

# IRRITABLE BOWEL SYNDROME: THE INCIDENCE OF CONCURRENT PSYCHOPATHOLOGY

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## ABSTRAK

Dit was die doel van die studie om 'n verbeterde begrip van die assosiasie tussen fisiologie en sielkunde in Funksionele Maagderm Versteurings te bewerkstellig deur die komorbiditeit van Prikkelbare Dermsindroom en psigopatologie binne 'n sektor van die Suid Afrikaanse populasie te oorweeg. 'n Vergelyking is getref tussen die voorkoms van konkurrende psigopatologie in 'n steekproef van 48 wit, vroulike pasiënte wat wissel in ouderdomme van 25 tot 55 jaar en gediagnoseer is met Prikkelbare Dermsindroom, en die voorkoms van psigopatologie in 'n kontrolegroep wat bestaan het uit 39 wit vrouens wat nie aan Prikkelbare Dermsindroom ly nie en wie se ouderdomme gewissel het van 25 tot 55 jaar. Die "Personality Assessment Inventory" is gebruik om die voorkoms van psigopatologiese persoonlikheidstreke en simptome in die Prikkelbare Dermsindroomgroep en die kontrolegroep te bepaal. Hierdie is 'n self-gedadministreerde, objektiewe meetinstrument van volwasse persoonlikheid wat ontwerp is om inligting oor 18 kritiese kliniese veranderlikes te verskaf. Die instrument is ontwikkel en gestandaardiseer vir gebruik in die kliniese taksering van individue vanaf die ouderdom van 18 jaar. Vroeëre studies het 'n hoë voorkoms van geassosieerde psigiatriese versteuring in pasiënte met Prikkelbare Dermsindroom getoon. Die tendens is bevestig in die studie en dit blyk asof ouderdom of opvoedingsvlak nie 'n invloed het op die voorkoms van psigopatologie in pasiënte met Prikkelbare Dermsindroom nie.

## ABSTRACT

The goal of this study was to improve understanding of the association between physiology and psychology in Functional Gastrointestinal disorders by considering the co-morbidity of Irritable Bowel Syndrome and psychopathology in a sector of the South African population. A comparison was made between the incidence of concurrent psychopathology in a sample of 48 white female patients, aged 25 to 55 years and diagnosed with Irritable Bowel Syndrome and the incidence of psychopathology in a control group that consisted of 39 white women, aged 25 to 55 years, who did not meet the criteria for Irritable Bowel Syndrome. The Personality Assessment Inventory was

used to determine the incidence of psychopathological personality traits and symptoms in the Irritable Bowel Syndrome group and the control group. This is a self-administered, objective measuring instrument of adult personality that was developed to provide information about 18 critical clinical variables. The instrument was developed and standardised for use in the clinical assessment of individuals aged 18 years and older. Earlier studies showed a high incidence of associated psychiatric disorder in patients with Irritable Bowel Syndrome. This study confirmed this trend and it seems as if age and level of education has no influence on the incidence of psychopathology in patients with Irritable Bowel Syndrome.

## INTRODUCTION

Functional Gastro-intestinal Disorders (FGID) may be defined as chronic or recurrent gastro-intestinal symptoms characterised by persistent or recurrent abdominal pain, constipation and/or diarrhoea (Drossman, 1994:1-17). The disorders are not explainable by structural or biochemical abnormalities and do not progress to any more severe form of disease although the pattern of symptoms may flare up periodically (Alpers, 1983: 153). Whilst FGID have no associated mortality, they are of concern because of their prevalence and associated morbidity and expense.

Drossman (1983: 489) found that up to 44% of the adult population in the United States of America fulfil the criteria for Functional Gastro-intestinal Disorders. Furthermore it is estimated that between 20-50% of patients who consult gastro-enterologists present with some form of FGID. Folks and Kinney (1992: 257-270) assert that as many as 60% of patients seen in a typical gastro-enterologist's practice have complaints that are primarily of psychological origin. The resultant cost to society is immense in terms of time lost from work, out-patient consultations, investigations to exclude organic disease, use of prescription and over-the-counter medications, and, in some cases, in-hospital care.

