CHAPTER 11

11.0 DISCUSSION OF RESULTS

11.1 Discussion on the Test Results of the MCMI-II

The fact that the discriminant model has chosen the combination of Debasement and Schizotypal as predictive of non-compliance, in no way invalidates the significance of the factors found to be highly significant on the Kruskal Wallis test. In fact the trait of Major Depression in that test was more significant than either schizotypal or debasement but intercorrelated and overlapped too much with the other factors to be part of the discriminant model.

11.1.1 Traits found to be significant at the 5% level

The Disclosure Scale (X) was significant at the 5% level in the current study.

As pointed out by Choca et. al. (1992), the first modifier index in the MCMI2, is not a scale in the usual sense but is a composite scale computed from the personality scales. An elevated Disclosure Index is often indicative of a person's feeling that they have more traits or psychological symptoms than they do have. In other words, patients feel more distressed and 'out of control' and therefore might show less compliance due to their personal instability and their focus on their inner, painful world, rather than their medical treatment.

A high level of disclosure could indicate a cry for help. The person is aware that there are problems and feels that stating them or at times overstating them might bring help. As this was significantly raised, the non-compliant individual shows a need to state his/her discomfort and his/her psychological symptoms. There is a need to let people know how he/she feels.

The Debasement Scale (Z) was significant at the 5% level in the present study.

The debasement scale, also a modifier scale, taps an attempt to look bad and exaggerate negative traits on the inventory. The most prominent items are about feeling physically and emotionally empty, having low self esteem and becoming angry or tearful at little provocation. There may be feelings of being unwanted or disliked, tension and self destructive feelings. There is also some guilt and depression and feeling uncomfortable around others (Choca et. al., 1992). Elevations on this scale could also indicate a cry for help, and these are indicators of erratic moods, a desire to hurt people, a suspicious attitude and some mental confusion. It appears that the non-compliant person feels extremely uncomfortable with him/herself, and his/her efforts of finding comfort and relief are more geared to relieving the psychological and psychiatric symptoms, whereas often the physical aspects of the illness, and compliance end up finding second place.

The admonitions to think positively about the cancer in order to get better and remain well, described by Holland (2000) as the 'tyranny of positive thinking' are especially difficult for these patients.

They find that to have to think positively is difficult and often impossible and therefore engenders a lot of conflict. 'I am ill again because I can't be positive about things and if I can't be positive what is the use of taking medicine?' They continue condemning the self, feeling that because of that negative and miserable attitude, they cannot do well with their treatment.

Another aspect of debasement which would have an influence is the feeling of general worthlessness. The person doesn't feel that he/she is really worth bothering about, especially where it entails looking after his/her health.

Often he/she gives up because of inconvenience (Kottenhahn, Rosenthal & Biro, 1996; Cohn & Pizzi, 1993) where the treatment is at times too lengthy or complicated to bother about (Buring et. al., 1999,; Nolting et. al.,1998), and certainly not to bother about caring for the self.

Kamiya et. al. (1995) did a clinical survey on the compliance of exercise therapy for diabetic outpatients which illustrate this. The principal reasons for low compliance were 'lack of time to do' and 'lack of mind to do'. 'Lack of time to do' was particularly numerous in male patients.

The feeling about themselves is often so bad that not only do they feel that it is not worth bothering about themselves and their treatment, but even more so, they are not worthwhile enough to be bothering and inconveniencing other people by their treatment. Things like transport (Rubel and Garro, 1992) and special diets (Wolfe, 1995; Thomas, 1994) are seen as

inconveniencing others and they try to withdraw from this as soon as possible. Having to be transported to and from hospital and having to have people waiting with them makes them feel a burden on relatives and friends. Special diets often at irregular hours might be seen as inconveniencing a family system which already has its own stresses. The high cost of medication and treatment can put a great deal of stress on the family (Rubel and Garro, 1992; Johansson et. al.; 1996) and the patient wants to relieve them of this burden as soon as possible. Within the context of his/her distorted thinking, the patient often feels that it would be better to abandon the regimen as soon as possible to avoid being a burden or a nuisance.

