

World Journal of *Clinical Cases*

World J Clin Cases 2022 December 6; 10(34): 12462-12803



FIELD OF VISION

- 12462 Problematics of neurosurgical service during the COVID-19 pandemic in Slovenia
Munda M, Bosnjak R, Velnar T

MINIREVIEWS

- 12470 Circulating angiotensin converting enzyme 2 and COVID-19
Leowattana W, Leowattana T, Leowattana P
- 12484 Evaluation of gut dysbiosis using serum and fecal bile acid profiles
Monma T, Iwamoto J, Ueda H, Tamamushi M, Kakizaki F, Konishi N, Yara S, Miyazaki T, Hirayama T, Ikegami T, Honda A
- 12494 Pediatric kidney transplantation during the COVID-19 pandemic
Tamura H

ORIGINAL ARTICLE**Clinical and Translational Research**

- 12500 *Coptis*, *Pinellia*, and *Scutellaria* as a promising new drug combination for treatment of *Helicobacter pylori* infection
Yu Z, Sheng WD, Yin X, Bin Y

Case Control Study

- 12515 Effects of illness perception on negative emotions and fatigue in chronic rheumatic diseases: Rumination as a possible mediator
Lu Y, Jin X, Feng LW, Tang C, Neo M, Ho RC

Retrospective Study

- 12532 Significance of incidental focal fluorine-18 fluorodeoxyglucose uptake in colon/rectum, thyroid, and prostate: With a brief literature review
Lee H, Hwang KH
- 12543 Follow-up study on ThinPrep cytology test-positive patients in tropical regions
Chen YC, Liang CN, Wang XF, Wang MF, Huang XN, Hu JD
- 12551 Effect of teach-back health education combined with structured psychological nursing on adverse emotion and patient cooperation during ^{99m}Tc -3PRGD2.SPECT/CT
Gong WN, Zhang YH, Niu J, Li XB
- 12559 Nosocomial infection and spread of SARS-CoV-2 infection among hospital staff, patients and caregivers
Cheng CC, Fann LY, Chou YC, Liu CC, Hu HY, Chu D

Observational Study

- 12566** Effectiveness and safety of generic and brand direct acting antivirals for treatment of chronic hepatitis C
Abdulla M, Al Ghareeb AM, Husain HAHY, Mohammed N, Al Qamish J
- 12578** Influence of group B streptococcus and vaginal cleanliness on the vaginal microbiome of pregnant women
Liao Q, Zhang XF, Mi X, Jin F, Sun HM, Wang QX

Randomized Controlled Trial

- 12587** Clinical study on tri-tongue acupuncture combined with low-frequency electrical stimulation for treating post-stroke dysarthria
Man B, Li WW, Xu JF, Wang Q

META-ANALYSIS

- 12594** Three-dimensional time-of-flight magnetic resonance angiography combined with high resolution T2-weighted imaging in preoperative evaluation of microvascular decompression
Liang C, Yang L, Zhang BB, Guo SW, Li RC

CASE REPORT

- 12605** Acute cytomegalovirus hepatitis in an immunocompetent patient: A case report
Wang JP, Lin BZ, Lin CL, Chen KY, Lin TJ
- 12610** Long-term results of extended Boari flap technique for management of complete ureteral avulsion: A case report
Zhong MZ, Huang WN, Huang GX, Zhang EP, Gan L
- 12617** Amyloid β -related angiitis of the central nervous system occurring after COVID-19 vaccination: A case report
Kizawa M, Iwasaki Y
- 12623** Pseudoileus caused by primary visceral myopathy in a Han Chinese patient with a rare MYH11 mutation: A case report
Li N, Song YM, Zhang XD, Zhao XS, He XY, Yu LF, Zou DW
- 12631** Emergent use of tube tip in pharynx technique in "cannot intubate cannot oxygenate" situation: A case report
Lin TC, Lai YW, Wu SH
- 12637** Inflammatory myofibroblastic tumor of the central nervous system: A case report
Su ZJ, Guo ZS, Wan HT, Hong XY
- 12648** Atypical aggressive vertebral hemangioma of the sacrum with postoperative recurrence: A case report
Wang GX, Chen YQ, Wang Y, Gao CP
- 12654** Closed reduction of hip dislocation associated with ipsilateral lower extremity fractures: A case report and review of the literature
Xu Y, Lv M, Yu SQ, Liu GP