Empirical observation has long linked this group of syndromes to psychopathological symptomatology and certain researchers (Alpers, 1983: 139; Hislop, 1971: 452; Liss, Alpers & Woodruff, 1973: 157) maintain that the overwhelming majority of patients with FGID have an identifiable psychiatric disorder. As Drossman, McKee, Sandler, Mitchell, Cramer, Lowman and Burger (1988: 701-708) report, for a substantial number of patients with FGID, the treatment of the underlying bowel disturbance is insufficient to ameliorate their chronic suffering, physical and psychological disability and the high frequency of medical consultations.

Irritable Bowel Syndrome (IBS) is the most common functional gastro-intestinal disorder seen by gastro-enterologists (Drossman and Thompson, 1992: 1009). It is characterised by a variable combination of unexplained, chronic or recurrent symptoms attributed to the intestines, including abdominal pain, disturbed defecation and/or symptoms of bloatedness and distension. The absence of characteristic laboratory markers or special symptoms makes it

difficult to diagnose the condition with certainty and often the process of diagnosis involves exclusion and negative medical investigations rather than positive identification. It is a chronic and relapsing disorder that frequently affects individuals for extended periods of their lives. Whilst the syndrome may be the cause of much discomfort and distress, no permanent harm is done to the intestine nor does it precipitate the subsequent development of intestinal bleeding or serious disease such as cancer. As Drossman and Thompson (1992: 1009-1016) note, it is a benign disorder. Although there is no evidence that liability to other diseases or life expectancy is altered by IBS, most patients remain symptomatic for many years following diagnosis.

Thompson (1994: 119-120) reports that approximately one third of otherwise healthy young and middle-aged adults have symptoms compatible with irritable bowel syndrome. Barksy (1987: 902-904) contends that symptoms of IBS are identifiable in 14-30% of the general population but of these, as few as 20% will consult a physician. Research indicates a high incidence in both western and eastern societies with the prevalence of symptoms appearing similar in different cultures (Thompson & Heaton, 1980, in Thompson & Hawkey, 1995: 327-332; Drossman, Zhiming, Toner, Diamant, Creed, Thompson, Read, Babbs, Barreiro, Bank, Whitehead, Schuster & Guthrie, 1995: 986-995). In western countries 75-80% of all patients with IBS seen by a physician are female whereas Sandler (1990, in Enck & Wienbeck, 1993: 979-989) estimates that women are affected 3,2 times more than men. Of these, the majority is white and middle-aged.

Whilst Irritable Bowel Syndrome (IBS) is characterised by symptoms primarily of colonic origin, there is the widely held belief that patients with Irritable Bowel Syndrome are typically psychologically impaired or disturbed. In fact, for many researchers, Irritable Bowel Syndrome is synonymous with some form of psychopathological dysfunction. Walker, Gelfand, Gelfand and Katon (1995: 1259-1267) explain that whilst there are no specific psychological markers that characterise all patients with IBS, many studies have shown the remarkably high prevalence rates of psychiatric disorders in IBS patients. In fact, Latimer (1981: 475) asserts that on the basis of structured psychiatric interviews, a high percentage of IBS patients can be assigned a psychiatric diagnosis.

Psychological stress is often reported as a major contributory factor to the onset or exacerbation of symptoms and even though the actual stressor may seem insignificant to the observer, it is the patient's subjective perception that is the determining factor. Researchers such as Svedlund, Sjodin, Dotevall and Gillberg (1984: 595-601), Bennett (1989: 255-276) and Walker, Roy-Byrne, Katon, Li, Amos and Jiranek (1990: 1656-1661) report that IBS patients have also been found to manifest higher levels of psychometrically measured anxiety, depression and hypochondriasis when compared with matched controls suffering from other physical disorders or with the general population.

## RESEARCH PROBLEM

Of particular concern in the South African context is the fact that so little of the available research is pertinent to the local conditions. The present study therefore seeks to initiate such research by considering the co-morbidity of IBS and psychopathology within a small, carefully delineated sector of the South African population, with the hope that future projects will broaden their scope to include a wider sample from our "rainbow" nation.

