

Assessment on Knowledge and Satisfaction Level of Delirium Video for Education in Geriatric Patients Undergoing Elective Noncardiac Surgery

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ABSTRACT

Objective: The aim of this study was to evaluate the knowledge level and patient satisfaction after receiving multimedia education on delirium developed by the Siriraj Integrated Perioperative Geriatric Excellent Research Center (SiPG), Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand in geriatric patients undergoing elective noncardiac surgery.

Materials and Methods: This randomized controlled study included geriatric patients scheduled for elective noncardiac surgery. The patients were randomized and categorized into an intervention group or a control group. The intervention group received multimedia education on delirium developed by SiPG, comprising a video. After watching the video clip, the patients took an examination for acute delirium, and were also asked to complete a satisfaction survey questionnaire. The control group took only the delirium examination. The average scores between the two group were compared by using independent t-tests.

Results: Fifty-four geriatric patients were included in the study (27 patients per group). The average score of the examination in the intervention group (6.56 ± 1.58 out of 8) was significantly higher than the control group (4.96 ± 1.65). In the satisfaction survey, all the patients stated they were “highly satisfied” with the multimedia video clip.

Conclusion: The multimedia video clip on delirium developed by SiPG has a potential to serve as an effective tool for promoting preoperative education in geriatric patients. Our study demonstrated its ability to improve patient knowledge and increase patient satisfaction.

Keywords: Multimedia education; delirium; preoperative education; geriatric patients (Siriraj Med J 2024; 76: 415-421)

INTRODUCTION

Delirium is an acute disorder characterized by alterations of attention, consciousness, and cognition.^{1,2} It is one of the major postoperative complications among geriatric hospitalized patients.³ The incidence of postoperative delirium (POD) has been reported to range from 10% to 50% in elderly patients.^{2,4,5} The risk factors associated with delirium include age (greater than 65 years old), pre-existing comorbidities (e.g., cardiovascular disease,

dementia, cognitive impairment, vision impairment), high-risk surgery, large intraoperative blood loss, preoperative use of narcotics or benzodiazepines, intensive care unit admission, immobility, and metabolic disorder. Delirium impedes postoperative care, causes longer lengths of hospital stay, increases healthcare costs, and elevates the risk of long-term postoperative cognitive dysfunction, morbidities, and mortalities.^{2,3,6}

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The management of delirium requires identifying the possible causes, correcting the etiological factors, and the use of both pharmacological and non-pharmacological interventions.⁷ Several types of non-pharmacological interventions have been studied for the prevention and treatment of delirium, including multidisciplinary care, multimedia education, cognitive stimulation programs, and environmental and nutritional support.⁸⁻¹⁰ Xue et al. demonstrated that the incidence of delirium after cardiac surgery could be reduced in patients by them receiving a preoperative education intervention.¹¹ Guo et al. showed the benefit of preoperative education in reducing the incidence and severity of delirium in patients who were treated in an intensive care unit after surgery.¹² Additionally, several studies have shown that preoperative education can reduce anxiety and enhance the patients' education level about the aspects and risk of delirium.¹³⁻¹⁵

Currently, preoperative education can be delivered by using a variety of tools, including multimedia presentations, written materials, spoken instructions, or a combination of such tools.¹⁶ There are various sources of multimedia, including the internet, video, tablets, and smartphones with various applications (apps).¹⁷ The use of multimedia can enhance patient education by explaining this complex medical illness with the aid of visual presentations. Furthermore, multimedia materials are typically easy to access, cost-effective, and can be integrated into clinical practice.¹⁸ Our study aimed to evaluate the knowledge level and patient satisfaction after receiving multimedia education on delirium that was developed by the Siriraj Integrated Perioperative Geriatric Excellent Research Center (SiPG), Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand for use with geriatric patients undergoing elective noncardiac surgery.

