

World Journal of *Clinical Cases*

World J Clin Cases 2022 September 26; 10(27): 9550-9969



Contents

Thrice Monthly Volume 10 Number 27 September 26, 2022

OPINION REVIEW

- 9550** Psychiatric disorders and pain: The recurrence of a comorbidity
Vyshka G

REVIEW

- 9556** Cardiovascular disease and COVID-19, a deadly combination: A review about direct and indirect impact of a pandemic
Vidal-Perez R, Brandão M, Pazdernik M, Kresoja KP, Carpenito M, Maeda S, Casado-Arroyo R, Muscoli S, Pöss J, Fontes-Carvalho R, Vazquez-Rodriguez JM
- 9573** Molecular factors, diagnosis and management of gastrointestinal tract neuroendocrine tumors: An update
Pavlidis ET, Pavlidis TE

MINIREVIEWS

- 9588** Human-induced pluripotent stem cell-atrial-specific cardiomyocytes and atrial fibrillation
Leowattana W, Leowattana T, Leowattana P
- 9602** COVID-19 and the cardiovascular system-current knowledge and future perspectives
Chatzis DG, Magounaki K, Pantazopoulos I, Bhaskar SMM

ORIGINAL ARTICLE

Case Control Study

- 9611** PDCA nursing in improving quality management efficacy in endoscopic submucosal dissection
He YH, Wang F

Retrospective Study

- 9619** Impact of COVID-19 pandemic on the ocular surface
Marta A, Marques JH, Almeida D, José D, Sousa P, Barbosa I
- 9628** Anatomy and clinical application of suprascapular nerve to accessory nerve transfer
Wang JW, Zhang WB, Li F, Fang X, Yi ZQ, Xu XL, Peng X, Zhang WG
- 9641** Therapeutic effect of two methods on avulsion fracture of tibial insertion of anterior cruciate ligament
Niu HM, Wang QC, Sun RZ
- 9650** Efficacy of transcatheter arterial chemoembolization using pirarubicin-loaded microspheres combined with lobaplatin for primary liver cancer
Zhang C, Dai YH, Lian SF, Liu L, Zhao T, Wen JY

- 9657** Prognostic significance of sex determining region Y-box 2, E-cadherin, and vimentin in esophageal squamous cell carcinoma

Li C, Ma YQ

- 9670** Clinical characteristics and prognosis of orbital solitary fibrous tumor in patients from a Chinese tertiary eye hospital

Ren MY, Li J, Wu YX, Li RM, Zhang C, Liu LM, Wang JJ, Gao Y

Observational Study

- 9680** Altered heart rate variability and pulse-wave velocity after spinal cord injury

Tsou HK, Shih KC, Lin YC, Li YM, Chen HY

- 9693** Intra and extra pelvic multidisciplinary surgical approach of retroperitoneal sarcoma: Case series report

Song H, Ahn JH, Jung Y, Woo JY, Cha J, Chung YG, Lee KH

META-ANALYSIS

- 9703** Meta-analysis of gemcitabine plus nab-paclitaxel combined with targeted agents in the treatment of metastatic pancreatic cancer

Li ZH, Ma YJ, Jia ZH, Weng YY, Zhang P, Zhu SJ, Wang F

- 9714** Clinical efficacy analysis of mesenchymal stem cell therapy in patients with COVID-19: A systematic review

Cao JX, You J, Wu LH, Luo K, Wang ZX

CASE REPORT

- 9727** Treatment of gastric cancer with dermatomyositis as the initial symptom: Two case reports and review of literature

Sun XF, Gao XD, Shen KT

- 9734** Gallbladder hemorrhage—An uncommon surgical emergency: A case report

Valenti MR, Cavallaro A, Di Vita M, Zanghi A, Longo Trischitta G, Cappellani A

- 9743** Successful treatment of stage IIIB intrahepatic cholangiocarcinoma using neoadjuvant therapy with the PD-1 inhibitor camrelizumab: A case report

Zhu SG, Li HB, Dai TX, Li H, Wang GY

- 9750** Myocarditis as an extraintestinal manifestation of ulcerative colitis: A case report and review of the literature

Wang YY, Shi W, Wang J, Li Y, Tian Z, Jiao Y

- 9760** Endovascular treatment of traumatic renal artery pseudoaneurysm with a Stanford type A intramural haematoma: A case report

Kim Y, Lee JY, Lee JS, Ye JB, Kim SH, Sul YH, Yoon SY, Choi JH, Choi H

- 9768** Histiocytoid giant cellulitis-like Sweet syndrome at the site of sternal aspiration: A case report and review of literature