The Avoidant Personality Trait (2) was found to be significant at the 5% level. The avoidant personality trait is indicative of social detachment, approach-avoidance conflict and social apprehension so that the person avoids interpersonal contact in order to reduce anxiety. The person ends to mistrust others and has feelings of worthlessness, the desire to isolate him/herself, low self esteem, suppression of his/her own feelings and sexual inhibition (Choca et. al., 1992).

Within the context of this study it is probably true to say that all non-compliance signifies some kind of avoidance though certain reasons given are related in a more direct and obvious way. The avoidant person would tend to distance themselves from anything unpleasant or threatening.

Bayon, Hill, Svrakic, Przybeck and Cloninger (1996) point out that in the Avoidant scale interpersonal relationships are disturbed by distrust and suspiciousness, which could have a

devastating effect on the doctor/patient and nurse/patient relationship.

Comolet, Rakotomalala and Rajaonarioa (1998) studying compliance with tuberculosis treatment in an urban environment, in Madagascar found that false addresses given by patients were both a methodological bias and a risk factor for future default.

An important aspect of avoidance relating to non-compliance is the factor of forgetfulness. Obviously many different aspects operate here, from avoidance and denial and resistance to treatment (where there appears to be real forgetting) to the cognitive experience of actually not remembering.

Forgetfulness has been found to be associated with non-compliance. (Al-Shammari et. al., 1995; Tebbi, 1993; Mulet Pons et. al., 1995; Leickly et. al., 1998 and Meyers, Thomson and Weiland, 1996).

Forgetting the appointment was one of the most common reasons for non-attendance at clinic by outpatients with schizophrenia (Carrion, Swann, Kellert-Cecil and Barber, 1993). Conway et. al. (1996) found that the most common reason given for omitting treatment in adult patients with cystic fibrosis was forgetfulness. Similar results were found by Balazovjech and Hnilica (1993) in their study of irregular drug taking in hypertensive patients.

Fong, Ho, Fung, Lee, Tse, Yuen, Sin and Wong (2003) found that though most of their HIV/AIDS patients were monitored and maintained a good adherence level despite using a

complex HAART regimen, partial drug adherence was, associated with the psychosocial factors of missing clinic appointments forgetfulness and a busy work life.

Halkitis Parsons Wolitski and Remien (2003) found that avoidant coping, frequency of drinking alcohol and difficulty in communicating with sex partners about HIV were related to days of missed doses, suggesting the need or desire to escape from the reality of life with HIV, as a potential explanation for poor adherence.

There are many what can be termed for the purposes of this study 'avoidance distortions' which influence a person's behaviour. It is a common distortion that a person is only suffering from a serious illness once it has been diagnosed, and the person avoids the diagnosis as long as possible feeling that this way they somehow remain 'cancer free'. It is a common practice to date the duration of the illness from the date of diagnosis even though the patient was obviously ill before that. The person might not attend screening or follow up visits 'in case the doctor finds a problem'. Further to this point the patient might not give to the doctor certain vital information, thus trying to avoid the issue.

Therapists rated 52 social phobic clients' adherence to group cognitive-behavioural treatment (CBT). Using the MCMI, avoidant personality traits were negatively associated with participation during group treatment sessions (Edelman and Chambless, 1995).

Another popular avoidance distortion is the popular ethic 'the less medicine the person takes, the better,' and the patient might be genuinely congratulated by friends and family because

he\she has cut his\her medication in half or has managed to get off it altogether without the doctor's permission. The message is that a person must distance him/herself as far away as possible from his/her illness and treatment.

The Passive-Aggressive Scale (8A) was found to be significant at the 5% level.

The passive-aggressive individual has an intense dislike of being controlled, has a resentful attitude towards authority, and has moodiness, guilt and remorse. He/she has a mistrust of others and a desire to hurt him/herself and others, as well as a desire to receive more appreciation and recognition. Millon's (1969) passive-aggressive style is more properly called a negativistic style, characterised by erratic emotionality, petulant quarrelsome and demanding behaviours. The ambivalence is expressed in personality as being disruptive and argumentative at one moment (e.g. the passive-aggressive component) and withdrawn and contrite at the next moment (e.g. the detached component). The DSM-IV's (American Psychiatric Association, 1994) Passive-Aggressive (Negativistic) personality disorder is closer to Millon's characterisation of this disorder.