MATERIALS AND METHODS

Study population and study protocol

This prospective, randomized controlled trial (RCT) was approved by the Siriraj Investigational Review Board (COA no. Si 713/2023). Our study was registered in the Thai Clinical Trials Registry (TCTR20231002015). All participants were informed about the objectives and risks, and written consent was obtained. The study was performed at the Golden Jubilee Medical Center, Faculty of Medicine Siriraj Hospital, Mahidol University between September 2023 and November 2023.

Elderly patients (65 years old and older) undergoing elective noncardiac surgery at the hospital were enrolled in the study. The types of surgery included breast surgery, colon surgery, laparoscopic surgery, hernia surgery, hip or knee replacement surgery, spine surgery, neurosurgery,

gynecological surgery, urological surgery, and ear-nose-throat surgery. Cardiac surgery was not included because we did not have cardiac surgery in our hospital. The exclusion criteria were patients with an inability to communicate in Thai, pre-existing dementia, pre-existing brain diseases, severe visual or hearing impairment, or diagnosis of a psychiatric disorder (schizophrenia, personality disorder, depressive disorder).

Randomization was done by block randomization. All participants were randomized into two groups: an intervention group and a control group. After admission to the hospital, both groups received information about the operations and were evaluated preoperatively by an anesthesiologist on the day before surgery. In the intervention group, the patients received multimedia education about the potential risk and aspects of delirium, while the control group did not. This education consisted of a multimedia presentation comprising a 10-minute video clip that was developed by registered nurses (professional level) from geriatric ward and advanced practice nurses in geriatric care. The video content was validated and approved by the geriatricians in the SiPG, which provided information covering important aspects of delirium, such as its definition, symptoms, causes, consequences, treatment, and prevention. The video clip starring Thai-famous actresses, a physician and a nurse has been uploaded to a free-video sharing website, YouTube® (<https://www.youtube.com/watch?v=8GKvqZFIZJI>). After watching the video clip, the patients in the intervention group took an examination for acute delirium and completed a satisfaction survey questionnaire; whereas, the patients in the control group only did the initial examination.

The 8 multiple-choice questions in the exam were focused on delirium. All the questions were assessed for their content validity and reliability. The content validity was assessed by an expert committee and was determined by obtaining the item-objective congruence (IOC) index for each question. An index of IOC higher than 0.5 was considered as indicating acceptable content validity.¹⁹ The reliability of the exam was calculated by using the Kuder–Richardson Formula 20 (KR20) calculation. The Kuder–Richardson Formula 20 is as follows:

$$KR20 = \frac{K}{K-1} \left[1 - \frac{\sum pq}{S_t^2} \right]$$

where K is the total number of questions, p is the proportion of people who answered the questions correctly, q is the proportion of people who did not answer the questions correctly, and S_t^2 is the variance of scores for all individuals who took the test. The value for the KR20

ranges from 0 to 1, with higher values indicating higher reliability.²⁰

The satisfaction survey questionnaire consisted of two parts, whereby the patients in the intervention group were asked about their satisfaction with the video clip and its usefulness. The answers ranged from 1 to 5, with 5 being “highly satisfied” and 1 being “highly unsatisfied”.

For the enrolled patients, their demographic data, comorbidities, American Society of Anesthesiologists (ASA) physical status level, types of surgical procedure, and scores from the examination and satisfaction survey were collected. The de-identified data was entered into a password-secured program.

Sample size calculation

We calculated the sample size by using nQuery Advisor version 7.0 software. According to the findings of Reynolds et al.²¹ and assuming an alpha level of 5% and 80% power, the sample size required was determined to be 24 in each group. Further considering a dropout rate of 10%, the total participants to be enrolled was 54 (27 participants per group).

Statistical analysis

SPSS software version 18 (SPSS Inc., Chicago, IL, USA) was used to analyze the collected data. The patient demographic data were presented using descriptive statistics. Categorical variables were expressed as numbers (percentages). Continuous variables were tested for normality. Data showing a normal distribution were presented as the mean \pm standard deviation (SD), while non-normally distributed data were presented as the median and interquartile range [IQR]. Independent t-tests were used to compare the examination scores between the two groups, which were adjusted for age, gender, ASA level, comorbidities, education level, and types of surgery using multiple linear regression. A *p*-value of less than 0.05 was regarded as statistically significant.

