SCIENTIFIC ARTICLE

A study of postoperative anxiety and depression among patients with intestinal stomas

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Key words: Psychological well-being; anxiety and depression; intestinal stomas

Abstract

Introduction and objectives

Psychological well-being has a significant impact on the quality of life of stoma patients, but more emphasis should be given to this aspect. Therefore, this study was aimed to assess the level of depression and anxiety in a cohort of ostomy patients.

Materials and methods

A cross sectional study was conducted among 40 patients followed up at a single tertiary care unit. Median follow-up was 37 months (range: 6-183). Demographic and ostomy related variables were collected using an interviewer administered questionnaire. Patient Health Questionnaire (PHQ) and Generalized Anxiety Disorder (GAD) questionnaire, which are validated tools, were used to assess depression and anxiety respectively. Associations were established using Mann-Whitney U test.

Results

Moderate to severe depression was seen in 17.5% (N=7) and anxiety in 15% (N=6). The symptoms of depression and anxiety were significantly associated with ostomy complications and a past history of depressive symptoms during the immediate post-operative period. There was also a significant positive association between anxiety symptoms and a low level of income.

Conclusion

A considerable proportion of ostomy patients have psychological symptoms. Therefore, it is essential to screen the patients before discharge and during follow up for psychological distress and arrange prompt intervention if necessary.

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Introduction and objectives

The incidence of ostomy creation surgeries have increased worldwide, including in the Asian countries. This is mainly due to the increasing incidence of colorectal cancer and inflammatory bowel diseases [1,2]. The psychological and emotional morbidity and its impact on a patients' quality of life have been studied over a long period of time [3]. It has been shown that there is a significant reduction in the quality of life and impairment in the psychological well-being of patients with an enteral ostomy [4,5].

Around 16- 26 % of patients undergoing surgery for ostomy creation have been shown to experience psychological symptoms in the immediate post-operative period [3]. The estimated prevalence of psychological morbidity after 1 year is also similar to the above figures [6,7]. This means that despite physical rehabilitation following surgery, the improvement of psychological outcomes seems to be minimal. The most common psychological symptoms experienced are those of an anxiety disorder or a major depressive disorder and can also include suicidal tendency [3]. These psychological adverse effects can significantly affect their occupational and social functioning [7,8].

Most of the studies have been done in Western countries and a very few have been done in Asian countries [3,9]. The socioeconomic and cultural background is different in the South Asian setting compared to the Western population. Therefore, this study was aimed to describe the psychological adverse effects such as depression and anxiety among a group of enteral ostomy patients presenting to a single tertiary care unit in South Asia. Furthermore, this study was also aimed to analyse the possible contributory factors for depression and anxiety.

Materials and methods

A descriptive cross sectional study was carried out. The study was conducted at the National Hospital of Sri Lanka, Colombo which is the premier tertiary care hospital in Sri Lanka. The sample was selected from all those who presented for follow up for routine stoma care at the University Surgical Unit, National Hospital of Sri Lanka over a period of 1 year from February 2015 to March 2016. All patients who were aged above 18, who were living with an enteral ostomy and

who consented to participate were recruited. Those who had a past history of psychiatric illnesses prior to ostomy were excluded. Finally, a total of 40 patients were enrolled in this study.

The data was collected during follow up clinic visits. Details on demographic characteristics, disease characteristics and surgery were gathered. Demographic characteristics considered included age, sex, marital status, ethnicity, educational level and level of income. To assess adequacy of income, participants were asked, "Considering your household income from all sources, would you say you are comfortable, just have enough to make ends meet, or do NOT have enough to make ends meet" [10]. The clinical records were used to gather data on details related to ostomy, disease and the treatment which included type of surgery and complications of ostomy. The study instruments to assess depression and anxiety were interviewer administered to minimise discrepancies and to ensure completeness and accuracy. All patients gave written consent to be included in the study.

Study Instruments

The Patient Health Questionnaire (PHQ-9) [11], a validated screening tool was used to assess depression. It had an excellent internal reliability and test-retest reliability [11]. In the current study scores of 5, 10, 15, and 20 represent cut-off points for mild, moderate, moderately severe and severe depression, respectively [12].

Generalized anxiety Questionnaire (GAD-7) [13] is a validated screening tool that is used to assess anxiety. Although anxiety and depression symptoms frequently co-existed, factor analysis has described them as distinct dimensions [13]. In the current study, scores of 5, 10, and 15 represent cut-off points for mild, moderate, and severe anxiety, respectively.

Translation of the above questionnaires was done into local languages and expert validation was done before administration and results were administered to a pilot sample before being using in this study.