This trait would influence a patient's attitude to his/her doctor. Hostility toward authority figures tends to decrease compliance (Anderson and Kirk, 1982). The doctor is often seen as an arch authority figure. The patient resists and resents the imposition of medical intervention and the control of a treatment regimen. Bayon et. al. (1996) points out that in the passive aggressive scale interpersonal relationships are disturbed by distrust and suspiciousness.

On another level the passive/aggressive person is very involved in interpersonal relationships and in many ways, his/her level of aggression controls the way in which he/she deals with the medical staff. The doctor-patient relationship is very vulnerable to this trait. There are many difficulties in the doctor/patient relationship in general in relationship to compliance (Bour, Blanchard and Segal, 1993; Haag and Gerber, 1993; Gupta et. al., 1998) but this escalates in the strong presence of the passive-aggressive trait.

In a study of children who are undergoing treatment for malocclusion, Johnson et. al. (1998) noted that the patients perceived that others do not understand what they are going through, they might be embarrassed, and some may break their appliances to annoy the parent or orthodontist.

Gupta et. al. (1998), in suggesting a patient education programme in bronchial asthma in India, outlines many barriers to compliance such as: dislike for prolonged supervision and follow-up investigations; and distrust for doctors, obviously connected to passive aggressive resistance.

Randolph & Fraser (1998; 1999) studied stressors and concerns in teen asthma, and its relationship to compliance. They concluded that adolescence is a time of increased stress because of intellectual, physical, and sexual maturity culminating in a desire for autonomy. Chronic asthma is perceived as a burden handicapping autonomy. This is apparent in the impairment of athletic and social activity. Furthermore, there is the requirement for inhaled medications that are perceived as hampering crucial peer identification. Non-compliance is

probably a passive aggressive reaction to all these things.

In a study of 90 1st-time admitted alcoholics in an outpatient clinic, high scores on the passive-aggressive scale on the MCMI -1 predicted early dropout from treatment. (Simonsen, Haslund, Larson and Borup, (1992) The passive aggressive person looks for all kinds of ways to vicariously express aggression and non-compliance can be an effective one.

For different reasons to the self defeating person (who will default on their medical regimen to spite themselves), the passive/ aggressive person might default to spite someone else, such as the doctor or the family member, as mentioned in the study of the diabetic adolescent (Schlundt et. al., 1994a). Such statements as 'the doctor was rude therefore I am walking out of the clinic and I am not taking HIS medication.' or I will show that doctor! I won't come back and I won't take his pills', even though self defeating in the extreme are still there to get revenge on the doctor.

The Self-Defeating Scale(8B)was significant at the 5% level in the current study. The self defeating personality style is a more pathological form of the passive-aggressive style. The person has a very poor self-image, needs the help of others to make ends meet, is uncomfortable when treated well and seeks rejecting and defeating situations and relationships. He/she seeks out mistreating interaction and harbours a great deal of resentment. He/she devalues both him/herself and others, frustrates and angers others, and tends to activate a person's anger and frustration, perhaps one of these behaviours being non compliance with medical treatment. He/she tends to behave in a way which is, in Mennenger's (1938) terms,

'against himself' and tends to spite himself and others at the expense of his/her health and well-being.

Freud (1920) was the first theorist to introduce the concept of the death instinct. He described an unconscious drive toward self destruction inherent in everyone. This could manifest in various forms such as self mutilation, self denial, depression, aggression, destructive impulses towards others, and, in extreme cases, suicide. The self defeating style would be fostered and nurtured by this concept, non compliance very much having a place amongst the above list.

Mennenger's (1938) "Man Against Himself" lifestyle is a self defeating lifestyle. An increase in that lifestyle would go hand in hand with non compliance, self defeating being a non compliant lifestyle. Preservation of the self and he health of the self is superseded by the need to destroy the self, in various subtle or more obvious ways.

It is interesting to note Lall (1995)'s score for a suicidal group, (perhaps in terms of Mennenger (1938), the ultimate in self destruction and non-compliance,) which they studied had significantly higher elevations on the following MCMI-II Scales: Debasement, Schizoid, Avoidant, Passive-Aggressive, Self-Defeating, Borderline, Anxiety, Dysthymia, and Alcohol Dependence, which is very similar to the non-compliant group. Except for not finding the schizotypal and major depression traits to be significant, all of the abovementioned were found to be significant in this present study. This is possibly because suicide has some connection with the refusal to comply with treatment in a life threatening illness.