- 12665** Repair of a large patellar cartilage defect using human umbilical cord blood-derived mesenchymal stem cells: A case report
Song JS, Hong KT, Song KJ, Kim SJ
- 12671** Abdominal bronchogenic cyst: A rare case report
Li C, Zhang XW, Zhao CA, Liu M
- 12678** Malignant fibrous histiocytoma of the axilla with breast cancer: A case report
Gao N, Yang AQ, Xu HR, Li L
- 12684** Rapid hemostasis of the residual inguinal access sites during endovascular procedures: A case report
Kim H, Lee K, Cho S, Joh JH
- 12690** Formation of granulation tissue on bilateral vocal cords after double-lumen endotracheal intubation: A case report
Xiong XJ, Wang L, Li T
- 12696** Giant cellular leiomyoma in the broad ligament of the uterus: A case report
Yan J, Li Y, Long XY, Li DC, Li SJ
- 12703** Pomolidomide for relapsed/refractory light chain amyloidosis after resistance to both bortezomib and daratumumab: A case report
Li X, Pan XH, Fang Q, Liang Y
- 12711** Ureteral- artificial iliac artery fistula: A case report
Feng T, Zhao X, Zhu L, Chen W, Gao YL, Wei JL
- 12717** How to manage isolated tension non-surgical pneumoperitonium during bronchoscopy? A case report
Baima YJ, Shi DD, Shi XY, Yang L, Zhang YT, Xiao BS, Wang HY, He HY
- 12726** Amiodarone-induced muscle tremor in an elderly patient: A case report
Zhu XY, Tang XH, Yu H
- 12734** Surgical treatment of Pitt-Hopkins syndrome associated with strabismus and early-onset myopia: Two case reports
Huang Y, Di Y, Zhang XX, Li XY, Fang WY, Qiao T
- 12742** Massive low-grade myxoid liposarcoma of the floor of the mouth: A case report and review of literature
Kugimoto T, Yamagata Y, Ohsako T, Hirai H, Nishii N, Kayamori K, Ikeda T, Harada H
- 12750** Gingival enlargement induced by cyclosporine in Medullary aplasia: A case report
Victory Rodríguez G, Ruiz Gutiérrez ADC, Gómez Sandoval JR, Lomeli Martínez SM
- 12761** Compound heterozygous mutations in PMFBP1 cause acephalic spermatozoa syndrome: A case report
Deng TQ, Xie YL, Pu JB, Xuan J, Li XM
- 12768** Colonic tubular duplication combined with congenital megacolon: A case report
Zhang ZM, Kong S, Gao XX, Jia XH, Zheng CN

- 12775** Perforated duodenal ulcer secondary to deferasirox use in a child successfully managed with laparoscopic drainage: A case report
Alshehri A, Alsinan TA
- 12781** Complication after nipple-areolar complex tattooing performed by a non-medical person: A case report
Byeon JY, Kim TH, Choi HJ
- 12787** Interventional urethral balloon dilatation before endoscopic visual internal urethrotomy for post-traumatic bulbous urethral stricture: A case report
Ha JY, Lee MS
- 12793** Regression of gastric endoscopic submucosal dissection induced polypoid nodular scar after *Helicobacter pylori* eradication: A case report
Jin BC, Ahn AR, Kim SH, Seo SY
- 12799** Congenital absence of the right coronary artery: A case report
Zhu XY, Tang XH

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Giuseppe Lanza, MD, MSc, PhD, Associate Professor, Department of Surgery and Medical-Surgical Specialties, University of Catania, Catania 95123, Italy.
glanza@oasi.en.it

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases (WJCC, World J Clin Cases)* is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The *WJCC* is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for *WJCC* as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The *WJCC*'s CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Si Zhao*; Production Department Director: *Xu Guo*; Editorial Office Director: *Jin-Lei Wang*.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

December 6, 2022

COPYRIGHT

© 2022 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>

Retrospective Study

Effect of teach-back health education combined with structured psychological nursing on adverse emotion and patient cooperation during ^{99m}Tc -3PRGD2.SPECT/CT

Wei-Ning Gong, Yun-He Zhang, Jing Niu, Xue-Bing Li

Specialty type: Nursing**Provenance and peer review:**

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind**Peer-review report's scientific quality classification**

Grade A (Excellent): 0
Grade B (Very good): 0
Grade C (Good): C, C
Grade D (Fair): D
Grade E (Poor): 0