A specific question to be addressed will be whether the incidence of psychopathology in white female South African patients with Irritable Bowel Syndrome appears to differ in any significant way from the incidence as determined in overseas studies. In addition, the issues of gender and age and their contribution to the incidence of psychopathology in patients with Irritable Bowel Syndrome will be addressed, as the present study allowed only for the participation of female subjects between the ages of 25 and 55 years.

## AIMS OF RESEARCH

This research project forms part of a broader project initiated in 1996 by the Counselling and Research Centre for Psychogastro-enterology of the Rand Afrikaans University in Johannesburg. The emphasis of this project is on improving understanding of the association between physiology and psychology, specifically as this is manifested in Irritable Bowel Syndrome.

The aim of the study was to establish whether statistically significant differences exist in the incidence of psychopathology between Irritable Bowel Syndrome patients (Group 1) and non-Irritable Bowel Syndrome controls (Group 2) with reference to the following variables:

1. Neurotic spectrum of Disorders (Sub-scales: Somatic Complaints, Anxiety, Anxiety-related Disorders and Depression)
2. Psychotic spectrum of Disorders (Sub-scales: Mania, Paranoia and Schizophrenia)
3. Behaviour Disorders sub-group (Sub-scales: Borderline Features, Antisocial Features, Alcohol Problems and Drug Problems)
4. Treatment Consideration Scales (Sub-scales: Aggression, Suicidal Ideation, Stress, Non-support and Treatment Rejection) and the Interpersonal Scales (Sub-scales: Dominance and Warmth)

## HYPOTHESES

The following composite null hypotheses were identified:

1. There is no statistically significant difference in the vectors of averages of Group 1 (IBS patients) versus Group 2 (non-IBS controls) with reference to the four sub-scales of the Neurotic Spectrum of Disorders scale of the PAI taken together.

2. There is no statistically significant difference in the vectors of averages of Group 1 (IBS patients) versus Group 2 (non-IBS controls) with reference to the three sub-scales of the Psychotic Spectrum of Disorders scale of the PAI taken together.
3. There is no statistically significant difference in the vectors of averages of Group 1 (IBS patients) versus Group 2 (non-IBS controls) with reference to the four sub-scales of the Behaviour Disorders Spectrum of Disorders scale of the PAI taken together.
4. There is no statistically significant difference in the vectors of averages of Group 1 (IBS patients) versus Group 2 (non-IBS controls) with reference to the five sub-scales of the Treatment Consideration scale and two sub-scales of the Interpersonal scale of the PAI taken together.
5. There is no statistically significant difference in the averages of the three groups of patients with Irritable Bowel Syndrome, categorised according to age and level of education, with regard to the incidence of psychopathology.

## METHOD

### Sample

The subjects who participated in the study were recruited in the following ways: Referrals from medical doctors and by inviting members of the public to participate in the project through an article in the Medical Chronicle and an article on IBS in a popular women's magazine. All patients who expressed interest in the project were required to obtain a client referral form completed by their doctor to confirm their diagnosis of Irritable Bowel Syndrome.

As is shown in Table 1, eighty-six patients with IBS were included in the pre-final sample. Of these, some were referred by medical practitioners whilst others responded to articles in local newspapers and periodicals. Twenty-one of the original participants was excluded due to incomplete data and their failure to submit client referral forms completed by their doctors. A further 13 patients were adjudged to have submitted invalid data in terms of the validity scales of the Personality Assessment Inventory and four patients were male and therefore automatically excluded from the research project. There were thus 48 patients with IBS in the final sample.

The patients with Irritable Bowel Syndrome (N=48) were white females between the ages of 25 and 55 years. The education level of patients was categorised as below matriculation, matriculation or tertiary qualification. The non-IBS control group of white female subjects (N=39) was drawn randomly from the local community. Their ages also ranged from 25-55 years and their level of education was categorised in the same way as the IBS patients.

