November 21,2022

Dear Editor,

Please find enclosed the edited manuscript in Word format (File Name: 79619_Auto_Edited.docx) .

Title: Predictive value of the unplanned extubation risk assessment scale in hospitalized patients with tubes

Authors: Kun Liu, Zheng Liu, Lin-Qian Li, Meng Zhang, Xue-Xue Deng, Hong Zhu

Name of Journal: *World Journal of Clinical Cases*
Manuscript NO.: 79619

The manuscript has been improved according to the suggestions of reviewers: Revision has been made according to the suggestions of the reviewers.

(1)Reviewer: 06367185

Comment:1. Introduction should be rewritten.

Authors' response: Thank you very much for your comment. As required, we added part of the Introduction.

See Page:5;Lines:9-12 from the top and Page:5;Lines:15-29 from the top. The following sentences have been added [For patients with unplanned extubation events, 53.5% had adverse consequences[3], the reintubation rate was 28.3%-39.9%[5,9], and the in-hospital mortality rate was 26.4%-39.5%[5,9], significantly higher than those patients without unplanned extubation events.

So, an effective tool for risk assessment and management of unplanned extubation has become particularly important.

In recent years, a few researchers have developed several scales for the risk assessment of unplanned extubation[12-15]. Wang *et al*[12] used Delphi method and developed an unplanned extubation risk assessment tool for various

types of tubes and patients over 14 years old. However, the details of unplanned extubation were not reported, and the reliability and validity of the scale lacked the support of clinical data. Vats *et al*[13] developed a scoring tool for unplanned extubation risk, and tried in pediatric patients with endotracheal tubes. While the study did not report the reliability and validity of the scoring tool. Two researches[14,15] designed an assessment tool respectively for unplanned endotracheal extubaiton of artificial airway patients and hospitalized patients with various types of tubes based on literature review and Delphi method. Although the Delphi panel gave good comments, the significance in finding high-risk patients with unplanned extubation lacked clinical application.]

Comment:2. Methods should be more clarified.

Authors' response: Thank you very much for your comment. As required, we added part of the MATERIAL AND METHODS.

See Page:6;Lines:8-9 from the bottom and Page:7;Lines:2-16 from the top. The following sentences have been added [The departments included 41 internal medicine wards, 24 surgery wards, and 8 intensive care units.

An unplanned extubation event was defined as the tube falling off by itself, premature removal of the tube by patient or medical staff's improper operation[1]. The risk assessment of unplanned extubation was completed by nurses and recorded in the electronic medical record. Each nurse received training on the use of the unplanned extubation risk assessment scale. The risk assessment has been taken as the routine assessment in our hospital, and it is required to assess when inpatients have tubes or newly placed tubes during hospitalization.

The unplanned extubation risk scores were assessed by the HUERAS. The scale was formulated by the medical experts of the authors' institution based on the analysis of a large number of unplanned extubation events in the previous years of the medical institution, relevant literature reports on the development of unplanned extubation risk assessment tools, combined with

the research results of unplanned extubation risk factor assessment. The scale was developed after two rounds of Delphi expert consultation. The method of expert scoring was adapted for the assignment of each item, according to the importance and risk degree of the item.]

(2)Reviewer: 02489089

Comments: The only point I have to note is that 26 unplanned extubations are not really high enough to support all the results of your study based on your ststistical analyses, but: It's a beginning in research of that important topic. You only have to make very clear in your manuscript that your analysis based on a vulnerable number of unplanned extubations (MINOR REVISION).

Authors' response: Thank you very much for your comment. As required, we added a paragraph (named Limitations) in DISCUSSION.

See Page:12;Lines:1-8 from the bottom and Page:13;Lines:1-6 from the top. The following paragraph has been added [**Limitations**

Although this study was based on the risk assessment results of a large number of hospitalized patients with tubes, only 26 unplanned extubation events were actually reported, which was not really high enough to support all the research results based on statistical analyses in this study. Because the number of events were small compare to number of patients in the study, thus the fragility index was quite high. The possible causes, on the one hand, this study was concerned about the various types of tubes in patients, training nurses to conduct risk assessment could also improve nurses' attention to the prevention of unplanned extubation. Nurses also better performed the preventive measures of unplanned extubation, such as secondary fixation, effective communication between nurse and patient, pain and sedation management. On the other hand, the effect of reporting bias cannot be ruled out. But this was a good beginning in research of this important topic. In the follow-up research, the team will continue to conduct in-depth study on this topic.]