P-Reviewer: Batta A, India; Thomas CD, France; Troschitz J, Germany**Received:** August 29, 2022**Peer-review started:** August 29, 2022**First decision:** September 23, 2022**Revised:** October 13, 2022**Accepted:** October 27, 2022**Article in press:** October 27, 2022**Published online:** December 6, 2022**Wei-Ning Gong, Jing Niu, Xue-Bing Li**, Department of Nuclear Medicine, Jincheng People's Hospital, Jincheng 048000, Shanxi Province, China**Yun-He Zhang**, Institutes of Brain Science, Fudan University, Shanghai 200032, China**Corresponding author:** Xue-Bing Li, BM BCh, Associate Chief Physician, Department of Nuclear Medicine, Jincheng People's Hospital, No. 456 Wenchang Street, Jincheng 048000, Shanxi Province, China. xuebing889900@163.com**Abstract****BACKGROUND**

^{99m}Tc -3PRGD2.SPECT/CT is a commonly used examination method in nuclear medicine. However, patients receiving ^{99m}Tc -3PRGD2.SPECT/CT have insufficient knowledge of this method and worry about the examination results.

AIM

To investigate the effect of teach-back health education combined with structured psychological nursing on adverse emotion and cooperation in patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examination.

METHODS

Ninety patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examinations were divided into a study group and a control group using a simple random number table, and 45 cases were allocated to each group. Routine nursing was provided to the control group, and teach-back health education combined with structured psychological nursing was provided to the study group on the basis of the control group. Heart rate, diastolic blood pressure, systolic blood pressure, self-rating depression scale (SDS), and self-rating anxiety scale (SAS) were assessed before and after the intervention, and examination cooperation and intervention satisfaction were assessed in the two groups before, during, and after the examination.

RESULTS

Before the examination, heart rate, diastolic blood pressure, and systolic blood pressure in the study group were not significantly different from the values of the control group ($P > 0.05$). The results of the study group before and after the examination were lower than those in the control group ($P < 0.05$). Before the

intervention, SDS and SAS scores in the study group were not significantly different from those in the control group ($P > 0.05$). After the intervention, SDS and SAS scores in the study group were lower than those in the control group ($P < 0.05$). The degree of cooperation was higher in the study group than in the control group ($P < 0.05$). The satisfaction rate with the intervention was higher in the study group than in the control group ($P < 0.05$).

CONCLUSION

Teach-back health education combined with structured psychological nursing can help maintain the stability of blood pressure and heart rate, relieve negative emotions, and improve the satisfaction and cooperation of patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examinations.

Key Words: Bad mood; Cooperation; Nuclear medicine; Structured psychological care; Teach-back health education; ^{99m}Tc -3PRGD2.SPECT/CT examination

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Patients generally have a certain degree of fear of ^{99m}Tc -3PRGD2.SPECT/CT, we explore the value of teach-back health education combined with structured psychological care interventions.

Citation: Gong WN, Zhang YH, Niu J, Li XB. Effect of teach-back health education combined with structured psychological nursing on adverse emotion and patient cooperation during ^{99m}Tc -3PRGD2.SPECT/CT. *World J Clin Cases* 2022; 10(34): 12551-12558

URL: <https://www.wjgnet.com/2307-8960/full/v10/i34/12551.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i34.12551>

INTRODUCTION

^{99m}Tc -3PRGD2.SPECT/CT is a commonly used examination method in nuclear medicine imaging departments that can provide an objective reference for disease diagnosis and treatment. It has many advantages, such as ease of operation, and plays an important role in clinical practice[1,2]. However, patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT have insufficient knowledge of this examination mode and worry about the examination results. Thus, a certain degree of fear, tension, anxiety, and other psychological states are prevalent, resulting in poor patient cooperation during the examination, which can adversely affect the examination results[3-5]. Therefore, effective care during the examination is critically needed.

Teach-back health education is a clinically important intervention model that is mainly used to provide health education to patients and allow them to express their understanding of the learning material in their own words. Nursing staff may intervene if patients do not properly understand until the patients have mastered the relevant information[6,7]. Structured psychological nursing is a commonly used psychological nursing method, comprised of different psychological intervention measures and used to implement comprehensive interventions in organic combination with health education, stress management, coping skills, *etc*[8].

Based on this, 90 patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examination at our hospital were selected to explore the value of teach-back health education combined with structured psychological nursing intervention.

MATERIALS AND METHODS

General information

From July 2020 to February 2022, 90 patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examinations were divided into a study group and a control group according to a simple random number table, with 45 cases assigned to each group.

Selection criteria

Inclusion criteria: (1) Patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examination; (2) aged 18-70 years old; (3) clear consciousness and good understanding and communication abilities; and (4) patients or their families were aware of this study and signed a consent form.

Exclusion criteria: (1) Patients with speech communication disorders or cognitive dysfunction; (2) patients with mental system diseases; (3) patients with immune system diseases or systemic infectious diseases; and (4) patients with malignant tumors and cancer cell spread.