Zhao DW, Ni J, Sun XL

- 9776** Rare giant corneal keloid presenting 26 years after trauma: A case report
Li S, Lei J, Wang YH, Xu XL, Yang K, Jie Y
- 9783** Efficacy evaluation of True Lift®, a nonsurgical facial ligament retightening injection technique: Two case reports
Huang P, Li CW, Yan YQ
- 9790** Synchronous primary duodenal papillary adenocarcinoma and gallbladder carcinoma: A case report and review of literature
Chen J, Zhu MY, Huang YH, Zhou ZC, Shen YY, Zhou Q, Fei MJ, Kong FC
- 9798** Solitary fibrous tumor of the renal pelvis: A case report
Liu M, Zheng C, Wang J, Wang JX, He L
- 9805** Gastric metastasis presenting as submucosa tumors from renal cell carcinoma: A case report
Chen WG, Shan GD, Zhu HT, Chen LH, Xu GQ
- 9814** Laparoscopic correction of hydronephrosis caused by left paraduodenal hernia in a child with cryptorchism: A case report
Wang X, Wu Y, Guan Y
- 9821** Diagnosed corrected transposition of great arteries after cesarean section: A case report
Ichii N, Kakinuma T, Fujikawa A, Takeda M, Ohta T, Kagimoto M, Kaneko A, Izumi R, Kakinuma K, Saito K, Maeyama A, Yanagida K, Takeshima N, Ohwada M
- 9828** Misdiagnosis of an elevated lesion in the esophagus: A case report
Ma XB, Ma HY, Jia XF, Wen FF, Liu CX
- 9834** Diagnostic features and therapeutic strategies for malignant paraganglioma in a patient: A case report
Gan L, Shen XD, Ren Y, Cui HX, Zhuang ZX
- 9845** Infant with reverse-transcription polymerase chain reaction confirmed COVID-19 and normal chest computed tomography: A case report
Ji GH, Li B, Wu ZC, Wang W, Xiong H
- 9851** Pulmonary hypertension secondary to seronegative rheumatoid arthritis overlapping antisynthetase syndrome: A case report
Huang CY, Lu MJ, Tian JH, Liu DS, Wu CY
- 9859** Monitored anesthesia care for craniotomy in a patient with Eisenmenger syndrome: A case report
Ri HS, Jeon Y
- 9865** Emergency treatment and anesthesia management of internal carotid artery injury during neurosurgery: Four case reports
Wang J, Peng YM

- 9873** Resolution of herpes zoster-induced small bowel pseudo-obstruction by epidural nerve block: A case report
Lin YC, Cui XG, Wu LZ, Zhou DQ, Zhou Q
- 9879** Accidental venous port placement *via* the persistent left superior vena cava: Two case reports
Zhou RN, Ma XB, Wang L, Kang HF
- 9886** Application of digital positioning guide plates for the surgical extraction of multiple impacted supernumerary teeth: A case report and review of literature
Wang Z, Zhao SY, He WS, Yu F, Shi SJ, Xia XL, Luo XX, Xiao YH
- 9897** Iatrogenic aortic dissection during right transradial intervention in a patient with aberrant right subclavian artery: A case report
Ha K, Jang AY, Shin YH, Lee J, Seo J, Lee SI, Kang WC, Suh SY
- 9904** Pneumomediastinum and subcutaneous emphysema secondary to dental extraction: Two case reports
Ye LY, Wang LF, Gao JX
- 9911** Hemorrhagic shock due to submucosal esophageal hematoma along with mallory-weiss syndrome: A case report
Oba J, Usuda D, Tsuge S, Sakurai R, Kawai K, Matsubara S, Tanaka R, Suzuki M, Takano H, Shimoizawa S, Hotchi Y, Usami K, Tokunaga S, Osugi I, Katou R, Ito S, Mishima K, Kondo A, Mizuno K, Takami H, Komatsu T, Nomura T, Sugita M
- 9921** Concurrent severe hepatotoxicity and agranulocytosis induced by *Polygonum multiflorum*: A case report
Shao YL, Ma CM, Wu JM, Guo FC, Zhang SC
- 9929** Transient ischemic attack after mRNA-based COVID-19 vaccination during pregnancy: A case report
Chang CH, Kao SP, Ding DC
- 9936** Drug-induced lung injury caused by acetaminophen in a Japanese woman: A case report
Fujii M, Kenzaka T
- 9945** Familial mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episode syndrome: Three case reports
Yang X, Fu LJ
- 9954** Renal pseudoaneurysm after rigid ureteroscopic lithotripsy: A case report
Li YH, Lin YS, Hsu CY, Ou YC, Tung MC

LETTER TO THE EDITOR

- 9961** Role of traditional Chinese medicine in the initiative practice for health
Li Y, Li SY, Zhong Y
- 9964** Impact of the COVID-19 pandemic on healthcare workers' families
Helou M, El Osta N, Husni R