In the initial planning of this research project, it was hoped to include a group of subjects who met the criteria for the diagnosis of IBS but who were able to deal with the symptoms without medical intervention. Research indicates a significant difference between the psychopathological personality trends in such individuals as opposed to IBS patients (Clouse & Alpers, 1986: 384-395; Drossman *et al.* 1988; Sandler, Drossman Nathan & McKee, 1984; Whitehead, Bosmajian, Zonderman, Costa & Schuster, 1988). It would have thus added an interesting dimension to this study had a group of IBS non-patients been included but unfortunately the practical ramifications of recruiting such subjects proved insurmountable.

The following two tables present further information pertaining to the IBS patients and non-IBS controls who participated in the study. The variables of age and level of education were specifically identified as possible influencing factors in the incidence of concurrent IBS and psychopathology.

### Methods of data collection

The measuring instrument selected to assess adult personality and in particular the presence of psychopathological personality tendencies in subjects participating in the study was the Personality Assessment Inventory (PAI). This is a self-administered, objective inventory of adult personality designed to provide information on 18 critical clinical variables, namely: somatic complaints, anxiety, anxiety-related disorders, depression, mania, paranoia, schizophrenia, borderline features, alcohol problems, drug problems, anti-social features, aggression, suicidal ideation, stress, non-support, treatment rejection, dominance and warmth (Morey, 1991).

Although developed in the United States of America and standardised for use on a westernised population, the PAI was selected as being suitable for use in South Africa where the white population shares many characteristics with the American people.

**TABLE 1:** Details of pre-final sample of Group 1 (IBS patients) and Group 2 (Non-IBS controls)

SUBJECTS	ANALYSIS OF PRE-FINAL SAMPLE				
	Initial Sample	Data in - complete	Invalid Data	Male Patients	Final Sample N (%)
IBS Patients	86	21	13	4	48 (55,2)
Non-IBS controls	43	-	4	-	39 (44,8)
Total	129	21	17	4	87 (100)

**TABLE 2:** Age as a variable in Group 1 (IBS patients) and Group 2 (Non-IBS controls)

SUBJECTS	AGES			Total
	25-34 N (%)	35-44 N (%)	45-55 N (%)	
IBS Patients	8 (16,7)	28 (58,3)	12 (25)	48
Non-IBS controls	8 (20,5)	19 (48,7)	12 (30,8)	39
Total	16 (18,4)	47 (54)	24 (27,6)	87

**TABLE 3:** Level of education as a variable in Group 1 (IBS patients) and Group 2 (Non IBS controls)

SUBJECTS	LEVEL OF EDUCATION			TOTAL
	< Matric N (%)	Matric N (%)	>Matric N (%)	
IBS Patients	5 (10,4)	13 (27,1)	30 (62,5)	48
Non-IBS controls	4 (10,3)	6 (15,4)	29 (74,4)	39
Total	9 (10,3)	19 (21,8)	59 (67,8)	87

In assessing the reliability of the PAI, the focus was on internal consistency and test-retest stability. The internal consistency coefficient (alpha coefficient) ranged from 0,81 to 0,86. The mean inter-team correlations for the PAI are typically around 0,2, indicating that items focus on reasonably independent content. Test-retest reliability coefficients were determined by administering the test to each of two samples of normal subjects on two different occasions, 24 days apart, and ranged from 0,60 to 0,94 averaging at 0,85.

The diagnostic indicators used include the Minnesota Multiphasic Personality Inventory and the NEO Personality Inventory. It is clear from the available data published in the manual that the construct and discriminant validity of each sub-scale within the PAI was confirmed.

## STATISTICAL ANALYSIS OF DATA

The Hotelling T-square test was used to determine the statistical significance of the differences between the vectors of averages of Group 1 (IBS patients) versus Group 2 (Non-IBS controls). The Student t-test was used to determine whether the averages of the two groups regarding the four specific sub-groups of scales differ statistically significantly.

## RESULTS

Statistically significant differences were found to exist between Group 1 (IBS patients) and Group 2 (Non-IBS controls) in terms of the incidence of psychopathology as measured by the PAI.