Stone et. al. (1998) found that HIV/AIDS patients resented the need to make medications the focus of their lives and did not comply with treatment, in many ways to spite themselves and their illness.

Samson & Showalter (1996) found cost to be a major reason for non-compliance in the wearing of stockings for the prevention of recurrent venous ulcers.

The self defeating person certainly does not have his/her health anywhere close to the top of the list of priorities. This is low on the order of things of importance. He\ she him\herself is simply not worth making an effort for.

They do not feel they are worth making any effort for, either by themselves or others or that they can ask for too much. Any difficulties are enough to make them non compliant, either with cost or complications of treatment.

The Schizotypal Trait (S) was found in this present study to be significant at the 5% level. This is a pathological combination of the schizoid and the avoidant personality styles. The Schizotypal individual has a fear of human contact, suspicion and mistrust of others, preference for a life of passive isolation and has very few real relationships. He/she has features of eccentricity, has peculiar habits, and mixes fantasy with reality. He/she is anxious and apprehensive, has flattened affect, and often depersonalisation, feelings of emptiness and ideas of reference.

DiDuca and Joseph (1999) list the seven subscales in the Schizotypal Traits Questionnaire (JSS), designed to measure Schizotypal traits in adolescents. These seven subscales, which give greater clarity on the whole concept, are: physical anhedonia, social anhedonia, paranoid ideation, magical ideation, cognitive disorganisation, perceptual aberration, and impulsive nonconformity. This further elucidates the preference for the unusual or the alternative treatment approach or, in fact the following of the person's 'own' treatment where they listen 'to their body' as to what they need.

Much of the literature has been on the Schizotypal Personality Disorder, cited here as it clarifies the Schizotypal trait. Goshe (2000) mentions that the hallmark features of Schizotypal Personality Disorder include odd beliefs, unusual perceptual experiences, pervasive interpersonal deficits and social isolation.

Kolliakou and Joseph (2000) showed that tobacco smoking, very real non compliant negative health behaviour was associated with schizotypal and borderline traits. Black and Moyer (1998) found co-morbidity with gambling behaviour and schizotypal personality disorder, again a searching for solutions of 'luck' and 'chance'.

Berenbaum (1999) and Berenbaum, Valera and Kerns (2003) research links schizotypal traits to the experience of trauma and to post traumatic stress.

Because of some of these factors such as the interest in the esoteric (Chequers, Joseph and Diduca , 1997) the person probably tends to pursue the alternative or traditional medicine

routes of treatment. These would influence markedly the compliance of the patient with allopathic medicine. He/she might even have strange perceptions of the aetiology of disease, using many lay misconceptions.

Schoenberg, Amey & Coward (1998) felt that the divergence between lay and professional perspectives on the aetiology and treatment of chronic diseases, such as non-insulin dependent diabetes mellitus, may possibly account for the documented low rates of adherence to biomedical recommendations.

Among many other serious factors, Gupta et. al. (1998) in suggesting a patient education programme in bronchial asthma in India, outline many barriers to compliance in this area. These include the presence of superstition and misconceptions, ignorance dislike for prolonged supervision and follow-up investigations, distrust for doctors, fear of social stigma, lure for homeopathy and indigenous branch of medicine for children. It is suggested that the schizotypal individual would be vulnerable to these concepts.

The Anxiety (A) Scale was found to be significant at the 5% level in the present study. The person with the trait of anxiety can show apprehension, phobic reactions, indecision, tension and restlessness. He/she might have associated physical discomfort. He/she has poor confidence in his/her abilities, has low self-esteem and feels unwanted and unappreciated and prone to sudden tears and anger. He/she is dependent and despondent. He/she has a perception of an inability to 'do things right'. Generally this scale is a very sensitive indicator of psychological distress and disturbance (Choca et. al., 1992).