- 9967 Transition beyond the acute phase of the COVID-19 pandemic: Need to address the long-term health impacts of COVID-19

Tsioutis C, Tofarides A, Spernovasilis N

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Yusuf Tutar, PhD, Chairman, Director, Full Professor, Department of Basic Pharmaceutical Sciences, Division of Biochemistry, University of Health Sciences, Istanbul 34668, Turkey. ytutar@outlook.com

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: *Ying-Yi Yuan*; Production Department Director: *Xiang Li*; 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

September 26, 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>



Case Control Study

PDCA nursing in improving quality management efficacy in endoscopic submucosal dissection

Yan-Hua He, Fang Wang

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): B
Grade C (Good): C
Grade D (Fair): 0
Grade E (Poor): 0

P-Reviewer: Ebigbo A, Germany;
Kato M, Japan

Received: June 19, 2022

Peer-review started: June 19, 2022

First decision: July 26, 2022

Revised: August 4, 2022

Accepted: August 16, 2022

Article in press: August 16, 2022

Published online: September 26, 2022



Yan-Hua He, Fang Wang, Digestive Endoscopy Center, The First Affiliated Hospital of Soochow University, Suzhou 215006, Jiangsu Province, China

Corresponding author: Fang Wang, MBChB, Nurse, Digestive Endoscopy Center, The First Affiliated Hospital of Soochow University, No. 899 Pinghai Road, Suzhou 215006, Jiangsu Province, China. fangfang7595@163.com

Abstract

BACKGROUND

Endoscopic submucosal dissection (ESD) is a common surgical strategy for the treatment of early gastrointestinal tumors and precancerous lesions. PDCA nursing can effectively prevent potential risks in the nursing process, protect patient privacy, and improve patient satisfaction, nursing integrity, and service quality.

AIM

To explore the effects of PDCA nursing model on the quality management of gastrointestinal ESD, the 36-item Short-Form Health Survey (SF-36) score, and negative emotions.

METHODS

A total of 178 patients who underwent ESD between January 2020 and January 2021 were divided into two groups. The usual care mode was the control group, with 80 cases from January to July 2020; from July 2020 to January 2021, 98 patients were enrolled in the PDCA care mode as the research group. The length of hospital stay and the costs of the two groups were statistically analyzed. The visual analog scale (VAS), SF-36 score, Zung self-rating scale for anxiety and depression, and postoperative complications were also assessed.

RESULTS

The length of hospitalization and cost in the research group were lower than in the control group ($P < 0.05$), and the VAS scores were lower than those before care ($P < 0.05$). Moreover, the VAS score of the research group was lower than that of the control group ($P < 0.05$). The SF-36 scores for physical function, role status, social function, pain, mental health, and physical strength were higher in the research group than in the control group ($P < 0.05$). Depression and anxiety scores of the research group were lower than those of the control group ($P < 0.05$). The postoperative complication rate in the research group (6.12%) was lower than in

the control group (32.50%) ($P < 0.05$).

CONCLUSION

PDCA nursing can improve the quality of management of ESD surgery, shorten the length of hospital stay and cost, reduce the VAS and Zung scale scores to alleviate adverse emotions, improve the SF-36 score, and reduce postoperative complications.

Key Words: PDCA care; Endoscopic submucosal dissection; 36-item Shot-Form Health Survey; Zung scale score; Postoperative complications

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

Core Tip: PDCA nursing can effectively shorten the length of hospital stay and hospitalization costs, reduce the visual analog scale and Zung scale scores, relieve the pain and negative emotions of patients, improve the 36-item Shot-Form Health Survey score, reduce the occurrence of postoperative complications, and significantly impact the quality management of gastrointestinal endoscopic submucosal dissection.

Citation: He YH, Wang F. PDCA nursing in improving quality management efficacy in endoscopic submucosal dissection. *World J Clin Cases* 2022; 10(27): 9611-9618

URL: <https://www.wjgnet.com/2307-8960/full/v10/i27/9611.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i27.9611>

