

Effectiveness of Behavioural Intervention on Anxiety and Tolerance among Gastroscopy Patients

Kowsalya .R¹, Akila .P², Malarvizhi .M³, Dr. A. Porkodi⁴

¹Student, Faculty of Nursing, Sri Ramachandra University, Chennai, Tamilnadu 600116, India

^{2,3}Lecturer, Faculty of Nursing, Sri Ramachandra University, Chennai, Tamilnadu 600116, India

⁴Reader, Sri Ramachandra College of Nursing, Porur, Chennai-600116, India

Abstract: *Gastroscopy is a widely used procedure in medicine today. It is the treatment of choice among patients with dyspepsia or reflex symptoms and is mandatory for precise diagnosis in upper gastrointestinal disorders. Globally, 750 gastroscopies per 100,000 populations are subjected per year. Aim of the study was to assess the effectiveness of behavioural intervention on anxiety and tolerance among patients subjected to gastroscopy. The research design adopted for this study was experimental pretest and posttest control group design. The tool used for this study was Spielberg's anxiety inventory scale STAI Y1 and behavioural distress form. Behavioural intervention was given to the patients in the study group with laptop assisted teaching, deep breathing exercise demonstration and pamphlet education. The study result showed that the mean value of anxiety in the study group decreased from 46.57 to 32.20 (p 0.000 level) and in the control group and there was no significant change in the mean score of anxiety. Also there was a significant difference in the posttest mean score of tolerance between the study and control group at p 0.000 level. So, behavioural intervention was found to be more effective in reducing the level of anxiety and improving the tolerance level among the patients subjected to gastroscopy.*

Keywords: Anxiety, Behavioural intervention, Gastroscopy and tolerance

1. Introduction

Gastroscopy is a widely used procedure in medicine today. It is the treatment of choice among patients with dyspepsia or reflex symptoms and is mandatory for precise diagnosis in upper gastrointestinal disorders. Globally, 750 gastroscopies per 100,000 populations are subjected per year (National Institute for health and clinical excellence, 2007) [1]. Approximately 3.5 million people underwent gastroscopy in United States in 2009 (National centre for health statistics) [2].

In India, the annual statistics of gastroscopy procedure is 1100 in the year 2009-2010 (Father Muller Medical College Hospital, Karnataka) [3]. In Sri Ramachandra Hospital, about 4,414 patients were subjected to gastroscopy per year and 15-18 gastroscopies per day in Sri Ramachandra Medical Centre, in all, a total of 3548 gastroscopies were done during the year 2013, in that 1099 were inpatients and remaining 2449 were outpatients (MRD, 2013).

Patients often experience anxiety prior to gastroscopy due to fear. Inadequate information about gastroscopy may lead to poor compliance and reduce the patients' tolerance. Adequate information improves the co-operation of the patient during the gastroscopy and reducing the need to repeat the gastroscopy and its associated cost [4].

Gebbensleben (2012) stated that 67% of the patients subjected to gastroscopy had high level of anxiety about the investigation before GI Endoscopy. Patient's tolerance of gastroscopy is mainly influenced by anxiety. Anxiety may result due to lack of knowledge regarding the procedure, which may lead to more difficult and painful procedure. So, relieving the anxiety before gastroscopy is done by using information or explanation regarding the procedure in written or oral form and teaching relaxation and coping techniques to the patients are essential [5-7].

Hauss&Chengarov (2012) assessed the experience with "drop in" gastroscopy and gastroscopy by appointment, respectively. The great satisfaction was expressed by patients and gastroenterologist. So the researcher found that "drop in" was caused by unpredictable working days with lack of adequate staff [8]. So the aim of the study was to assess the effectiveness of behavioural intervention on anxiety and tolerance among patients subjected to gastroscopy.

2. Problem Statement

A study to assess the effectiveness of behavioural intervention on anxiety and tolerance among patients subjected to gastroscopy in selected teaching hospital.

3. Methodology

3.1 Research Design

The research design adopted by the investigator was experimental design (Pretest-Posttest control group design). This study instituted into two groups, one as a study group where they were instructed to practice deep breathing exercise and the other group who received the routine care.

3.2 Setting

The study was conducted in the Endoscopy department. It is a unit situated in the ground floor, Sri Ramachandra Hospital, "G" Block. It has gastroscopy, colonoscopy room and the waiting area. The setting of the study was gastroscopy procedure room. Nearly 15-20 gastroscopy and 2-4 colonoscopy procedures were done per day.