There were statistically significant differences found between Group 1 (IBS patients) and Group 2 (Non-IBS controls) with regard to the Neurotic Spectrum of disorders. Hotelling T-square test p-value was 0,0000, which is

significant at the 0,01 level. Accordingly, the Student t-test was performed to indicate in which sub-scales the differences occurred. All the sub-scales showed statistically significant differences between the two groups. In terms of the Somatic Complaints sub-scale, the IBS patients had an average of 29,56 versus 7,82 for the Non-IBS controls. This was statistically significant at the 0,01 level. In terms of the Anxiety sub-scale, Group 1 (IBS patients) had an average of 36,85 versus 14,51 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Anxiety-related Disorders sub-scale, Group 1 (IBS patients) had an average of 33,0 versus 18,67 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Depression sub-scale, Group 1 (IBS patients) had an average of 30,25 versus 12,38 for Group 2 (Non-IBS controls). This was also statistically significant at the 0,01 level.

There were statistically significant differences found between Group 1 (IBS patients) and Group 2 (Non-IBS controls) with regard to the Psychotic Spectrum of disorders. Hotelling T-square test p-value was 0,0000, which is significant at the 0,01 level. Accordingly, the Student t-test was performed to indicate in which sub-scales the differences occurred. All the sub-scales showed statistically significant differences between the IBS patients and Non-IBS controls. In terms of the Mania sub-scale, Group 1 (IBS patients) had an average of 29,33 versus 19,07 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Paranoia sub-scale, Group 1 (IBS patients) had an average of 25,66 versus 14,23 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Schizophrenia sub-scale, Group 1 (IBS patients) had an average of 23,77 versus 11,15 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level.

There were statistically significant differences found between Group 1 (IBS patients) and Group 2 (Non-IBS controls) with regard to the Behaviour Disorders spectrum. Hotelling T-square test p-value was 0,0000, which is

significant at the 0,01 level. The Student t-test indicated statistically significant differences between the groups on the following sub-scales: Borderline Features, Antisocial Features and Drug Problems. No statistically significant difference was found between the two groups on the Alcohol Problems sub-scale. In terms of the Borderline Features sub-scale, Group 1 (IBS patients) had an average of 30,08 versus 15,71 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Antisocial Features sub-scale, Group 1 (IBS patients) had an average of 11,22 versus 7,84 for Group 2 (Non-IBS controls). This was statistically significant at the 0,05 level. In terms of the Alcohol Problems sub-scale, Group 1 had an average of 3,45 versus 2,84 for Group 2. This was not statistically significant. In terms of the Drug Problems sub-scale, Group 1 (IBS patients) had an average of 5,08 versus 3,41 for Group 2 (Non-IBS controls), which was statistically significant at the 0,05 level.

There were statistically significant differences between the IBS patients and Non-IBS controls with regard to the Treatment Consideration sub-scales. Hotelling T-square test p-value ( $p = 0,0000$ ) was significant at the 0,01 level. Accordingly, the Student t-test was performed to indicate in which sub-scales the differences occurred. All the Treatment Consideration sub-scales showed a statistically significant difference between Group 1 (IBS patients) and Group 2 (Non-IBS controls). No statistically significant difference was found between the two groups with regard to the Interpersonal Scales. In terms of the Aggression sub-scale, Group 1 (IBS patients) had an average of 18,41 versus 11,33 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Suicidal Ideation sub-scale, Group 1 (IBS patients) had an average of 8,68 versus 2,97 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Stress sub-scale, Group 1 (IBS patients) had an average of 9,22 versus 5,38 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Non-support sub-scale, IBS patients had an average of 7,39 versus 2,82 for Non-IBS controls. This was statistically significant at the 0,01 level. In terms of the Treatment Rejection sub-scale, Group 1 (IBS patients) had an average of 8,54 versus 14,17 for Group 2 (Non-IBS controls). This was statistically significant at the 0,01 level. In terms of the Interpersonal sub-scales, no statistically significant differences were found between Group 1 (IBS patients) and Group 2 (Non-IBS controls). On the Dominance sub-scale, Group 1 (IBS patients) had an average of 19,87 versus 20,53 for Group 2 (Non-IBS controls). On the Warmth sub-scale, Group 1 (IBS patients) had an average of 21,64 versus 23,41 for Group 2 (Non-IBS controls).