INTRODUCTION

Endoscopic submucosal dissection (ESD) is a common surgical strategy with light trauma, safety, curative effects, and wide clinical application for the treatment of early cancerous or precancerous lesions of the digestive tract, but it requires advanced technology[1]. First, the operating room should be fully equipped with medical staff and treatment accessories. Second, the operators should be proficient in various endoscopic hemostasis and titanium sutures, should have received comprehensive ESD training and be able to perform ESD independently[2]. However, postoperative complications affect the postoperative recovery of all clinical operations[3], including ESD. Multiple complications of ESD place higher demands on operating room nurses. They provide targeted psychological guidance to people with disabilities before surgery, improve various preoperative preparations, and closely observe postoperative conditions, which contribute to the smooth progress of surgery[4]. The key to the success of the operation is tacit cooperation between the operator and nurse so that the lesions can be safely resected, and complications can be reduced or avoided. Therefore, effective cooperation between nurses and meticulous and comprehensive care are necessary for successful surgery[5]. Recently, with the continuous improvement in medical levels, PDCA is more effective. It mainly represents the four stages of nursing work: plan (P), DO (D), check (C), and ACT (A). Compared to traditional clinical nursing management, the PDCA cycle management model can effectively improve the quality of hospital nursing work, enhance nurses' teamwork ability, improve their work efficiency and enthusiasm, increase the sense of accomplishment in clinical nursing, effectively prevent potential risks in the nursing process, and protect patients' privacy. It also improves patient satisfaction, nursing integrity, and service quality[6,7]. This study mainly discusses the effect of PDCA nursing on the quality management of ESD surgery under gastrointestinal endoscopy and its impact on invalid 36-item Shot-Form Health Survey (SF-36) scores and negative emotions to provide a reference for the quality management of ESD surgery under clinical gastrointestinal endoscopy.

MATERIALS AND METHODS

General information

A total of 178 patients who underwent ESD in our hospital between January 2020 and January 2021 were selected as research subjects. The inclusion criteria were as follows: (1) The people with disabilities had no mental or cognitive impairment; (2) The ability to cooperate with the study, good understanding, and communication; (3) All people with disabilities provided informed consent before participation in the study; (4) There were no contraindications to ESD; and (5) The general information was complete. The exclusion criterion was the presence of other major diseases. All people with

disabilities were divided into two groups based on July 2020 boundary. From January 2020 to July 2020, the usual care mode was set as the control group, with the total of 80 cases. From July 2020 to January 2021, the PDCA care mode was established as the research group, with a total of 98 cases. In the control group, there were 28 females and 52 males, the age ranged from 23 to 67 years old, with composite life of 47.09 ± 6.04 years old, and lesions included 33 rectal lesions, 27 gastric lesions, and 20 esophageal lesions. The research group included 64 males and 34 females, the age ranged from 22 to 65 years old, with composite life 46.17 ± 5.92 years old, and the lesions included 41 rectal lesions, 35 gastric lesions, and 22 esophageal lesions. There was no significant difference between the two groups ($P > 0.05$), indicating that the results were comparable. This study complied with the principles of the Declaration of Helsinki.

The care of the control group

The control group adopted the usual care mode, which mainly included the following: (1) Preoperative care: when the patient is admitted to the hospital, the nursing staff should follow the doctor's advice, assist the patient in completing routine blood tests, chest radiography, and other related examinations, check the equipment and drugs required for the operation and report to the doctor. The patient then confirms the operation information; (2) Intraoperative care: the nursing staff should actively cooperate with the doctor to disinfect and lay towels, cooperate with the doctor to operate, follow the aseptic principle, and closely observe the working state of the system and the patient's state, and deal with emergencies timely; (3) Postoperative care: nurses should observe the patient's vital signs, keep the patient in the postoperative position, prevent aspiration caused by anesthesia, and closely observe the patient's abdominal pain, surgical wound, and other abdominal conditions. Nurses should also guide patients and their families to pay attention to the placement of drainage tubes to prevent deformation and guide them to go to bed after the operation to promote gastrointestinal movement and blood circulation and reduce complications; and (4) Psychological care: For fear, anxiety, and other negative psychologies of people with disabilities before and after the operation, the nurses should explain the successful cases to the people with disabilities, inform the people with disabilities of the general process and the possible situations of the operation, and indicate that the nurses have taken sufficient countermeasures to obtain the trust of those people, eliminate their negative psychology, and improve their cooperation.