Measurements

Control group: Routine nursing care was provided. (1) Before the examination, the importance, necessity, and basic knowledge of a ^{99m}Tc -3PRGD2.SPECT/CT examination, including the purpose of the examination, relevant precautions, *etc.*, were patiently explained to the patients to alleviate adverse emotions and guide them to report subjective feelings, patiently answer their questions, and ensure that the patients underwent the examination with a positive attitude; (2) During the examination, the vital signs and state of consciousness of the patients were closely monitored, and patients were given comfort by touching their limbs and other forms of reassurance to reduce tension and other psychological factors in the patient; and (3) After the examination, the patients were advised to drink more water to increase the urine volume and thus accelerate the efflux of radiopharmaceuticals, and we closely monitored whether the patient's hemogram was normal. Proper treatment was provided promptly if adverse reactions occurred.

Study group: On the basis of the control group, teach-back health education combined with structured psychological care and teach-back health education were adopted: (1) Information transmission: most patients had insufficient knowledge of ^{99m}Tc -3PRGD2.SPECT/CT examination, including the fact that this examination mode involves radionuclide radiation, and most of them worried about their own symptoms and examination results. Thus, depression, anxiety, and fear were likely to occur. For this reason, the importance and purpose of the examination, relevant precautions, and cooperation skills during the examination were explained in detail to patients beforehand. (2) Effect evaluation: patients expressed the educational content in their own words. The patients were instructed to perform operation drills on the spot, and a thorough assessment of their understanding of the educational material was performed, based on which targeted adjustment and optimization were provided. The educational method was thus improved until the patients could effectively demonstrate their understanding of the educational content; and (3) Mastery was assessed by confirming that the patient could accurately and comprehensively repeat the relevant information regarding the ^{99m}Tc -3PRGD2.SPECT/CT examination.

Structured psychological nursing consists of the following components: (1) Active communication with patients is pursued to reduce alienation and bad mood using simple language to enhance understanding, showing a kind attitude, and talking at a peaceful speech rate to provide encouragement with active listening and establish a harmonious medical relationship. In this manner, patients are guided to report their inner feelings and alleviate bad mood by shifting attention, and their confidence is enhanced by actively describing to them successful cases, thus assisting them to adopt a good mentality; (2) Cognitive therapy is carried out in further psychological nursing, the staff collects and assesses the patient's knowledge of ^{99m}Tc -3PRGD2.SPECT/CT, understands their coping ability and psychological needs, points out their current improper understanding and coping behavior, promotes their correct understanding of ^{99m}Tc -3PRGD2.SPECT/CT, and actively copes with psychological stress. This method can aggravate the psychological burden of patients to a certain extent, so the staff should first communicate with the family members, carry out effective psychological counseling and support, obtain the cooperation and support of the patient, and guide the family members to provide the patients with affectionate comfort and encouragement to improve their sense of security; and (3) The psychological state is consolidated through self-relaxation training; the patients are informed of the benefits of self-relaxation training ("breathing method"), including relieving psychological pressure and reducing the degree of pain, and are guided to repeat the various times.

Outcome measures

Heart rate, diastolic blood pressure, and systolic blood pressure were assessed before, during, and after the examination in the two groups. The levels of depression and anxiety before and after intervention were determined according to the self-rating depression scale (SDS) and self-rating anxiety scale (SAS), respectively, with higher scores indicating more severe depression and anxiety. Statistics of cooperation: the evaluation of patients was scored with a maximum of 100 points: 90-100 points for complete cooperation; 70-89 points for basic cooperation, and less than 70 points for lack of cooperation. For this calculation, the following formula was used: examination cooperation = (complete cooperation + basic cooperation)/total number of cases \times 100%. Statistical analysis of the intervention satisfaction as measured by the Newcastle Nursing Satisfaction Scale was performed. This scale rates patient satisfaction as very satisfied, generally satisfied, or dissatisfied, and satisfaction was calculated with the following formula: satisfaction = (generally satisfied + very satisfied)/total number of cases \times 100%.

Statistical analysis

SPSS 22.0 was used to analyze the data. The data were expressed as mean \pm SD, and the *t* test, enumeration data *n* (%), and χ^2 test were used in the analysis. *P* < 0.05 indicated that the difference was

statistically significant.

RESULTS

General data

The gender, age, education level, and other data of the participants in the study and control groups were similar and comparable ($P > 0.05$) (Table 1).