RESULTS

In total, 54 elderly patients (27 patients per group) were enrolled in the study and were included in the final analysis, with no patients excluded. Demographically, the mean age of the patients was 71.1 ± 5.7 years old, and 66.7% were women. Most of the patients (57.4%) were in ASA class 2. The two most common types of surgery in the present study were general surgery (18 of 54 [33.3%]) and orthopedic surgery (26 of 54 [48.1%]), with more patients in the intervention group having orthopedic surgery compared with the control group

(intervention group: 18 of 27 [66.7%] vs 8 of 27 [29.6%]; *p* = 0.001). There was no significant difference in any of age, comorbidities, education level, or ASA level between the two groups. We summarized and presented baseline characteristics in Table 1.

Our exam was evaluated for its reliability and content validity. The KR20 index to assess the reliability of the questions was 0.59 and the IOC index to assess the content validity of each questionnaire item ranged from 0.7 to 1.0.

After completing the multiple-choice questions in the exam, the average score in the intervention group was 6.56 ± 1.58 out of 8, while the average score in the control group was 4.96 ± 1.65 out of 8, as demonstrated in Fig 1, with a statistically significant difference in scores between the groups (*p* < 0.05), which adjusted for baseline variables.

According to the satisfaction survey done by the intervention group, we found that the average satisfaction score with the video clip was 4.87 ± 0.33 out of 5 and the average satisfaction score regarding its usefulness was 4.93 ± 0.26 out of 5. Further details of the satisfaction scores are summarized in Fig 2. The average total score in the satisfaction survey overall was 4.89 ± 0.31 out of 5. All the questions in the satisfaction survey were rated at highly satisfied level.

DISCUSSION

Our study reported the effectiveness of and patient satisfaction with multimedia education on delirium, based on education developed by SiPG. The participants completed questionnaires, which had their content validity confirmed by three clinical experts and their reliability statistically assessed. The average score in the intervention group was 6.56 ± 1.58 out of 8, which was significantly higher than in the control group (4.96 ± 1.65 out of 8). All the questions in the satisfaction survey related to the multimedia video clip received ratings of “highly satisfied”.

Preoperative patient education is one of the most common non-pharmacological interventions to prevent delirium.¹⁵ According to a systematic review, preoperative education can enhance self-efficacy and knowledge in orthopedic patients, and even allow reducing medication for postoperative pain.²² Chevillon et al. studied the impact of preoperative education on postoperative delirium in patients undergoing pulmonary thromboendarterectomy and found that this intervention could improve patient's knowledge and reduce the time they needed mechanical ventilation.¹⁵ Furthermore, Xue and colleagues conducted a study in patients undergoing cardiac surgery and found

TABLE 1. Patients' baseline characteristics.

Variable	Overall (n=54)	Intervention (n=27)	Control (n=27)	p-value
Age (years)	71.11±5.69	70.67±5.38	71.56±6.07	0.52
Female	36 (66.7%)	22 (81.5%)	14 (51.9%)	0.02*
Education level				
Low	20 (37.0%)	13 (48.2%)	7 (25.9%)	0.19
Intermediate	8 (14.8%)	5 (18.5%)	3 (11.1%)	
High	26 (48.2%)	9 (33.3%)	17 (63.0%)	
Comorbidities				
Cerebrovascular disease	3 (5.6%)	2 (7.4%)	1 (3.7%)	0.55
Coronary artery disease	1 (1.9%)	0 (0%)	1 (3.7%)	0.31
Dyslipidemia	32 (59.3%)	18 (66.7%)	14 (51.9%)	0.27
Diabetes mellitus	16 (29.6%)	10 (37.0%)	6 (22.2%)	0.23
Hypertension	35 (64.8%)	20 (74.1%)	15 (55.6%)	0.15
Kidney disease	2 (3.7%)	1 (3.7%)	1 (3.7%)	1.0
ASA physical status level				
Class II	33 (61.1%)	17 (63.0%)	16 (59.3%)	0.31
Class III	21 (38.9%)	10 (37.0%)	11 (40.7%)	
Types of surgery				
General	18 (33.3%)	3 (11.1%)	15 (55.6%)	0.001*
Orthopedic	26 (48.1%)	18 (66.7%)	8 (29.6%)	
Urology	3 (5.6%)	0 (%)	3 (11.1%)	
Gynecology	2 (3.7%)	1 (3.7%)	1 (3.7%)	
Ear Nose Throat	4 (7.4%)	4 (14.8%)	0 (0%)	
Neurosurgery	1 (1.9%)	1 (3.7%)	0 (0%)	