3.3 Population

The target population for this study was patients aged 20-60 years subjected for gastroscopy and who fulfilled the

inclusion criteria, whereas the accessible population of the study were those who are enduring the same condition and subjected for gastroscopy at Sri Ramachandra Hospital, „G“ Block, Porur, Chennai.

3.4 Sample Size

The sample size in this study included 60 patients who were subjected for gastroscopy. The selected subjects were assigned to study and control groups (n = 30) in each group.

3.5 Sampling Technique

Simple random by lottery method. Patients who fulfilled the inclusion criteria were included in this study.

3.5.1. Inclusion Criteria

Patients who are

- male or female
- aged between 20-60 years.
- able to understand and speak Tamil and/or English.
- mentally alert and able to communicate freely.
- willing to participate in the study.

3.5.2. Exclusion criteria

Patients

- posted for emergency gastroscopy.
- who are sedated/confused.
- already exposed to gastroscopy.
- admitted in hospital.

3.6 Instrument

Background variable, state trait anxiety inventory scale (STAI Y1) & behavioural distress form.

3.6.1. Background Variables.

It consists of two parts.

Part 1. Demographic variables such as age, gender, education, occupation, residence, marital status and income.

Part 2. Clinical variables such as diagnosis, co-morbid condition and family history.

3.6.2. Anxiety.

The State –Trait Anxiety Inventory measures the state and trait anxiety (Speilberger, Gorsuch, Lushene, Vagg& Jacobs, 1983) [9], [10]. It clearly differentiates between the temporary conditions of “state anxiety”.

The scale has both positive and negative statements. The positive statements were 3, 4, 6, 7, 9, 12, 13, 14, 17 & 18 the options were scored as 1, 2, 3 & 4. The negative statements were 1, 2, 5, 8, 10, 11, 15, 16, 19 & 20, therefore reverse scoring was used.

3.6.3. Tolerance

A behavioural sign of distress is measured using a 5 point Likert scale consisting of 4 items; those are related to nausea/vomiting, body movements, pain gestures and attempts to remove the tube. A pain gestures has three sub components facial grimace, lacrimation of eye and moaning. It has five responses as never, almost never, somewhat, often

and very often, which is observed at the time of gastroscopy procedure.

4. Data Analysis

Data was analysed by using descriptive and inferential statistics.

Descriptive statistics. Frequency, percentage, mean and standard deviation were used to describe the background variables, level of anxiety and tolerance of patients subjected to gastroscopy.

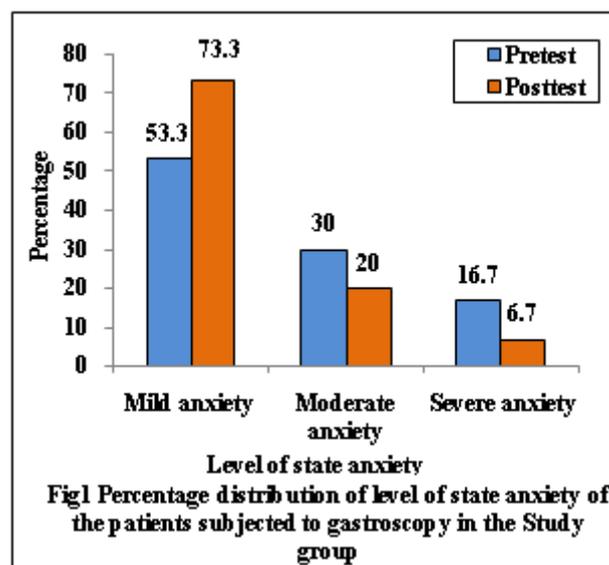
Inferential Statistics. Paired „t“ test was used to find out the changes in the level of anxiety and tolerance within the groups after behavioural intervention and Independent „t“ test was used to compare the effectiveness of behavioural intervention on anxiety.

5. Results

Figure 1 shows that 53.3% of the study group had mild anxiety, 30% had moderate anxiety and 16.7% had severe anxiety in pretest. After the behavioural intervention, 73.3% of the study group patients had a mild anxiety, 20% had moderate anxiety and 6.7% had severe anxiety in the posttest.