The care of the research group

The research group adopted a PDCA care mode based on the control group. The details are as follows: (1) Planning stage (P): The head nurse held a care meeting to investigate the current situation of ESD surgery, including the requirements for nurses, the content of perioperative care for people with disabilities, and medication guidance, summarized the experience and continued to improve the deficiencies in the previous nursing process. The nursing staff established a continuous nursing quality improvement team headed by a head nurse, regularly controlled the nursing quality of the department, and improved the head nurse functions. For problems and details in nursing, such as preoperative psychological care, experienced nurses should conduct psychological assessments before psychological counseling, and the preparation of preoperative instruments and drugs should be checked repeatedly and communicated to doctors and anesthesiologists promptly. Adverse reactions and psychological changes that invalidate postoperative drainage in life and care are often ignored by nurses and their families. Nurses should understand possible adverse reactions and psychological changes of people with disabilities in advance, formulate countermeasures, and strive to effectively control every aspect of the nursing process; (2) Implementation stage (D): Nurses should improve various systems, implement their duties, improve the rationality of shift scheduling, ensure the implementation of various nursing tasks, and adjust human resources for shortage positions. The head nurse supervised the implementation of nursing measures and conducted regular spot checks. Before ESD, nurses were uniformly trained; (3) Inspection stage (C): During the implementation process, the head nurse improved the problems, supervised and spot-checked the improvement, observed whether the nurses implemented the nursing measures according to the nursing plan, held regular meetings, constantly summarized and improved the problems encountered in the implementation process, and maintained records. The head nurse also ensured a timely understanding of the dissatisfaction of people with disabilities and their families, implementing nursing measures, and making corrections; and (4) Processing stage (A): The head nurse regularly announced the quality of department nursing, surgical nursing measures, patient satisfaction, etc., and scored these items. Items with a score greater than 90 were regarded as an important part of the nursing plan. They explained and corrected most existing problems and transferred the remaining problems to the next PDCA cycle as the quality control focus of the next cycle.

Observation indicators

(1) The duration of hospitalization and expenses for the two groups were counted; (2) Pain score: Using the visual analog scale (VAS)[8], taking a 10 cm long walking scale with 10 scales and a score ranging from 1 to 10, the patient was instructed to mark the position of the scale that represented themselves. The pain level was scored according to the marked location, with higher scores indicating more severe

pain; (3) The quality of life was evaluated using the SF-36 scale[9]. The SF-36 is a medical outcome research scale developed by Stewart in 1988 and Boston Health Research in the United States. There were 36 items, including six dimensions: physical function, role status, social function, pain, mental health, and physical status. Each dimension was scored from 0 to 100. The score was proportional to the functional status; (4) Poor mood indicators. The Zung Anxiety and Depression Self-Rating Scale[10] was used to evaluate the patients' negative emotions. The Zung scale was used to evaluate the depression and anxiety subscales. The total possible score was 100. The higher the score, the more serious the negative emotion; and (5) Complication rate. The incidence of postoperative complications (infection, tissue damage, *etc.*) was compared between the two groups.

Statistical analysis

SPSS 20.0 software was used to analyze the data. n (%) is expressed as enumeration data, and the χ^2 test was used. mean \pm SD were expressed as measurement data. The t -test was used for comparisons between groups, and statistical significance was set at $P < 0.05$.

RESULTS

Comparison of time of hospitalization and hospitalization costs between the two groups of people with disabilities

The duration and cost of hospitalization in the research group were lower than those in the control group ($P < 0.05$) (Table 1).

Comparison of VAS scores before and after care in the two groups

The VAS scores of the two groups of people with disabilities after care were lower than those before care ($P < 0.05$), and the VAS scores of the research group after care were lower than those of the control group ($P < 0.05$) (Table 2).

Comparison of SF-36 scores in the two groups after care

After care, SF-36 scores for physical function, role status, social function, pain, mental health, and physical condition were higher in the research group than in the control group ($P < 0.05$) (Table 3).

Comparison of Zung scale scores between the two groups of people with disabilities after care

Depression and anxiety scores after care were lower in the research group than in the control group ($P < 0.05$) (Table 4).

Comparison of postoperative complications between the two groups of people with disabilities

The incidence of postoperative complications was lower in the research group (6.12%) than in the control group (32.50%) ($P < 0.05$) (Table 5).

DISCUSSION

ESD was based on endoscopic mucosal resection. ESD is less traumatic and painful than the traditional surgery. It is a minimally invasive surgery that can promote recovery of people with disabilities after surgery. For patients with digestive tract disease, ESD can ensure normal gastrointestinal function and postoperative quality of life while removing the lesions[11]. However, in the process of implementing ESD, the surgical technique is difficult and takes a long time, with many complications. Therefore, it is necessary to strengthen the perioperative care of ESD people with disabilities, identify the causes of postoperative complications, and implement effective nursing measures[12]. The PDCA management aimed to formulate a nursing plan in the early stages of nursing, the nursing plan in the execution stage, determine the implementation steps of the nursing plan in the inspection stage, check the nursing plan in the action stage, and improve it. Therefore, the PDCA management model was adopted for ESD people with disabilities, the causes of postoperative complications were analyzed, effective prevention and intervention measures were formulated, and the implementation effect was continuously revised to further improve the nursing process for postoperative complications[13].