Heart rate and blood pressure

Before the examination, heart rate, diastolic blood pressure, and systolic blood pressure values in the two groups were not significantly different ($P > 0.05$). These measurement values were all higher in both groups after the examination compared to those measured before the examination. After the examination, these measurement values were lower in the study group than in the control group ($P < 0.05$) (Table 2).

Levels of depression and anxiety

Before the intervention, SDS (62.42 ± 6.01) and SAS (61.79 ± 5.45) scores in the study group were not significantly different from those in the control group (63.06 ± 5.64 and 62.29 ± 6.37) ($P > 0.05$). After the intervention, SDS (41.15 ± 4.51) and SAS (42.46 ± 5.19) scores in the study group were lower than those in the control group (46.05 ± 5.07 and 47.71 ± 5.62) ($P < 0.05$), as shown in Table 3.

Checking fit

The degree of cooperation during the examination was higher in the study group (97.78%) than in the control group (84.44%) ($P < 0.05$), as shown in Table 4.

Intervention satisfaction

Intervention satisfaction was higher in the study group (95.56%) than in the control group (82.22%) ($P < 0.05$), as shown in Table 5.

DISCUSSION

The ^{99m}Tc -3PRGD2.SPECT/CT examination method involves exposure to radioactivity, and patients are prone to fear, depression, and other psychological problems due to lack of understanding of the examination mode[9-11]. Therefore, providing effective health education and psychological care is critical for this examination. This study adopted a relevant health education model and psychological nursing for patients who were undergoing a ^{99m}Tc - 3PRGD2.SPECT/CT examination in our hospital after the implementation of intervention achieved good results.

Effects of teach-back health education and structured psychological nursing on physical and mental state

The results of this study showed that heart rate, diastolic blood pressure, and systolic blood pressure increased in both groups during and after the examination compared with those before the examination, but the levels of each index were lower in the study group than in the control group. The SDS and SAS scores were lower in the study group than in the control group after the intervention ($P < 0.05$), confirming that teach-back health education and structured psychological care can effectively alleviate depression and anxiety in ^{99m}Tc -3PRGD2.SPECT/CT examinees; this is extremely important for maintaining a stable heart rate and blood pressure during the peri-procedural period.

Traditional health education is transmitted unidirectionally from staff to intervention subjects, with insufficient interactivity, and in too uniformed and simplified a manner. Hence, it is difficult to stimulate the interest and enthusiasm of intervention subjects for learning, and the patient's learning and mastery are not assessed in a timely manner after the intervention[12,13]. At the same time, an "amnesia curve" occurs during memory, and routine health education leads to difficulties in effectively mastering the health information provided. In contrast, teach-back health education adopts a two-way information exchange through the patient restatement and expression of the health education content; in this exchange, staff can assess the patient's mastery and provide subsequent targeted interventions to ensure that there is an improvement in the subjects' enthusiasm and efficiency in learning. This occurs through the process of continuous strengthening and correction, which not only deepens their mastery of health knowledge, but also reduces the rate of amnesia[14,15]. In addition, psychological care also plays an important role in patients examined by SPECT-CT. Structured psychological nursing is a new clinical comprehensive nursing intervention model based on routine psychological nursing combined with other psychological nursing skills that allows nurses to implement interventions aimed at solving

Table 1 Comparison of general data between the two groups, *n* (%)

Indicators	Study group (<i>n</i> = 45)	Control group (<i>n</i> = 45)	<i>P</i> value
Gender (M/F)	24/21	26/19	> 0.05
Age (yr)	47.62 ± 16.05	48.13 ± 14.69	> 0.05
Education			> 0.05
Primary school and below	12 (26.67)	10 (22.22)	
Junior high school and high school	21 (46.67)	24 (53.33)	
College or above	12 (26.67)	11 (24.44)	

Table 2 Comparison of heart rate and blood pressure between the two groups (mean ± SD)

Time	Indicators	Study group (<i>n</i> = 45)	Control group (<i>n</i> = 45)	<i>P</i> value
Before inspection	Heart rate (beats/min)	88.58 ± 6.74	89.42 ± 7.09	> 0.05
	Diastolic blood pressure (mmHg)	89.21 ± 5.35	88.37 ± 6.44	> 0.05
	Systolic blood pressure (mmHg)	128.06 ± 7.99	130.14 ± 8.35	> 0.05
In Inspection	Heart rate (beats/min)	93.11 ± 6.95	104.45 ± 7.37	< 0.05
	Diastolic blood pressure (mmHg)	93.69 ± 6.14	100.15 ± 7.02	< 0.05
	Systolic blood pressure (mmHg)	132.25 ± 7.67	139.63 ± 8.05	< 0.05
After inspection	Heart rate (beats/min)	91.08 ± 7.32	95.96 ± 9.05	< 0.05
	Diastolic blood pressure (mmHg)	92.11 ± 6.48	95.06 ± 5.52	< 0.05
	Systolic blood pressure (mmHg)	131.42 ± 6.64	136.65 ± 5.71	< 0.05