The Pearson Chi-square test was utilised to determine whether the incidence of psychopathology as measured by the PAI varied according to age or level of education (refer to tables 2 and 3).

**TABLE: 4**

Minimum estimated expected value is 7,17			
STATISTIC	VALUE	D.F.	PROBABILITY
Pearson Chi-Square	0,801	2	0,6700

This result indicates that there is no association between the incidence of psychopathology as measured by the PAI and age in patients suffering from IBS.

**TABLE: 5**

Minimum estimated expected value is 4,03			
STATISTIC	VALUE	D.F.	PROBABILITY
Pearson Chi-Square	1,795	2	0,4075

This result indicates that there is no association between the incidence of psychopathology as measured by the PAI and the level of education in patients suffering from IBS.

## DISCUSSION

The earliest research projects in the field of IBS, including the work of Bockus and Bank (1928, in Young, Alpers, Norl & Woodruff, 1976: 162-166) and White and Jones (1940, in Young *et al.* 1976: 162-166), drew attention to the high incidence of concurrent psychiatric illness in patients with IBS. Whilst many of these earlier research studies were deemed to be methodologically flawed, their findings have been confirmed by later more methodologically sound researchers including Chaudhary and Truelove (1962: 307), Liss *et al.* (1973: 151), Latimer, Sarna, Campbell, Latimer, Waterfall and Daniel (1981: 893-901) and Els, Gagiano, Grundling, Van Zyl and Joubert (1995: 1368).

The results of the present study provide further confirmation of these findings. Clearly the incidence of psychopathology in the group of patients diagnosed as suffering from IBS is statistically significantly higher than in the group of non-IBS controls. The significance of this set of results is heightened by the fact that concerted efforts were made to address many of the methodological flaws which detracted from certain of the earlier studies, particularly with regard to sample size, the inclusion of a control group and control of the variables of gender, age and level of education.

However, before the present study is compared with other research results, it is important to comment on the difference between this study and many of the studies reported in the literature. Whereas many studies report their results

in the form of psychiatric diagnoses, elevated scores on the sub-scales of the PAI do not automatically correlate with such diagnoses. Rather, the clinically significant elevations indicate that the intensity of the reported symptoms is atypical, even within a clinical setting, and should thus be regarded as indicative of pathology. In order to make a specific psychiatric diagnosis on the basis of the PAI, the individual's overall profile across the 18 scales would need to be compared to the mean profiles constructed for each specific disorder. Diagnosis can not be made on the basis of the score for one scale in isolation. This again raises the problem of comparing potentially dissimilar test results and highlights the fact that the focus in the discussion of the results can only be on apparent trends rather than on definitive correlations.

These results also highlight the diversity of psychopathological diagnoses in IBS patients, a feature heralded by much of the research as distinctive of IBS (Chaudhary & Truelove, 1962: 307; Latimer *et al.* 1981: 893-901). Psychopathological personality trends and symptoms were identified in 47 (98%) of the 48 IBS patients (all female). On further analysis, it was found that of these 47 IBS patients with psychopathological personality trends, 31 patients (65,9%) had elevated scores in comparison with the normal standardisation sample with the remaining 16 patients (34,0%) showing a pronounced deviation from the typical responses of adults living in the community.

In comparison with the IBS patients, 31 (79,5%) of the 39 non-IBS control group presented with elevated scores in comparison to the standardisation sample. This is in keeping with the predictions of the PAI that approximately 84% of non-clinical subjects will have scores within one standard deviation of the mean as determined by the standardisation sample while 98% of non-clinical subjects will have scores below the mean as determined by the clinical subjects. In this study, 31 (79,5%) of the non-IBS controls had scores below the standardisation mean and a total of 38 (97,43%) had scores below the clinical mean. One non-IBS control had a clinically significant elevation on the Borderline Features sub-scale.