Data analysis

SPSS 20.0 statistical software (SPSS Inc., USA) was used for data analysis. Study variables were expressed using median (Inter-quartile ranges). Mann-Whitney U test was used to analyse the relationship between the two groups. Statistical testing was performed at the 0.05 significance level.

Results

Characteristics of study participants

The median age of the study sample analysed was 44 years ± SD 16.8 (range 18 -77). The median follow up duration was 37 (range 3 – 183) months. The majority (67.5%) were males. Thirteen patients (32.5%) did not have an adequate income to meet their daily needs (Table 1).

		N	%
Sex	Male	27	67.5%
	Female	13	32.5%
Ethnicity	Sinhala	25	62.5%
	Tamil	9	22.5%
	Muslim	6	15.0%
Marital Status	Unmarried	9	22.5%
	Married	27	67.5%
	Divorced	0	0.0%
	Widowed	3	7.5%
	Separated	1	2.5%
Income	Comfortable	7	17.5%
	Enough to meet important needs	20	50.0%
	Not enough to meet important needs	13	32.5%
Educational level	less than Grade 11	31	77.5%
	Grade 11 or more	9	22.5%
Employment status	Yes	14	35.0%
	No	26	65.0%
Type of ostomy	Ileostomy	11	27.5%
	Colostomy	29	72.5%

Table 1. Demographic parameters of ostomy patients.

Prevalence of depression and anxiety

In the study group, a total of 45% had depression (95% Confidence Interval: 30.0% – 62.5%), that is 17.5% (N=7) had moderate to severe depression (scores ≥ 10) while 27.5% (N=11) had mild depression (scores 5 -9). The median depression score was 4 (Q1-Q3: 0 – 9). Moderate to severe anxiety was seen in 15% (N=6) and mild anxiety was present in 15% (N=6), i.e. a total of 30% had some degree of anxiety (95% Confidence Interval: 17.5% – 45.0%). The median anxiety score was 2 (Q1-Q3: 0 – 5.75).

The mean depression score was higher in males (Table 2), however it was not statistically significant. The mean score of anxiety was higher in those aged less than 60 and in males (Table 3). The mean anxiety score was significantly low in those who had a "comfortable" income ($p<0.05$), indicating a reduced level of anxiety. Those who had depressive symptoms during the immediate post-operative period had significantly high scores of depression and anxiety at the time of the study ($p<0.01$). Those who had ostomy related complications had significantly higher anxiety and depression scores ($p<0.05$). Commonest complications were skin excoriation, stomal prolapse and parastomal hernia which were all associated with

higher scores. Permanent ostomies had a higher level of depression and anxiety compared to temporary ostomies. There was no significant association of depression and anxiety with other parameters such as type of ostomy, type of surgery, marital status and educational level.

		N	Median	Q1-Q3	P value
Sex	Male	27	3	0-9	0.96
	Female	13	5	0.5-7.5	
Age	=< 60	29	4	0-9	0.87
	> 60	11	3	0-9	
Marital Status	Married	27	4	2-9	0.23
	Others	13	1	0-8.5	
Income	Comfortable	7	3	0-3	0.16
	Others	33	5	0-9	
Education	less than Grade 11	31	4	0-9	0.55
	Grade 11 or more	9	4	0-9	
Type	Ileostomy	11	9	0-14.5	0.51
	Colostomy	29	4	0-7	
Surgery	Defunctioning	16	3.5	0-9	0.74
	Others	24	4	0-9	
Complications	Yes	9	**4**	**1-10**	**0.01**
	No	31	3	0-9	
Follow up	2 years or less	19	4	1.5-12	0.79
	More than 2 years	21	4.5	0-9	
Permanent	Yes	21	5	2-9	0.14
	No	19	3	0-9	
Presence of depressive symptoms in the immediate post-operative period	Yes	18	**8.5**	**4.25-10.25**	**0.01**
	No	22	3	0-4	

Table 2. Contributory factors for depressive symptoms.

		N	Median	Q1-Q3	P value
Sex	Male	27	2	0-8	0.51
	Female	13	1	0-4	
Age	< 60	29	3	0-6.5	0.39
	=> 60	11	1	0-2.5	
Marital Status	Married	27	2	0-6	0.51
	Others	13	1	0-5.5	
Income	Comfortable	7	0	0-3	**0.03**
	Others	33	2	0-7	
Education	less than Grade 11	31	1	0-5	0.29
	Grade 11 or more	9	3	0.5-9	
Type	Ileostomy	11	6	0-14.5	0.26
	Colostomy	29	2	0-4	
Surgery	Defunctioning	16	2	0-5	0.64
	Others	24	1.5	0-6.75	
Complications	Yes	9	**2**	**0-8.5**	**0.01**
	No	31	1	0-5	
Follow up	2 years or less	19	3	0.5-5	0.14
	More than 2 years	21	1.5	0-6.5	
Permanent	Yes	21	2	0-6	0.49
	No	19	1	0-5.5	
Presence of depressive symptoms in the immediate post-operative period	Yes	18	**5.5**	**1.75-12.5**	**0.002**
	No	22	0	0-3	

Table 3. Contributory factors for anxiety symptoms.

