore its possible reasons. If there is still substantial heterogeneity after subgroup analysis, we will not pool the data. Instead, we will conduct a narrative analysis given the presence of significant heterogeneity.

2.7. Subgroup analysis

We will employ a subgroup analysis based on the different types of tumor, variations in study and patient characteristics, and differences in treatments and controls.

2.8. Sensitivity analysis

We will undertake sensitivity analysis to test the robustness and stability of merged outcome data by omitting studies with high risk of bias.

2.9. Reporting bias

If over 10 trials reporting the same outcome, we will carry out a funnel plot to examine potential reporting bias,^[28] and will

perform Eggers regression test^[29] to check funnel plot asymmetry.

2.10. Ethics and dissemination

No ethical approval is required for this study, because it will not collect individual patient data. We will publish this study on a peer-reviewed journal.

3. Discussion

Previous studies suggested that HQN can help relieve DA in patients with TC during PPP. With the increasing number of evidence supporting its effect on DA in TC during PPP, there is a need to pool evidence from eligible studies to accurately assess the treatment effect. This is the first comprehensive and systematic study to incorporate different outcome data into analyses. We will search as comprehensive as possible trials in both electronic databases and other literature sources to avoid losing potential studies. The results of this study may provide evidence to support the effect of HQN on DA in TC during PPP. However, this study may still have several limitations. First, the sample size of eligible trials may be small. Second, the quality of included studies may be poor. Third, the statistical heterogeneity across trials may be too high to synthesize the data. All those restrictions may affect the findings of this study.

Author contributions

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