Whilst it may seem alarming that psychopathological personality trends and symptoms were detected in 31 (76,9%) of the non-IBS control group, these levels were normal in 23 (74,2%) of these subjects relative to the standardisation sample which consisted of one thousand community-based adults used in the development of the PAI. It must be emphasised that these personality trends and symptoms exist along a continuum and that at certain levels, as determined by the PAI, their presence is normal and is not indicative of psychopathology. The PAI allows for the relative severity of symptomatology to be assessed by comparing each individual to the standardisation sample and to a representative clinical sample.

The diversity of statistically significant psychopathological personality trends and symptoms reported by the IBS patients on the PAI is illustrated by the next analysis. The following statistically significant scores emerged for each of the 11 clinical scales:

Somatic complaints	: 19 (39,6%) IBS patients, no controls
Anxiety	: 18 (37,4%) IBS patients, no controls
Anxiety-related disorders	: 15 (31,3%) IBS patients, no controls
Depression	: 19 (39,6%) IBS patients, no controls
Mania	: 9 (18,7%) IBS patients, no controls
Paranoia	: 3 ( 6,2%) IBS patients, no controls
Schizophrenia	: 10 (20,8%) IBS patients, no controls
Borderline features	: 9 (18,7%) IBS patients, 1 ( 2,5%) control
Antisocial features	: 1 ( 2,1%) IBS patients, no controls
Alcohol problems	: 1 ( 2,1%) IBS patients, no controls
Drug problems	: 2 ( 4,2%) IBS patients, no controls

In assessing the significance of the present study, it is of particular value to compare the results with the study carried out in South Africa by Els *et al.* (1995: 1368-1372). Although the two studies are not entirely comparable due to gender differences in the samples of IBS patients, the results indicate a similar trend. Els *et al.* (1995: 1368) report that 74% of their sample had at least one co-morbid psychiatric diagnosis. This finding is confirmed, possibly to a greater extent, by the present study which identified 98% of the IBS patients as having elevated scores on the PAI, 34% at a clinically significant level. This comparison of results is however hampered to a certain extent by the fact that Els *et al.* (1995: 1368) did not use the PAI in their study and the criteria for psychiatric diagnoses are therefore not identical.

More systematic research is required in South Africa to assess the incidence of co-morbid psychopathology in IBS patients of all races. Trends within the white population appear to be comparable to those identified in overseas research but generalisations can not be made regarding the diverse South African population. Considerable effort will be required to cater for the many cultural variables and their potential to contaminate results but the opportunities for research into this field are immense.