The results of this study showed that the length of stay, charge of hospitalization, VAS score, and Zung scale score in the research group were lower than those in the control group ($P < 0.05$), which proved that the PDCA nursing model affected the details and improvement of nursing measures and provided a timely understanding of the people with disabilities. Intraoperative problems and postoperative discomfort can be resolved in time; the physical and mental state, prognosis, and the quality of life of people with disabilities can be improved; and the time and charge of hospitalization can be shortened. Therefore, it is essential to conserve medical resources. Pain and adverse effects of

Table 1 Comparison of time of hospitalization and hospitalization costs between

Groups	Time of hospitalization (d)	Hospitalization costs (Ten thousand)
Research group (<i>n</i> = 98)	4.39 ± 1.03	1.79 ± 0.03
Control group (<i>n</i> = 80)	5.69 ± 1.06	2.64 ± 0.05
<i>t</i> value	8.249	140.234
<i>P</i> value	0.000	0.000

the two groups of people with disabilities

Table 2 Comparison of visual analog scale scores before and after care in the two groups

Groups	VAS scores		<i>t</i> value	<i>P</i> value
	Before	After		
Research group (<i>n</i> = 98)	7.55 ± 0.50	4.94 ± 0.24	84.954	0.000
Control group (<i>n</i> = 80)	7.60 ± 0.49	6.16 ± 0.37	43.173	0.000
<i>t</i> value	0.654	26.508		
<i>P</i> value	0.514	0.000		

VAS: Visual analog scale.

Table 3 Comparison of the 36-item Short-Form Health Survey scores in the two groups after care

Groups	Physical function (score)	Role status (score)	Social function (score)	Pain (score)	Mental health (score)	Physical condition (score)
Research group (<i>n</i> = 98)	69.23 ± 5.12	75.06 ± 6.01	63.12 ± 4.23	70.24 ± 5.13	79.22 ± 7.03	64.15 ± 6.13
Control group (<i>n</i> = 80)	60.23 ± 6.12	68.23 ± 6.12	60.13 ± 5.19	65.23 ± 6.03	72.06 ± 7.04	58.23 ± 6.17
<i>t</i> value	10.697	7.480	4.235	5.989	6.755	6.397
<i>P</i> value	0.000	0.000	0.000	0.000	0.000	0.000

Table 4 Comparison of Zung scale scores between the two groups of people with disabilities after care

Groups	Depression scores	Anxiety scores
Research group (<i>n</i> = 98)	36.22 ± 4.06	47.16 ± 5.13
Control group (<i>n</i> = 80)	50.23 ± 4.16	53.26 ± 5.17
<i>t</i> value	22.638	7.864
<i>P</i> value	0.000	0.000

surgery can cause mood swings. The PDCA nursing model can provide psychological counseling to the patient, communicate the actual situation of the patient, effectively relieve the patient's emotional fluctuation, and elevate the patient's mood[14]. The results of this study also showed that the SF-36 scores of the research group after nursing were higher than those of the control group ($P < 0.05$), and the incidence of complications was lower than that in the control group ($P < 0.05$), indicating that the PDCA cycle nursing mode had a significant effect on improving the prognosis and the quality of life of patients who underwent ESD. The formulation of nursing plans and improvement of the nursing system can facilitate planned and targeted nursing work, which is conducive to the implementation of targeted nursing for people with disabilities while avoiding nursing blindness, reducing nursing errors, and implementing comprehensive and specific nursing interventions[15]. The active and effective implementation of measures, nursing management systems, a combination of nursing plans with the

Table 5 Comparison of postoperative complications between the two groups of people with disabilities, *n* (%)

Groups	Infection	Tissue damage	Overall incidence
Research group (<i>n</i> = 98)	4	2	6 (6.12)
Control group (<i>n</i> = 80)	10	5	15 (18.75)
<i>t</i> value			6.749
<i>P</i> value			0.009

actual nursing behaviors, strengthening of health education, psychological, behavioral, and dietary nursing interventions for people with disabilities, and strengthening the prevention of postoperative complications can improve physical and mental health of people with disabilities, promote disease recovery, and reduce postoperative complications[16]. Strengthening the inspection and supervision of nursing behavior would help in the timely identification of problems and present rectification suggestions, thus promoting the overall improvement of the quality of nursing management. During the intervention, possible risk issues in digestive endoscopy were classified and analyzed, and solutions were developed. Simultaneously, the operation of nursing staff and related equipment and medicines was strictly regulated to prevent the occurrence of adverse events, such as infections. Management measures were then assessed, and nursing efforts were regularly reviewed[17]. Finally, a meeting was held to discuss the problems that arise in the nursing process, conduct an in-depth analysis with examples, and develop methods for improvement, which would be incorporated into the next cycle of nursing. Therefore, the PDCA cycle mode not only improves the professional level and nursing quality of nurses but also prevents the leakage of patient privacy, increases the protection of people with disabilities, and provides them with more professional and standardized nursing services, thereby improving their quality of life[18].