The data are presented as the mean ± SD or n (%).

* $p < 0.05$ indicates statistical significance.

Abbreviations: ASA = American Society of Anesthesiologists; BMI = body mass index; SD= standard deviation

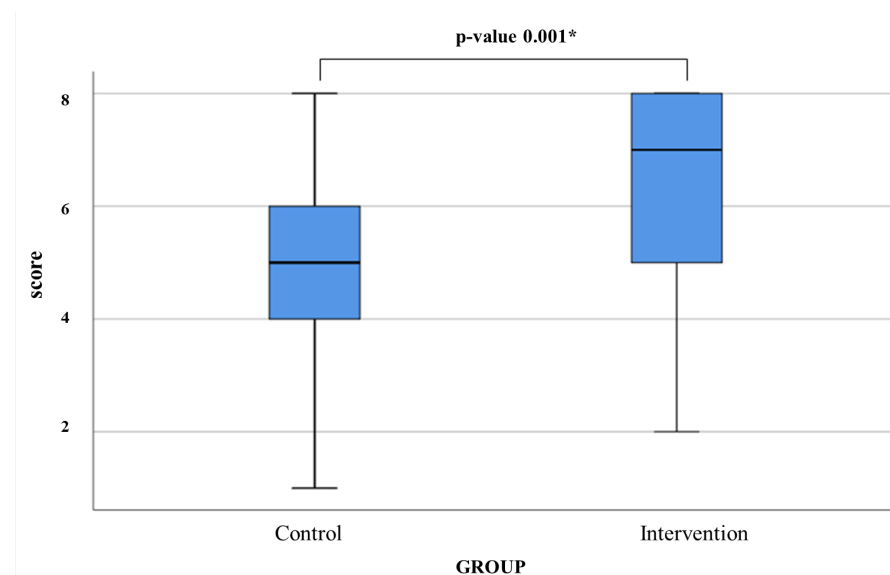


Fig 1. The mean ±SD of total scores (out of 8) in the multiple-choice exam for assessing delirium knowledge in the intervention (6.56 ±1.58) and control groups (4.96 ±1.65)

* $p < 0.05$ indicates statistical significance.