## REFERENCES

- ALPERS, DH 1983: Functional gastrointestinal disorders. **Hospital Practice**, 18(4): 139-43, 147-50, 152-3.
- BARKSY, AJ 1987: Investigating the psychological aspects of IBS. **Gastroenterology**, 93(4): 902-4.
- BENNETT, P 1989: Gastroenterology. (In: Broome AK ed. 1989: Health Psychology, processes and applications. London: Chapman and Hall.)
- CHAUDHARY, NA & TRUELOVE, SC 1962: The irritable colon syndrome. **Quarterly Journal of Medicine**, 31: 307-22.
- CLOUSE, RE & ALPERS, DH 1986: The relationship of psychiatric disorder to gastrointestinal illness. **Ann. Rev. Med.**, 37: 384-95.
- DROSSMAN, DA 1983: Patients with IBS: seeing the forest for the trees (or how not to bark up the wrong tree). **Journal of Clinical Gastro-enterology**, 5: 489-492.
- DROSSMAN, DA 1994: The Functional Gastrointestinal Disorders: Diagnosis, Pathophysiology and Treatment - a Multinational Consensus. Boston: Little, Brown & Co.
- DROSSMAN, DA; MCKEE, DC; SANDLER, RS; MITCHELL, CM; CRAMER, EM; LOWMAN, BC & BURGER, AL 1988: Psychosocial factors in IBS: a multivariate study of patients and non-patients with IBS. **Gastroenterology**, 95: 701-708.
- DROSSMAN, DA & THOMPSON, WG 1992: The irritable bowel syndrome: review and a graduated multicomponent treatment approach. **Annals of Internal Medicine**, 12(1): 1009-1016.
- DROSSMAN, DA; ZHIMING, LI; TONER, BB; DIAMANT, NE; CREED, FH; THOMPSON, D; READ, NW; BABBS, C; BARREIRO, M; BANK, L; WHITEHEAD, WE; SCHUSTER, M & GUTHRIE, EA 1995: Functional bowel disorders: a multicentre comparison of health status and development of illness severity index. **Digestive Diseases and Sciences**, 40(5): 986-995.
- ELS, C; GAGIANO, CA; GRUNDLING, H DE K; VAN ZYL, J & JOUBERT, G 1995: A study of psychiatric illness in patients with irritable bowel syndrome. **South African Medical Journal**, 85(12): 1368-1372.
- ENCK, P & WIENBECK, M 1993: Epidemiology and psychological factors of the IBS. **European Journal of Gastroenterology and Hepatology**, 5(12): 979-989.
- FOLKS, DG & KINNEY, FC 1992: The role of psychological factors in gastrointestinal conditions: a review pertinent to DSM-IV. **Psychosomatics**, 33(3): 257-270.
- HISLOP, IG 1971: Psychological significance of the irritable colon syndrome. **Gut**, 12: 452-57.
- LATIMER, PR 1981: Irritable bowel syndrome: a behavioural model. **Behaviour Research and Therapy**, 19: 475-483.
- LATIMER, P; SARNA, S; CAMPBELL, D; LATIMER, M; WATERFALL, W & DANIEL, EE 1981: Colonic motor and myoelectrical activity: a comparative study of normal subjects, psychoneurotic patients and patients with irritable bowel syndrome. **Gastroenterology**, 80: 893-901.
- LISS, JL; ALPERS, D & WOODRUFF, RA 1973: The Irritable Colon Syndrome and psychiatric illness. **Diseases of the Nervous System**, 34: 151-157.
- MOREY, LC 1991: Personality assessment inventory: professional manual. Odessa, Florida: Psychological assessment resources.
- SANDLER, RS; DROSSMAN, DA; NATHAN, HP & MCKEE, DC 1984: Symptom complaints and health care seeking behaviour in subjects with bowel dysfunction. **Gastroenterology**, 87: 314-8.
- SVEDLUND, J; SJODIN, I; DOTEVALL, G & GILLBERG, R 1984: Upper gastrointestinal and mental symptoms in Irritable Bowel Syndrome. **Scandinavian Journal of Gastroenterology**, 20: 595-601.
- THOMPSON, WG 1994: Functional bowel disorders and functional abdominal pain. (In: Drossman, DA 1994: The Functional Gastrointestinal Disorders: Diagnosis, Pathophysiology and Treatment - a Multinational Consensus. Boston: Little, Brown & Co.)
- THOMPSON, DG & HAWKEY, CJ 1995: Gastroenterology. **Medicine International**, 22(8): 327-332.
- WALKER, EA; GELFAND, AN; GELFAND, MD & KATON, WJ 1995: Psychiatric diagnoses, sexual and physical victimization, and disability in patients with irritable bowel syndrome or inflammatory bowel disease. **Psychological Medicine**, 25: 1259-1267.
- WALKER, EA; ROY-BYRNE, PP; KATON, WJ; LI, L; AMOS, D & JIRANEK, G 1990: Psychiatric illness and irritable bowel syndrome: a comparison with inflammatory bowel disease. **American Journal of Psychiatry**, 147(12): 1656-1661.
- WHITEHEAD, WE; BOSMAJIAN, L; ZONDERMAN, AB; COSTA, PT & SCHUSTER, MM 1988: Symptoms of psychologic distress associated with irritable bowel syndrome. **Gastroenterology**, 95: 709-714.
- YOUNG, SJ; ALPERS, DH; NORL, CC & WOODRUFF, RA 1976: Psychiatric illness and the irritable bowel syndrome: practical implications for the primary physician. **Gastroenterology**, 70: 162-166.