The Figure 2 reveals that 90% of the patients had a good tolerance. 10% of them had moderate tolerance in the study group during the posttest. In the control group, 40% of them had good tolerance, 46.7% had moderate tolerance and 13.3% had severe tolerance.

The findings of table 1 and 2 shows that there was a statistically significant difference in the mean anxiety and tolerance scores of the study group at p<0.0001 level.



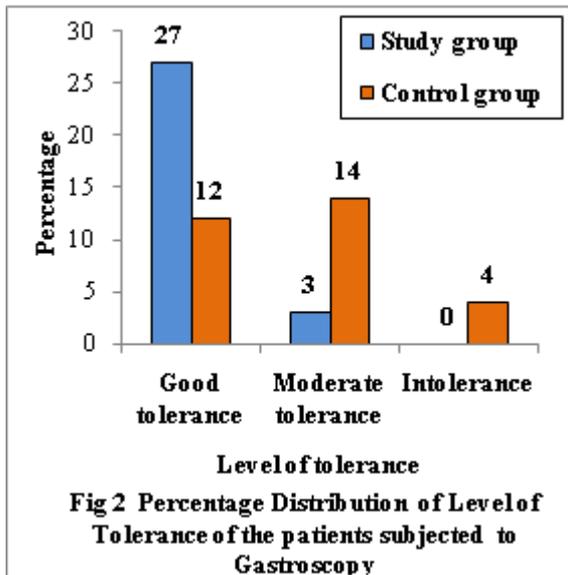


Fig 2 Percentage Distribution of Level of Tolerance of the patients subjected to Gastroscopy

Table 1: Comparison of mean scores of state anxiety between the study group and control group during the Pretest and Posttest (N=60)

Level of state anxiety	Study group (n=30)		Control group (n=30)		Independent „t“ test & p value
	Mean	SD	Mean	SD	
Pretest	46.57	15.028	51.93	17.659	-1.268 0.210 (NS)
Posttest	32.20	16.260	48.10	13.991	-4.060 0.000***

NS - Non Significant, *** $p < 0.0001$

Table 2: Comparison of mean scores of tolerance of the participants in the study and the control group during the gastroscopy (N=60)

Level of tolerance	study group (n=30)		Control group (n=30)		Independent ‘t’ test & p value
	Mean	SD	Mean	SD	
Good tolerance	2.96	2.488	5.17	2.037	-4.590 0.000***
Moderate tolerance	13	0.000	12.93	1.940	
Intolerance	0	0	18.5	1.000	

*** $p < 0.0001$

6. Discussion

The results compared with the anxiety and tolerance of the gastroscopy patients showed that few behavioural distresses during the procedure and shorter time to induce the gastroscopy. The study revealed that there was no statistical significant difference between the groups. (Maguire & Walsh, 2004) [11].

The effect of preparatory education programme on discomfort and retching of examinees during upper gastrointestinal endoscopy among subjects aged 60 years Multiple logistic regression analysis showed that the preparatory educational programme significantly relieved the discomfort of examinees during endoscopy ($p = 0.028$). Thereby they concluded that the preparatory education programme could relieve the discomfort caused by endoscopy (Ju-Yeon Lee, Min et al., 2012) [12].

The Posttest mean difference (14.37) of anxiety levels in the study group and (3.83) in the control group so the improvement was due to behavioural intervention of deep breathing exercise adhered by the study group.

7. Nursing Implication

7.1. Nursing Practice

Many patients after the behavioural intervention had reduced anxiety and improved tolerance on gastroscopy. This requires the nurse to be competent with the methods to reduce the anxiety on gastroscopy so as to improve the tolerance and patient cooperation during the gastroscopy to the endoscopist. Laptop assisted teaching with deep breathing exercise does not cost the patients and is effective to improve the knowledge on gastroscopy and remove fear and anxiety towards the gastroscopy.

7.2. Nursing Education

The nursing curriculum consists of knowledge related to health information and appropriate strategy for imparting that knowledge. Nursing Education should emphasise more on imparting health information regarding behavioural intervention on prevention of anxiety regarding the diagnostic procedure. The preparatory informatics can be used by the nursing personnel for educating patients in the endoscopy unit.