Abbreviation: SD= standard deviation

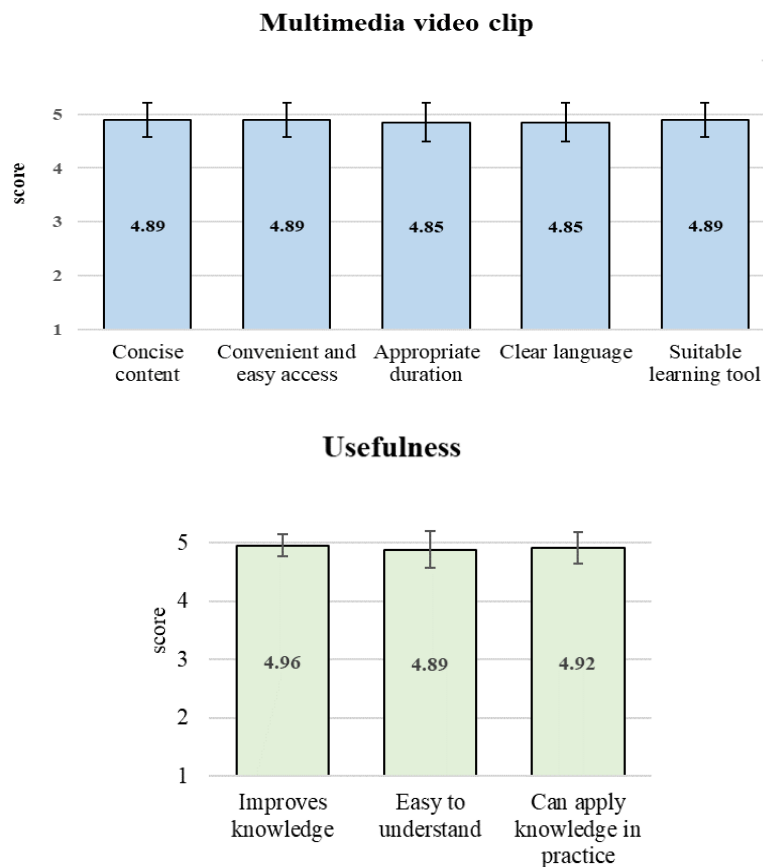


Fig 2. Summary scores (out of 5) from the satisfaction survey about the video clip and the usefulness done by the patients in the intervention group.

that preoperative education could reduce the incidence of postoperative delirium and enhance patient recovery.¹¹ Therefore, providing patient education can play a key role in improving patients' knowledge of postoperative delirium.

There are various platforms that can be used to educate patients before surgery. Nowadays, there is an increasing trend in utilizing multimedia for preoperative education due to its ability to provide consistent information with key points in an easy-to-access and cost-effective manner.²³ Patients can view it at any place or time and can replay it as often as they want. Previous studies have reported on the use and efficacy of multimedia systems for preoperative education in cancer patients, patients undergoing radical prostatectomy, and hysterectomy patients and reported that such use can decrease anxiety by increasing patients' knowledge about their treatment and potential risks.^{17,24,25} Furthermore, Detroyer et al. investigated the effectiveness of a delirium e-learning tool in promoting healthcare workers' knowledge of delirium, and reported that healthcare workers showed improvement in delirium recognition and knowledge. Their knowledge score significantly increased in a posttest compared to the pretest.²⁶

To the best of our knowledge, this is the first study that has evaluated the effectiveness of and patient satisfaction with the use of multimedia to provide patient education

about delirium. The multimedia tool in the present study comprised a video clip developed by SiPG. Our video clip consisted of a 10-minute short film starring famous actresses, with additional text providing information about delirium in elderly patients. Our results showed that this video helped improve our patient's knowledge of delirium, and the patients were very satisfied with this multimedia resource. The concise information and appropriate duration of the video clip helped patients to recall and understand the risks involved and the different aspects of delirium, including elderly patients with various levels of education. Our results were in agreement with the results from a previous report that included patients undergoing cancer surgery.¹⁷ They reported that using multimedia for preoperative education can improve patients' baseline knowledge and that the patients reported being highly satisfied with this measure. Turkdogan et al. also demonstrated high satisfaction in patients undergoing head and neck surgery who received information from a multimedia education platform.²⁷ Additionally, a randomized clinical trial in patients undergoing coronary artery bypass graft showed the effectiveness of multimedia education on postoperative delirium and found a lower incidence of delirium in patients receiving multimedia education compared to those receiving routine training.²⁸ Hence, using multimedia resources for providing preoperative

education on delirium can serve as an important non-pharmacological intervention in elderly patients due to its various benefits.

Our study has some limitations to note, including that our study was a single-center study, which may limit the generalizability of the results to the wider population, and our study included different types of surgery for which the levels of anxiety may vary and may affect the answers to the questions in the questionnaire. Further studies will be needed to study the clinical implications of using this multimedia presentation for delirium prevention in elderly patients. Moreover, a healthcare team and patient's-family caregivers need to be included to see if our video clip could benefit these groups as well.