The main limitation of this study is a small sample size, and future studies with larger sample sizes are needed to support the conclusions. Additionally, this study was conducted on a Chinese population, and the geographical area involved was not wide enough, which may result in cultural and ethnic differences. It is suggested that this study be conducted in other populations in the future.

CONCLUSION

In summary, PDCA nursing has a significant effect on the quality management of ESD surgery under gastrointestinal endoscopy, which can effectively shorten the length of hospital stay and hospitalization costs, reduce VAS and Zung scale scores, relieve the patient's negative emotions, improve their SF-36 scores, and reduce the occurrence of postoperative complications.

ARTICLE HIGHLIGHTS

Research background

Endoscopic submucosal dissection (ESD) is a common surgical strategy for the treatment of early gastrointestinal cancers or precancerous lesions and is widely used in clinical practice. The key to the success of the operation is tacit cooperation between surgeons and nurses so that the lesions can be safely excised, and the occurrence of complications can be reduced or avoided. Therefore, effective cooperation of nursing staff and meticulous and comprehensive nursing are necessary for the success of the surgery. Recently, with the continuous improvement in medical levels, PDCA has been found to be more effective. It can prevent potential risks in the nursing process, protect patient privacy, and improve patient satisfaction, nursing integrity, and service quality.

Research motivation

This study mainly discussed the effect of PDCA nursing on improving the quality management of ESD surgery under gastrointestinal endoscopy and its impact on the 36-item Short-Form Health Survey (SF-36) scores and negative emotions, to provide a reference for the quality management of ESD surgery under clinical gastrointestinal endoscopy.

Research objectives

This study aimed to explore the effect of the PDCA circulation (plan/do/check/act) nursing mode on improving the quality management of gastrointestinal ESD and its effect on the SF-36 score and negative emotions.

Research methods

Patients who underwent ESD surgery from January 2020 to January 2021 were divided into two groups: the control group was treated with the conventional nursing mode, and the study group was treated with the PDCA nursing mode. The length of hospital stay and expenses in the two groups were statistically analyzed. The visual analog scale (VAS) score, SF-36 score, Zung self-rating scale for anxiety and depression, and incidence of postoperative complications were assessed before and after nursing.

Research results

The length and cost of hospitalization in the research group were lower than those in the control group, and the VAS scores were lower than those before care. Moreover, the VAS score of the research group was lower than that of the control group. The SF-36 scores for physical function, role status, social function, pain, mental health, and physical strength were higher in the experimental group than in the control group. The depression and anxiety scores of the research group were lower than those of the control group. The postoperative complication rate in the research group was lower than the control group.

Research conclusions

PDCA nursing has a significant effect on the quality management of ESD surgery under gastrointestinal endoscopy, which can effectively shorten the length of hospital stay and hospitalization costs, reduce VAS and Zung scale scores, relieve patients' negative emotions, improve their SF-36 scores, and reduce the occurrence of postoperative complications.

Research perspectives

The quality management effect of PDCA nursing on gastrointestinal ESD surgery is remarkable as it can effectively shorten the time and charge of hospitalization, reduce the VAS and Zung scale scores, relieve the bad mood of people with disabilities, improve their SF-36 score, and reduce the occurrence of postoperative complications.

FOOTNOTES

Author contributions: Wang F conducted the experiments; He YH performed the data collection, collation, and analysis; He YH and Wang F jointly completed the writing of this manuscript.

Institutional review board statement: This study was approved by the Ethics Committee of the First Affiliated Hospital of Soochow University.

Informed consent statement: All participants signed an informed consent form before participating in the study.

Conflict-of-interest statement: The authors declare no conflict of interest.

Data sharing statement: No additional data are available.

STROBE statement: The authors have read the STROBE Statement checklist of items, and the manuscript was prepared and revised according to the STROBE Statement checklist of items.

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: Yan-Hua He 0000-0001-8299-8393; Fang Wang 0000-0002-8373-4610.

S-Editor: Wang JL

L-Editor: A

P-Editor: Wang JL

REFERENCES

- 1 Liu QY, Cheng Z, Yan QQ, Li SY, Xiao L, Liu HX. [Curative effect of ESD in the treatment of early upper gastrointestinal cancer and influence factors of quality of life after operation]. *Shiyong Aizheng Zazhi* 2020; **35**: 1493-1496 [DOI:

- 10.3969/j.issn.1001-5930.2020.09.027]
- 2 **Jin YC**, Zhao J, Zhou J. [Observation on therapeutic effects of endoscopic submucosal dissection in patients with early gastrointestinal cancer and precancerous lesions]. *Hebei Yixue* 2020; **26**: 1338-1343 [DOI: 10.3969/j.issn.1006-6233.2020.08.025]
- 3 **Kadota T**, Yoda Y, Hori K, Shinmura K, Oono Y, Ikematsu H, Yano T. Prophylactic steroid administration against strictures is not enough for mucosal defects involving the entire circumference of the esophageal lumen after esophageal endoscopic submucosal dissection (ESD). *Esophagus* 2020; **17**: 440-447 [PMID: 32172461 DOI: 10.1007/s10388-020-00730-z]
- 4 **Liu Y**, Lei SY, Wei N, Zhong ZH, Shi RH. [Effects of human-derived fibrin glue for preventing postoperative complications of endoscopic submucosal dissection for esophageal lesions]. *Zhonghua Xiaohua Neijing Zazhi* 2021; **38**: 882-887 [DOI: 10.3760/cma.j.cn321463-20210119-00815]
- 5 **Zhang XJ**, Xu XH, Liu SY. [Study on surgical cooperation and nursing effect of ERCP and ESD]. *Chongqing Yixue* 2020; **49**: 424-426
- 6 **Rai VK**, Sharma A, Thakur A. Quality Control of Nanoemulsion: by PDCA Cycle and 7QC Tools. *Curr Drug Deliv* 2021; **18**: 1244-1255 [PMID: 33538674 DOI: 10.2174/1567201818666210203180516]
- 7 **Pan N**, Luo YY, Duan QX. The Influence of PDCA Cycle Management Mode on the Enthusiasm, Efficiency, and Teamwork Ability of Nurses. *Biomed Res Int* 2022; **2022**: 9352735 [PMID: 35845933 DOI: 10.1155/2022/9352735]
- 8 **Meng CL**, Yu XF, Pan PF, Lei WA, Yue Y. [Effect of quantitative activity program intervention on postoperative pain score and rehabilitation in patients with gastric cancer]. *Zhongguo Zhongliu Linchuang Yu Kangfu* 2022; **29**: 621-624 [DOI: 10.13455/j.cnki.cjcor.2022.05.27]
- 9 **Liu R**, Zhang JF, Yan XL, Wen LY. [Comparative study of SF-36 and EQ-5D-5L in evaluating quality of life for patients with advanced schistosomiasis]. *Zhongguo Jishengchongxue Yu Jishengchongbing Zazhi* 2021; **39**: 639-646
- 10 **Gao N**, Lu HM, Wang XY, Liu S, Wang GF, Ren JH, Yan DS. [Healthy-related quality of life in patients with Crohn disease and its affecting factors]. *Zhonghua Xiaohua Neijing Zazhi* 2022; **39**: 489-492 [DOI: 10.3760/cma.j.cn321463-20210901-00848]
- 11 **Nishimura M**. ESD and Pit Pattern Diagnosis: Lessons from a Japanese Endoscopist Working in the United States. *Clin Colon Rectal Surg* 2020; **33**: 329-334 [PMID: 33162836 DOI: 10.1055/s-0040-1714235]
- 12 **Takamaru H**, Goto R, Yamada M, Sakamoto T, Matsuda T, Saito Y. Predicting and managing complications following colonoscopy: risk factors and management of advanced interventional endoscopy with a focus on colorectal ESD. *Expert Rev Med Devices* 2020; **17**: 929-936 [PMID: 32901531 DOI: 10.1080/17434440.2020.1819788]
- 13 **Wu LW**. [Methods and effects of PDCA cycle in the implementation of nursing quality management in the operating room]. *Linchuang Yiyao Wenxian Dianzi Zazhi* 2019; **6**: 182-183 [DOI: 10.3877/j.issn.2095-8242.2019.09.138]
- 14 **Gao Q**. [Application of PDCA nursing quality management in perioperative period of gastrointestinal patients and its influence on quality of life]. *Zhongguo Yaoqu Yu Linchuang* 2021; **21**: 1426-1427
- 15 **Jia WC**. [Analysis of the implementation effect of PDCA cycle method in nursing quality management in operating room]. *Shanxi Yiyao Zazhi* 2020; **49**: 1886-1887
- 16 **Qiu H**, Du W. Evaluation of the Effect of PDCA in Hospital Health Management. *J Healthc Eng* 2021; **2021**: 6778045 [PMID: 34966526 DOI: 10.1155/2021/6778045]
- 17 **Xu HM**. [Analysis of the application effect of PDCA cycle model in risk control of digestive endoscopy nursing]. *Linchuang Yiyao Wenxian Dianzi Zazhi* 2020; **7**: 120 [DOI: 10.16281/j.cnki.jocml.2020.07.102]
- 18 **Fang YY**. [Influence of PDCA cycle model in nursing risk control of digestive endoscopy on nursing risk, nursing quality and patient privacy]. *Guoji Huli Xue Zazhi* 2020; **39**: 2708-2711 [DOI: 10.3760/cma.j.cn221370-20181129-00839]



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>

