

## INTRODUCTION

Inflammatory bowel disease (IBD) is a chronic auto-immune disease that causes ulceration and inflammation of the digestive tract. The most common forms of IBD are Ulcerative Colitis (UC) and Crohn's disease (CD). IBD causes a number of debilitating and embarrassing symptoms. Disease type and disease activity levels determine the drug treatment type and in severe cases surgery may be required.

According to McDermott et al. (2015), functional disturbance and physical disfigurement from medical diseases, drug and surgical treatments can adversely affect the perception of one's body. Using a modified Hopwood body image dissatisfaction (BID) scale, McDermott et al. (2015) revealed an association between BID in patients of IBD with active diseases, steroid use and surgical treatments. It has also been suggested that high levels of depressive internalising disorders lower the reporting of psychosocial functioning (Greenley et al., 2010) and that abnormal anxiety levels are present in patients of IBD (Bannaga & Selinger, 2015).

The purpose of this study was to gather experiences directly from patients living with the effects of IBD and to examine the association between BID and patients emotional state (DASS and general happiness). Hypotheses:

- BID would be significantly associated with levels of depression, anxiety, stress and general happiness.
- Significant differences in BID levels across disease type and disease activity,

## METHOD

**Participants:** Purposive and snowball sampling was employed to source 111 diagnosed patients of IBD aged 18 years or older.

**Materials:** The online questionnaire consisted of a series of questions in relation to disease type, drug therapies, surgical treatment, disease activity, age of diagnosis, length of diagnosis along with the modified Hopwood body image scale (McDermott et al., 2014), the Depression, Anxiety and Stress Scale (DASS: Lovibond & Lovibond, 1995), the subjective happiness scale (Lyubomirsky & Tucker, 1998) and four qualitative open-ended questions assessed body image.

**Procedure:** Participants were sourced through on-line IBD support groups and individuals known through association with IBD. Questionnaires were completed on-line, taking approximately 20 minutes.

"I have isolated myself. I suffer from depression. I have lost confidence and have no social interaction".

## RESULTS

Total 111 participants; CD n=69, UC n=40.

- 21.6% (n = 24) inactive disease, 45% (n = 50) mildly active disease, 32.4% (n = 36) moderate to severe disease activity.
- 82.8% (n=92) one or multiple drug therapies.
- 46.8% (n = 52) undergone some type of surgery.
- In terms of the DASS, BID was found to significantly predict depression ( $F(1,107) = 64.09, p < .001, R^2 = .37$ ), anxiety ( $F(1,108) = 59.91, p < .001, R^2 = .35$ ) and stress ( $F(1,108) = 53.24, p < .001, R^2 = .32$ ).
- Similarly, the DASS significantly predicted BID ( $R^2 = .39, F(3,104) = 24.00, p < .001$ ), specifically depression and anxiety, suggesting a bidirectional relationship for these constructs.
- Furthermore a weak negative significant correlation between BID and subjective happiness was also found ( $F(1,109) = 19.84, p < .001, R^2 = 1.5$ ).

Table 1: Beta values for regression models

DV	IV	$\beta$	p	CI lower	CI upper
Depression	BID	.61	<.001	.73	1.21
Anxiety	BID	.58	<.001	.65	1.09
Stress	BID	.58	<.001	.62	1.07
BID	Depression	.39	.011	.06	.43
BID	Anxiety	.30	.026	.03	.38
BID	Stress	-.2	.910	-.23	.20
Happiness	BID	.39	<.001	-.36	-.14

- A significant difference in BID was found in patients of CD, reporting a higher level of BID than UC ( $t(107) = -2.15, p = .034, CI(95\%) - 6.82, -.28$ ).
- Differences also exist when comparing the disease activity ( $F(2, 33) = 5.90, p = .004$ ) with patients with moderate to severe disease scoring significantly higher on BID.

## QUALITATIVE

**Q1. "Are you concerned about the appearance of some part(s) of your body, which you consider especially unattractive? What are these concerns?"**

- 71.1% (n=69) concerned about the appearance of their body.
- 30% (n=37) concerned over the appearance of their stomach related to bloating (n = 16) or scarring after surgery (n=23).
- Concerns displayed in relation to weight (n=25), both overweight (n=13) and underweight (n=12).

"terrible bloating, weight gain from medication..."

**Q2. "What effect has your preoccupation with your appearance had on your life?"**

- 80.8% (n=76) reported that the disease did have an effect on their life.
- 26% (n=25) avoid social interactions, concerns over general appearance, less confidence and low levels of self-esteem.

## QUAL. CONTINUED

**Q3. "Has the physical effect of your disease significantly interfered with your college work, your job, or your ability to function in your role? If so, how?"**

- 74.3% (n = 78) reported disease interfered with role function
- 19.0% (n = 20) stated fatigue as being a contributory factor.

"I am unable to work. Have lost many jobs due to lack of understanding."

**Q4. "Do you ever avoid things because of the physical effect of your disease? If so, what do you avoid?"**

- 82.7% (n = 81) avoided situations or things due to the physical effect of the disease.
- 43.9% (n= 43) avoided social situations such as travel and events.
- 29.8% (n = 29) avoid "swimming, most exercise" or "sports, water sports and contact sports".

## DISCUSSION

The results of this study found a significant difference in BID levels of patients in relation to disease type, disease activity and the use of cortisol steroids in the treatment for IBD thus supporting the hypothesis and complementing former research. BID was also found to predict depression, anxiety and stress in patients and conversely depression and anxiety levels in patients were found to predict BID. BID was also found to predict levels of subjective happiness supporting the hypotheses.

The ability to identify predictor variables of BID in patients of IBD will allow for better planning and interventions when managing individual patient treatment programmes. The finding that BID predicts DASS and conversely that levels of depression and anxiety predict levels of BID suggest the existence of a bi-directional relationship. The qualitative aspect of this study also gives a deeper insight as to how or why some of these variables produce higher levels of BID. These patient reports build an awareness of the individual struggles encountered when living with IBD, the effect this disease has on patient functioning and highlight an increasing need for multidisciplinary treatment approach to IBD.

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