CONCLUSION

In conclusion, the clinical implication of our video clip on delirium developed by SiPG, Faculty of Medicine Siriraj Hospital, Mahidol University is that it could have a meaningful role to serve as an effective tool for promoting preoperative education of delirium. Our study demonstrated its ability to improve patient's knowledge and increase patient satisfaction after watching the video. Moreover, our web-based video clip with appropriate content and a suitable duration is easily accessible and can be viewed at any time or place and on a range of devices.

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Author Contributions

S.A. and A.J. contributed to the conception and design of this study. A.J., N.N., and B.S. collected and interpreted the data, while S.A. performed the statistical analysis. The first draft of the manuscript was written by A.J. and S.A. and all authors reviewed and commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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No funding was received for conducting this study.

DECLARATIONS

Conflict of interest

All authors confirm that they have no conflicts of interest to declare.

Ethical approval

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Siriraj Investigational Review Board (COA no. Si 713/2023).

Informed consent

Informed consent was obtained from all individual participants included in the study.

REFERENCES

1. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. *Lancet*. 2014;383(9920):911-22.
2. Deiner S, Silverstein JH. Postoperative delirium and cognitive dysfunction. *Br J Anaesth*. 2009;103 Suppl 1(Suppl 1):i41-6.
3. Gleason LJ, Schmitt EM, Kosar CM, Tabloski P, Saczynski JS, Robinson T, et al. Effect of Delirium and Other Major Complications on Outcomes After Elective Surgery in Older Adults. *JAMA Surg*. 2015;150(12):1134-40.
4. Yang JJ, Lei L, Qiu D, Chen S, Xing LK, Zhao JW, et al. Effect of Remimazolam on Postoperative Delirium in Older Adult Patients Undergoing Orthopedic Surgery: A Prospective Randomized Controlled Clinical Trial. *Drug Des Devel Ther*. 2023;17:143-53.
5. Ansaloni L, Catena F, Chattat R, Fortuna D, Franceschi C, Mascitti P, et al. Risk factors and incidence of postoperative delirium in elderly patients after elective and emergency surgery. *Br J Surg*. 2010;97(2):273-80.
6. Inouye SK. Delirium in older persons. *N Engl J Med*. 2006;354(11):1157-65.
7. Grover S, Avasthi A. Clinical Practice Guidelines for Management of Delirium in Elderly. *Indian J Psychiatry*. 2018;60(Suppl 3): S329-S40.
8. Martinez FT, Tobar C, Beddings CI, Vallejo G, Fuentes P. Preventing delirium in an acute hospital using a non-pharmacological intervention. *Age and Ageing*. 2012;41(5):629-34.
9. Lee Y, Lee J, Kim J, Jung Y. Non-Pharmacological Nursing Interventions for Prevention and Treatment of Delirium in Hospitalized Adult Patients: Systematic Review of Randomized Controlled Trials. *Int J Environ Res Public Health*. 2021;18(16).
10. Nakamura R, Miyamoto K, Tsuji K, Ozaki K, Kunimoto H, Honda K, et al. The impact of a preoperative nurse-led orientation program on postoperative delirium after cardiovascular surgery: a retrospective single-center observational study. *J Intensive Care*. 2023;11(1):20.
11. Xue X, Wang P, Wang J, Li X, Peng F, Wang Z. Preoperative individualized education intervention reduces delirium after cardiac surgery: a randomized controlled study. *J Thorac Dis*. 2020;12(5):2188-96.