Table 3 Comparison of depression and anxiety between the two groups (mean ± SD, points)

Time	Indicators	Study group (<i>n</i> = 45)	Control group (<i>n</i> = 45)	<i>P</i> value
Before inspection	SDS	62.42 ± 6.01	63.06 ± 5.64	> 0.05
	SAS	61.79 ± 5.45	62.29 ± 6.37	> 0.05
After inspection	SDS	41.15 ± 4.51	46.05 ± 5.07	< 0.05
	SAS	42.46 ± 5.19	47.71 ± 5.62	< 0.05

SDS: Self-rating depression scale; SAS: Self-rating anxiety scale.

Table 4 Comparison of test fit between the two groups, *n* (%)

Group	Number of cases	Complete fit	Basic fit	Uncooperative	Check fit
Study group	45	31 (68.89)	13 (28.89)	1 (2.22)	44 (97.78)
Control group	45	27 (60.00)	11 (24.44)	7 (15.56)	38 (84.44)
<i>P</i> value					< 0.05

negative emotions and adverse psychological states of patients during diagnosis and treatment[16]. Compared with routine psychological nursing, structured psychological nursing can refer to the actual situation of patients analyzed for various parameters to meet their overall nursing needs as much as possible. Further, the patients and their families can participate in clinical nursing activities during the intervention[17].

Table 5 Comparison of intervention satisfaction between the two groups, *n* (%)

Group	Number of cases	Very satisfied	Generally satisfied	Not satisfied	Total satisfaction
Study group	45	30 (66.67)	13 (28.89)	2 (4.44)	43 (95.56)
Control group	45	25 (55.56)	12 (26.67)	8 (17.78)	37 (82.22)
<i>P</i> value					< 0.05

Effects of teach-back health education and structured psychological nursing on examination cooperation

The results of this study showed the examination cooperation was higher in the study group (97.78%) than in the control group (84.44%) ($P < 0.05$), confirming that teach-back health education and structured psychological care have a high application value in patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examination. This can effectively relieve the depression and anxiety of patients and improve their cooperation during the procedure. Moreover, it is extremely important to maintain the stability of heart rate and blood pressure during the periprocedural period. The main reasons for this analysis were as follows: (1) teach-back health education is a patient-centered, flexible, and diverse form of education, and can be used to provide health education in appropriate forms. The nursing staff determines the patient's mastery of health knowledge through effective assessment and timeously detects deviations and cognitive deficiencies, so as to provide a targeted follow-up. At the same time, teach-back health education can strengthen the patient's memory, improve learning efficiency, reduce forgetfulness, and help patients to comprehensively master health education knowledge through repeated questioning, error correction, emphasis, and guidance, thus helping them realize the importance of the examination and encourage them to actively cooperate with it. Teach-back health education can continuously improve the nursing content through a two-way interactive information transmission and evaluation of the effects. It can also improve the quality of care, correct the patient's wrong notions, encourage them to actively cooperate with the diagnosis process and treatment, change their coping style, and help them to actively face and cooperate with the examination[18-20]. Psychological support was used as the basis of the cognitive intervention, and health education and stress coping skills were organically integrated. Before the intervention, a good relationship was first established with the patients, the characteristics of the patients were fully considered, and a psychological intervention program was targeted to alleviate fear, anxiety, tension, and other psychological factors in the patients, so that they could undergo the examination in a state of physical and mental relaxation and ensure safety.

Effect of teach-back health education and structured psychological nursing on intervention satisfaction

The results of this study also showed that the rate of satisfaction with the intervention in the study group (95.56%) was higher than that in the control group (82.22%) ($P < 0.05$), thus indicating that teach-back health education combined with structured psychological care could also effectively improve the satisfaction of patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examination by relieving negative emotions, maintaining a stable blood pressure and heart rate, and ensuring a smooth and stable examination process. At the same time, structured psychological care - based on psychological support combined with other types of psychological intervention techniques, and effectively combined with stress treatment, health education, and coping skills - helped nurses to patiently deal with patients' adverse emotions during treatment. This helped to improve patient satisfaction.