(3)Reviewer: 05826233

Comment:1. Regarding scoring method describe in Table 1. Emotional state can only get score of 1 OR 2, However, it appears that it can get more scoring but not sure on what basis.

Authors' response: Thank you very much for your comment. The Assignment score of the items were developed by Delphi expert consultation according to the importance and risk degree of the item. As required, we added some sentences in MATERIALS AND METHODS.

See Page:7;Lines:9-16 from the top. The following sentences have been added [The scale was formulated by the medical experts of the authors' institution based on the analysis of a large number of unplanned extubation events in the previous years of the medical institution, relevant literature reports on the development of unplanned extubation risk assessment tools, combined with the research results of unplanned extubation risk factor assessment. The scale was developed after two rounds of Delphi expert consultation. The method of expert scoring was adapted for the assignment of each item, according to the importance and risk degree of the item.]

Comment:2. No. of events are small compare to no. of patients in the study. Thus, fragility index is quite high. 1 or 2 less event could decrease validity of HUERAS.

Authors' response: Thank you very much for your comment. This is an objective situation in this study. So we added a paragraph (name Limitations) in DISCUSSION to illustrate.

See Page:12;Lines:1-8 from the bottom and Page:13;Lines:1-6 from the top. The following paragraph has been added [**Limitations**

Although this study was based on the risk assessment results of a large number of hospitalized patients with tubes, only 26 unplanned extubation events were actually reported, which was not really high enough to support

all the research results based on statistical analyses in this study. Because the number of events were small compare to number of patients in the study, thus the fragility index was quite high. The possible causes, on the one hand, this study was concerned about the various types of tubes in patients, training nurses to conduct risk assessment could also improve nurses' attention to the prevention of unplanned extubation. Nurses also better performed the preventive measures of unplanned extubation, such as secondary fixation, effective communication between nurse and patient, pain and sedation management. On the other hand, the effect of reporting bias cannot be ruled out. But this was a good beginning in research of this important topic. In the follow-up research, the team will continue to conduct in-depth study on this topic.]

Comment:3. Authors does not make attempt to describe the possible reason for differences between various extubation such as why possible explanation why it happens more during certain ward, time of the day etc. with references if available.

Authors' response: Thank you very much for your comment. As required, we reorganized the sentences and explained the characteristic data of unplanned extubation in this study, the time of day, different departments, etc., and cited the literature appropriately. So we revised and added some sentences in DISCUSSION.

See Page:10;Lines:1-6 from the bottom, Page:11;Lines:1-8 from the top and Page:11;Lines:12-14 from the top. The following sentences have been added or revised [Among the tube types, central venous catheter, urinary catheter, drainage tube, orogastric tube/nasogastric tube, and endotracheal tube accounted for 30.77%, 19.23%, 19.23%, 15.38%, and 11.54% of unplanned extubations, respectively. In addition, a patient had the gastric tube and drainage tube removed at the same time. Although previous studies have tended to focus more on patients with endotracheal intubation in ICU, these

data suggest that a larger number of patients with other types of tubes in the general ward also deserve our research and attention.

In terms of the occurence time, 73.08% unplanned extubation occurred in the evening (18:00-the next day 8:00), which was related to the lower nurse-patient ratio in the evening[4,9] and patients' confusion condition during sleep[23]. From the perspective of sex, males accounted for 84.62% of patients with unplanned extubation, which was consistent with previous studies[9,23] showing that male patients were more prone to unplanned extubation.

Patients with unplanned extubation were relatively seriously ill and were in a state of sedation, limited bed rest, or physical restraint[23].]

Thank you again for publishing our manuscript in the World Journal of Clinical Cases.

Sincerely yours,

Prof. Hong Zhu,
Department of Nursing/ West China School of Nursing,
West China Hospital, Sichuan University,
No.37 Guoxue Alley, Chengdu, Sichuan Province, 610041, China.
Email: zhuhong816@wchscu.cn
Phone number: +86 18980601372