MacLean and Lo (1998) found that in the non-insulin-dependent diabetic that failure to comply was a function of a syndrome of stress, chronic and transient mental distress. Molassiotis, Nahas-Lopez, Chung, Lam, Li and Law (2002) mention anxiety as a strong predictor of non-adherence, and treatment for this should be offered to patients, increasing not only adherence rates but also improving quality of life. Problems with adherence levels with antiretroviral medication were found by Puigvents, Riera, Delibes, Pearanda, de la Fuente and Boronat (2002) to be related among other factors, to stress, with its counterpart of anxiety.

Anxiety and stress show an influence on compliance, generally, but not always, in a negative direction. An interesting result was found by Bille (1981) who found that patients in general with either high or low anxiety showed complications in complying. This would indicate that a patient should have a basic amount of anxiety to be compliant.

Following carefully a schedule of dosing takes a certain amount of well being. Anxiety can prove for or against a dosing schedule. The person might feel too scared not to take and too scared to take. There is often a tendency to take too few and feel he/she is doing the right thing.

Sometimes anxiety and fear of what might happen with the medication stops the person from taking it. The side effects cause a lot of anxiety and there is a fear of what might happen.

Bassetti et. al. (1999) in the Swiss HIV Cohort Study found that one of the most common reasons for discontinuing treatment were actual side effects or the fear of side effects.

The associations of the MCMI-11 symptom scales with depositional coping strategies were studied among 239 psychiatric outpatients (Vollrath, Alnaes and Torgersen , 1994).

High scores on the anxiety scale were predicted by little use of emotional support, less acceptance, increased disengagement (mentally and behaviourally, and increased focussing on one's own feelings and ventilating them. The Dysthymia (D) Scale was found to be significant at the 5% level in the present study.

The dysthymic person is apathetic, has a dejected mood, feels discouraged, guilty and hopeless and has lack of personal initiative. He/she suffers from physical and emotional exhaustion and has difficulty sleeping. He/she has low self-esteem and self-destructive thoughts and acts. The person is easily provoked to tears or aggressive outbursts. He/she distrusts others and is somewhat perfectionistic (De Beer, 1995). Many of the studies on depression could possibly overlap with this trait. These are discussed in detail below.

There are various aspects of dysthymia which could lead to non compliance: The apathy and lack of personal initiative could grossly blunt the motivation and energy required to adequately comply with a fairly strict medical regimen. These aspects, backed up by the self-destructive tendencies can produce in the person a very high level on non compliance which is then seen as 'not worth the bother' as the patient him/her self is, anyway, not worth bothering about.

An important factor in dysthymia is the 'need to feel better'.

Patients often give, as an explanation for their discontinuing therapy, the fact that they feel better when they don't take the treatment. The dysthymic person is so uncomfortable with him/herself that they spend a lot of time and energy finding ways to make themselves FEEL better at that moment and they override the eventual condition or consequence.

The person who is dysthymic and depressed can feel really bad and the cancer makes them feel bad and then the treatment makes them feel worse and they don't comply. This gives them an instant 'feeling better' gratification. The popular opinion of illness is that if a person feels worse he\she IS worse. It is often difficult to convey to the patient that a person may feel worse while on treatment. It is often difficult for people to understand this in our culture of instant feeling better gratification. They end up by blaming the medicine rather than their illness for their ill health.

Balazovjech & Hnilica (1994) did a study on compliance with antihypertensive treatment in consultation rooms for hypertensive patients. They found that besides forgetting, the feeling of well-being without therapy was one of the principal reasons given for irregular drug taking.

Another factor is that with their demotivating sense of worthlessness, they might resign themselves to a hopeless prognosis. Whatever else that might be told to them about a potentially good prognosis. They may see cancer as death and resign themselves to die.

If they encounter any difficulties in the treatment such as any kind of discomfort or difficulties, they can feel it is not worth fighting and they can give up easily (Andersen et. al.,

1995; al-Shammari et. al., 1995).

Besides actual poverty which can be very real, the person who could afford the treatment might not feel that their health or in fact themselves is worth too much.

Needham, Godfrey-Faussett & Foster (1998) studied barriers to tuberculosis control in urban Zambia. The economic burden of tuberculosis on patients created barriers to prompt diagnosis which lead to continuing transmission of the infection. Important economic barriers included transportation expenditure, cost of 'special food', and lost income. Even if the family could afford this it is often simply too much especially if the patient has low self esteem. Either the illness is not worth making the effort for or the person is not worth making the effort for in his or her own estimation.