7.3. Nursing Administration

In the endoscopy unit, it refers to the nurse practitioner who takes interest in providing information to patients and their relatives, all about gastroscopy, its benefits, effects and outcomes and also the possible complication of gastroscopy. The nurse administrator must take up the challenges to organize continuing nursing education programmes for the nursing personnel and motivate them to prepare instructional material like laptop assisted teaching and informational booklet and to conduct patient educational programme beneficial to the patients and the community. The nurse administrator could also prepare written policies about the evidence based practice.

7.4. Nursing Research

There was no standardized tool to assess the level of tolerance among patients undergoing gastroscopy. The researcher developed the behavioural sign of distress checklist to assess the tolerance. Further research can be conducted on larger samples to promote the reliability and validity of this tool. So, the tool can be used in future.

8. Conclusion

The study concluded that the behavioural intervention was an effective method to reduce the anxiety and improve the tolerance of the patients subjected to gastroscopy. Anxiety is found to be more common among the patients subjected to gastroscopy. The present study findings suggest that behavioural intervention helps in reducing the level of anxiety and improving the level of tolerance in the patients subjected to gastroscopy. If the behavioural intervention is

given in an effective manner, it is one of the best choices of treatment for patients subjected to gastroscopy.

gastrointestinal endoscopy, *Korean J Family Medicine*, 33(4): 219-28.

9. Acknowledgement

The author would like to thank the management of Sri Ramachandra University and faculty of nursing for their support.

10. Funding

This research was a self-funded one and no grant was received for the same.

References

- [1] NICE. Upper GI endoscopy service commissioning guide(2007).
<http://www.nice.org.uk/usingguidance/commissioningg uides/uppergiendoscopyservices/uppergiendoscopyservi ces.jsp>
- [2] <http://www.gastroendonews.com/viewarticle.aspx?d=in>
- [3] http://www.rguhs.ac.in/cdc/onlinecdc/uploads/05_NO11 39182.doc
- [4] Abuksis, G., Mor, M., Segal N, Shemesh, I., Morad, I.A. (2001). Patient education program is cost-effective for preventing failure of endoscopic procedures in a gastroenterology department. *The American Journal of Gastroenterology*, 96 (6):1786–90.
- [5] Gebbensleben, B., & Rohde H., (2012) Anxiety before gastrointestinal endoscopy is a significant problem, *Dtsch Med Wochenschr*, 115 (41):1539-44.
- [6] Kutluturkan, S., Gorgulu, U., Fesci, H., &Karavelioglu, A. (2010). The Effects of providing pre-gastrointestinal endoscopy written educational material on patients' anxiety: A randomised controlled trial, *International Journal of Nursing Studies*, 47(9): 1066-1073.
- [7] Felley, C., Perneger, T.V., Goulet, I., Rouillard, C., Azar-Pey, N., Dorta, G., &Frossard, J.L. (2008). Combined written and oral information prior to gastrointestinal endoscopy compared with oral information alone: a randomized trial. *BMC Gastroenterology*, 8, (22).
- [8] Huppertz-Hauss, G., Chengarov, L., Dahler, S., Jorgensen, A., Moritz, V., Paulsen, J., & Hoff, G. (2012), "Drop in" gastroscopy outpatient clinic-experience after 9 months, *BMC Gastroenterology*, 12, 12.
- [9] Spielberger, C.D., Gorssuch, R.L., Lushene, P.R., Vagg, P.R. & Jacobs, G.A. (1983). Manual for the state-trait anxiety inventory, *Consulting Psychologists Press, Inc., Mountain View*
- [10] Seymen, A., Sunay, D., Biyikoglu, I., &Filik, L. (2014). State anxiety in patients referred to endoscopy unit, *Endoscopy gastrointestinal*, (3):1302-5422.
- [11] Maguire, D., Walsh, J.C., & Little, C.L. (2004). The effect of information and behavioural training on endoscopy patients' clinical outcomes, *patient education counselling*, 54(1):61-5.
- [12] Yoen., Lee, J., Anhn M.W., Kim, D.H., &Kweon, H.J. (2012). The effect of preparatory education program on discomfort and retching of examinees during upper

Author Profile



Kowsalya R. M.Sc. Nursing student of department of medical surgical nursing, Sri Ramachandra University, Chennai, India.



Akila P. is working as a lecturer in department of medical surgical nursing, Sri Ramachandra University, Chennai, India.



Malarvizhi M. is working as a lecturer in department of medical surgical nursing, Sri Ramachandra University, Chennai, India.