Discussion

A considerable proportion of ostomy patients had depression and anxiety. A total of 45% had depression, out of which 17.5% had moderate to severe depression. The proportion of patients having anxiety was 30%, and 15% had moderate to severe anxiety. This is comparable with previous studies. According to a study done by Thomas et al [14], 22% of patients had moderate to severe psychiatric symptoms after a period of 1 year following creation of ostomy. A review of literature by White et al [3] stated that up to 26% of ostomy patients developed psychological symptoms 3 months after creation of an ostomy.

In our study, the mean score of depression was considerable in both males and females, but the score was higher in males although not statistically significant. Similarly, the mean score of anxiety was also higher in males compared to females. A study conducted by Hong et al [15] has shown a significantly higher level of depression symptoms in males. Furthermore, males were not satisfied with their lives and considered themselves as failures [15]. This significant association shown by Hong et al may be because males are breadwinners of the family and more socially active compared to females and hence experience a significant impact on their day to day lives following ostomy creation.

Our study did not show a significant association with demographic parameters such as marital status and educational level. However, there was a significant association with the level of income. Both mean scores of depression and anxiety were low in those who had a "comfortable" income, of which the low level of anxiety was statistically significant. This may indicate that the socioeconomic status can have a significant impact on the psychological well-being of patients. It is important to note that only 17.5% had a comfortable income. Furthermore, 32.5% stated that their income was insufficient to meet important day to day needs. A similar study showed that as the socioeconomic level became lower, the level of depressive mood worsened [15]. Creation of an ostomy itself can have a significant impact on the patients' socioeconomic status by affecting the livelihood, particularly in manual labourers who have a low income. Therefore, this can further deteriorate the psychological well-being of those belonging to the low income group.

Our study showed a significant association between psychological distress and complications. Those who had complications related to stomas had significantly high mean scores of depression and anxiety. Presence of complications may require frequent clinic visits and hospital admissions. It may also need special appliances which are not readily available in the government health sector of developing countries. These factors may have led to an increased economical and psychological burden to the patient resulting in poor psychological well-being.

Despite the considerable duration of follow up, those who experienced depressive symptoms in the immediate post-operative period had higher mean scores of depression and

anxiety. This may be due to failure to identify poor psychological well-being and a delay in prompt intervention during the post-operative period. It may be helpful to screen those who underwent ostomy creation before discharge to identify any psychological distress so that early appropriate intervention by means of psychological referral and counselling may be implemented. Studies have shown that the rate of psychological distress is comparable in the early period following surgery and after 1 year [7,16]. Therefore, the psychological interventions should be further improved.

A review by White et al [3] has shown that the psychological aspects of ostomy is notoriously neglected and this is particularly true in the medical sector of developing countries. Psychological problems are commonly undetected by the hospital staff [17,18] including those who work with ostomy patients [4,6], thus the recognition of psychological issues following discharge is poor. The poor detection may be due to the reluctance of the patients to express their psychological and emotional issues [18] due to fear that they may be considered as troublesome or it may be due to the failure of hospital staff to inquire about these problems [19].

However attending to the psychological needs of the patients is an essential component in the management of the stoma patients as it has a direct association with their quality of life [20]. Therefore, the surgeons have an important role in educating their colleagues regarding the possibility of psychological problems in relation to ostomy. Furthermore, they should routinely look for psychological disturbances and take appropriate measures promptly.

Our study is limited to a small sample size which could have led to a type 2 error, and also accurate detection of risk factors is difficult. However, this study emphasised a few important findings which may be useful in the management of the psychological well-being of ostomy patients. Furthermore, since the sample size is small, the association between psychological well-being and diagnosis of the patients could not be studied as the sample is not powered adequately. Determining this association is important because the state of the illness and its treatment may have a significant impact on the psychological well-being of the patient. Therefore, further studies using controlled inclusion of benign temporary diseases may be necessary to assess the rate of psychological distress, specifically due to an ostomy.

Conclusion

A considerable proportion of ostomy patients had symptoms of depression and anxiety. These symptoms were significantly associated with poor socioeconomic status, presence of ostomy related complications and a past history of immediate post-operative psychological distress. Therefore, it is essential to screen the patients before discharge and during follow up for psychological distress and arrange for prompt intervention.

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

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