CONCLUSION

In summary, this study showed that the combined use of teach-back health education and structured psychological care for ^{99m}Tc -3PRGD2.SPECT/CT examination can improve the cooperation of patients during the examination, alleviate negative emotions, maintain stable blood pressure and heart rate, and lead to high patient satisfaction. However, the sample size was small, and whether the study results can be generalized still needs to be confirmed by further exploration. In the future, the sample size should be expanded, the uniformity and thoroughness of the experimental design could be improved, and more objective and effective evaluation criteria can be used to confirm the effectiveness and feasibility of this nursing model and promote its wide application in clinical practice.

ARTICLE HIGHLIGHTS

Research background

^{99m}Tc -3PRGD2.SPECT/CT has many advantages, such as ease of operation, and plays an important role in clinical practice.

Research motivation

Effective care during the examination is critically needed.

Research objectives

We want to explore the value of teach-back health education combined with structured psychological nursing intervention.

Research methods

Total 90 patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examinations were divided into a study group and a control group according to a simple random number table.

Research results

The degree of cooperation and the satisfaction rate with the intervention was higher in the study group than in the control group.

Research conclusions

Teach-back health education combined with structured psychological nursing can improve the satisfaction and cooperation of patients undergoing ^{99m}Tc -3PRGD2.SPECT/CT examinations.

Research perspectives

The sample size should be expanded, the uniformity and thoroughness of the experimental design could be improved, and more objective and effective evaluation criteria.

FOOTNOTES

Author contributions: Gong WN, and Li XB designed the research study; Gong WN performed the research; Zhang YH contributed new reagents and analytic tools; Niu J analyzed the data and wrote the manuscript; and all authors have read and approve the final manuscript.

Institutional review board statement: The study was reviewed and approved by the Jincheng People's Hospital Institutional Review Board.

Informed consent statement: All study participants provided informed written consent prior to study enrollment.

Conflict-of-interest statement: None conflict of interest.

Data sharing statement: No additional data are available.

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: China

ORCID number: Wei-Ning Gong 0000-0003-0626-0412; Yun-He Zhang 0000-0001-8381-2781; Jing Niu 0000-0002-3532-5505; Xue-Bing Li 0000-0001-6187-4762.