12. Guo Y, Fan Y. A Preoperative, Nurse-Led Intervention Program Reduces Acute Postoperative Delirium. *Journal of Neuroscience Nursing*. 2016;48(4):229-35.
13. Kalogianni A, Almpani P, Vastardis L, Baltopoulos G, Charitos C, Brokalaki H. Can nurse-led preoperative education reduce anxiety and postoperative complications of patients undergoing cardiac surgery? *Eur J Cardiovasc Nurs*. 2016;15(6):447-58.
14. Cserép Z, Losoncz E, Balog P, Szili-Török T, Husz A, Juhász B, et al. The impact of preoperative anxiety and education level on long-term mortality after cardiac surgery. *J Cardiothorac Surg*. 2012;7(1):86.
15. Chevillon C, Hellyar M, Madani C, Kerr K, Kim SC. Preoperative Education on Postoperative Delirium, Anxiety, and Knowledge in Pulmonary Thromboendarterectomy Patients. *Am J Crit Care*. 2015;24(2):164-71.
16. Tadesse B, Kumar P, Girma N, Anteneh S, Yimam W, Girma M. Preoperative Patient Education Practices and Predictors Among Nurses Working in East Amhara Comprehensive Specialized Hospitals, Ethiopia, 2022. *J Multidiscip Healthc*. 2023;16:237-47.
17. Steves SL, Scafide KN. Multimedia in preoperative patient education for adults undergoing cancer surgery: A systematic review. *Eur J Oncol Nurs*. 2021;52:101981.
18. Tom K, Phang PT. Effectiveness of the video medium to supplement preoperative patient education: A systematic review of the literature. *Patient Educ Couns*. 2022;105(7):1878-87.
19. Khiaw-Im N, Aimyong N, Wongrathanandha C, Tangsangwornthamma C. Cross-Cultural Adaptation, Reliability, and Content Validity of Thai Version of Workplace Violence in the Health Sector Country Case Study Questionnaire. *J Prim Care Community Health*. 2022;13:21501319221132448.
20. Nugroho A, Warnars HLHS, Heriyadi Y, Tanutama L, editors. Measure The Level Of Success In Using Google Drive with the Kuder Richardson (KR) Reliability Method. 2019 International Congress on Applied Information Technology (AIT); 2019 4-6 Nov. 2019.
21. Reynolds J. Promoting self – care through the use of augmented reality: Case study of diabetic patients, diabetic clinic, Taksin Hospital (Research Report). Bangkok: Faculty of Nursing, Siam University; 2020.
22. Johansson K, Nuutila L, Virtanen H, Katajisto J, Salanterä S. Preoperative education for orthopaedic patients: systematic review. *J Adv Nurs*. 2005;50(2):212-23.
23. Yesilyurt DS, Findik ÜY. Effect of preoperative video information on anxiety and satisfaction in patients undergoing abdominal surgery. *CIN: Computers, Informatics, Nursing*. 2019;37(8): 430-6.
24. Huber J, Ihrig A, Yass M, Bruckner T, Peters T, Huber CG, et al. Multimedia Support for Improving Preoperative Patient Education: A Randomized Controlled Trial Using the Example of Radical Prostatectomy. *Ann Surg Oncol*. 2013;20(1):15-23.
25. Jeon S, Park H. Effect of Preoperative Education using Multimedia on Pain, Uncertainty, Anxiety and Depression in Hysterectomy Patients. *Korean J Women Health Nurs*. 2016;22(1):39-47.
26. Detroyer E, Dobbels F, Debonnaire D, Irving K, Teodorczuk A, Fick DM, et al. The effect of an interactive delirium e-learning tool on healthcare workers' delirium recognition, knowledge and strain in caring for delirious patients: a pilot pre-test/post-test study. *BMC Med Educ*. 2016;16:17.
27. Turkdogan S, Roy CF, Chartier G, Payne R, Mlynarek A, Forest V-I, et al. Effect of Perioperative Patient Education via Animated Videos in Patients Undergoing Head and Neck Surgery: A Randomized Clinical Trial. *JAMA Otolaryngol Head Neck Surg*. 2022;148(2):173-9.
28. Fahimi K, Abbasi A, Zahedi M, Amanpour F, Ebrahimi H. The effects of multimedia education on postoperative delirium in patients undergoing coronary artery bypass graft: A randomized clinical trial. *Nurs Crit Care*. 2020;25(6):346-52.