S-Editor: Wang JL

L-Editor: A

P-Editor: Wang JL

REFERENCES

- 1 **Mohd Rohani MF**, Zanical AZ, Suppiah S, Phay Phay K, Mohamed Aslum Khan F, Mohamad Najib FH, Mohd Noor N, Arumugam M, Amir Hassan SZ, Vinjamuri S. Bone single-photon emission computed tomography/computed tomography in cancer care in the past decade: a systematic review and meta-analysis as well as recommendations for further work. *Nucl Med Commun* 2021; **42**: 9-20 [PMID: 33165258 DOI: 10.1097/MNM.0000000000001306]
- 2 **Elsayed M**, Loya M, Galt J, Schuster DM, Bercu ZL, Newsome J, Brandon D, Benenati S, Behbahani K, Duszak R, Sethi I, Kokabi N. Same day yttrium-90 radioembolization with single photon emission computed tomography/computed tomography: An opportunity to improve care during the COVID-19 pandemic and beyond. *World J Gastrointest Oncol* 2021; **13**: 440-452 [PMID: 34040704 DOI: 10.4251/wjgo.v13.i5.440]
- 3 **England RW**, Sheikhbaheei S, Solomon AJ, Arbab-Zadeh A, Solnes LB, Bronner J, Johnson PT. When More Is Better: Underused Advanced Imaging Exams That Can Improve Outcomes and Reduce Cost of Care. *Am J Med* 2021; **134**: 848-853.e1 [PMID: 33819488 DOI: 10.1016/j.amjmed.2021.02.020]
- 4 **Seniaray N**, Verma R, Ranjan R, Belho E, Mahajan H. Comprehensive Functional Evaluation of the Spectrum of Multi-System Atrophy with ¹⁸F-FDG PET/CT and ^{99m}Tc TRODAT-1 SPECT: 5 Year's Experience from a Tertiary Care Center. *Ann Indian Acad Neurol* 2021; **24**: 490-494 [PMID: 34728939 DOI: 10.4103/aian.AIAN_1222_20]
- 5 **Gøeg KR**, Elberg PB, Højen AR, Eskildsen UL. SNOMED CT as Reference Terminology in the Danish National Home Care Documentation Standard. *Stud Health Technol Inform* 2017; **235**: 461-465 [PMID: 28423835]
- 6 **Holman CK**, Weed LD, Kelley SP. Improving Provider Use of the Teach-Back Method. *J Nurses Prof Dev* 2019; **35**: 52-53 [PMID: 30608325 DOI: 10.1097/NND.0000000000000521]
- 7 **Scott C**, Andrews D, Bulla S, Loerzel V. Teach-Back Method: Using a Nursing Education Intervention to Improve Discharge Instructions on an Adult Oncology Unit. *Clin J Oncol Nurs* 2019; **23**: 288-294 [PMID: 31099800 DOI: 10.1188/19.CJON.288-294]
- 8 **Ye J**. Advancing Mental Health and Psychological Support for Health Care Workers Using Digital Technologies and Platforms. *JMIR Form Res* 2021; **5**: e22075 [PMID: 34106874 DOI: 10.2196/22075]
- 9 **Brambilla M**, Cannillo B, D'Alessio A, Matheoud R, Agliata MF, Carriero A. Patients undergoing multiphase CT scans and receiving a cumulative effective dose of ≥ 100 mSv in a single episode of care. *Eur Radiol* 2021; **31**: 4452-4458 [PMID: 33449187 DOI: 10.1007/s00330-020-07665-0]
- 10 **Yao L**, Petrosyan A, Fuangfa P, Lenchik L, Boutin RD. Diagnosing sarcopenia at the point of imaging care: analysis of clinical, functional, and opportunistic CT metrics. *Skeletal Radiol* 2021; **50**: 543-550 [PMID: 32892227 DOI: 10.1007/s00256-020-03576-9]
- 11 **Roseland ME**, Shankar PR, Houck G, Davenport MS. Targeting Missed Care Opportunities Using Modern Communication Methods: A Quality Improvement Initiative to Improve Access to CT and MRI Appointments. *Acad Radiol* 2022; **29**: 395-401 [PMID: 33762152 DOI: 10.1016/j.acra.2021.03.008]
- 12 **Cutilli CC**. Excellence in Patient Education: Evidence-Based Education that "Sticks" and Improves Patient Outcomes. *Nurs Clin North Am* 2020; **55**: 267-282 [PMID: 32389259 DOI: 10.1016/j.cnur.2020.02.007]
- 13 **Shersher V**, Haines TP, Sturgiss L, Weller C, Williams C. Definitions and use of the teach-back method in healthcare consultations with patients: A systematic review and thematic synthesis. *Patient Educ Couns* 2021; **104**: 118-129 [PMID: 32798080 DOI: 10.1016/j.pec.2020.07.026]
- 14 **Anderson KM**, Leister S, De Rego R. The 5Ts for Teach Back: An Operational Definition for Teach-Back Training. *Health Lit Res Pract* 2020; **4**: e94-e103 [PMID: 32293689 DOI: 10.3928/24748307-20200318-01]
- 15 **Bodenheimer T**. Teach-Back: A Simple Technique to Enhance Patients' Understanding. *Fam Pract Manag* 2018; **25**: 20-22 [PMID: 29989780]
- 16 **Arnaboldi P**, Oliveri S, Vergani L, Marton G, Guidi P, Busacchio D, Didier F, Pravettoni G. The clinical-care focused psychological interview (CLiC): a structured tool for the assessment of cancer patients' needs. *Ecancermedicalscience* 2020; **14**: 1000 [PMID: 32153655 DOI: 10.3332/ecancer.2020.1000]
- 17 **Baker C**, Rose ML, Ryan B, Worrall L. Barriers and facilitators to implementing stepped psychological care for people with aphasia: Perspectives of stroke health professionals. *Top Stroke Rehabil* 2021; **28**: 581-593 [PMID: 33232219 DOI: 10.1080/10749357.2020.1849952]
- 18 **Talevski J**, Wong Shee A, Rasmussen B, Kemp G, Beauchamp A. Teach-back: A systematic review of implementation and impacts. *PLoS One* 2020; **15**: e0231350 [PMID: 32287296 DOI: 10.1371/journal.pone.0231350]
- 19 **Yen PH**, Leasure AR. Use and Effectiveness of the Teach-Back Method in Patient Education and Health Outcomes. *Fed Pract* 2019; **36**: 284-289 [PMID: 31258322]
- 20 **Klingbeil C**, Gibson C. The Teach Back Project: A System-wide Evidence Based Practice Implementation. *J Pediatr Nurs* 2018; **42**: 81-85 [PMID: 30219303 DOI: 10.1016/j.pedn.2018.06.002]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
Telephone: +1-925-3991568
E-mail: bpgoffice@wjgnet.com
Help Desk: <https://www.f6publishing.com/helpdesk>
<https://www.wjgnet.com>