The Alcohol Dependence (B) Scale was found to be significant at the 5% level in the present study.

The alcohol dependant person has a history of excessive drinking that causes problems at work and in the home. He/she has impulsivity, low self-esteem, an aversion to being controlled, and often feels tense, tired, lonely, and irritable. (De Beer, 1995). It is important that efforts be made to help the patient to overcome his/her drinking as the first step to compliance as the effects of excessive alcohol consumption generally does not allow the person 'space' to follow a medical regimen adequately. His/her very life is one of non-compliance with health habits as he/she is usually very aware of some, at least, of the

detrimental effects his drinking can have on his health. In general, the person with a dependence on alcohol tends, at least part of the time, to be of inadequate responsibility in some of the major aspects of his life, and medical compliance would be badly affected by this. He/she would be unlikely to follow, adequately, the medical regimen or do so only when it suited him/her. The person has a diminished sense of responsibility and a deliberate blurring of reality.

Their life style causes them not to look at or make the effort to handle things, and they tend to 'drown their sorrows rather than do anything about them. They might resign themselves to a hopeless prognosis even when their actual medical condition is far from hopeless. They also tend to act on making themselves feel better and relieving themselves by taking alcohol. They are hardly likely to follow a difficult and uncomfortable regimen that makes them feel emotionally and physically unwell and disadvantaged.

The Major Depression (CC) Scale was found to be significant at the 5% level in the present study.

The person suffering from major depression has severe depressive mood disturbances that prevent the person from functioning. He/she has difficulty sleeping has a sense of hopelessness and a fear of the future. The person is agitated, has psychomotor retardation and feels physically drained. He/she is moved to anger or tears at little provocation, feels unworthy and undeserving and engages in self-destructive behaviours. He/she is socially withdrawn, sexually inhibited, feels tense and confused and has low self-esteem (Choca et. al.,

1992).

Major depression is definitely a factor to be very seriously considered on its own. Even though the discriminant model did not find major depression to be one of the predictive factors in non compliance, due, possibly, as they mention, to the intercorrelation between the other factors on the MCMI-11, it scores as highly significant in the Kruskal Wallis test and it must be noted that it is extremely important to be aware of diagnosing this and treating a depression. In the review of the literature depression was found to have a marked effect on compliance and must be seen as a priority in dealing with the non-compliant patient, to discuss this with the patient's oncologist and if necessary to refer to a psychiatrist (Brewin, 1998; Berard, 2001; Passik et. al., 1993; Ballenger et. al., 2001; Lesko, 1994).

As mentioned previously, recent studies are showing a substantial and consistent relationship between adherence to antiretroviral regimens and depression (Starace, Ammassari, Trotta, Murri, Delongis, Izzo, Scalzini, d'Armino, Wu and Antinori, 2003). Similar findings are reported by Carrieri, Chesney, Spire, Loundou, Sobel, Lepeu, Moatti, Boirot, Bouhnik, Cassuto, Dellamonica, Dujardin, Duran, Gallais, Gastaut, Lepeu, Marimoutou, Negre, Obadia, Poizot-Martin, Pradier, Rey, Rouzioux, Tremolieres and Vlahov (2003) and Spire, Souville, Leport, Raffi and Moatti (2002). Holzemer et. al. (1999) found that HIV-positive clients with higher symptom scores, particularly depression, were more likely to be non-adherent to medication, not to follow provider advice, and to miss appointments.

Murphy, Wilson, Durako, Muenz, and Belzer (2001) found that adherence to HAART among

HIV -infected adolescents was highly problematic. Among this sample of 161 patients prescribed either triple drug combinations or a combination tablet and one other antiretroviral, only 41% of the sample reported adhering consistently to their medication regimen. The strongest and most consistent finding was the relationship between depression and adherence. Only 29% of the depressed subjects were fully adherent whereas 55% of non-depressed subjects were full adherent.

Carney et. al.'s (1995) work with patients over the age of 64 years with coronary artery disease, suggests that depression may explain the increased risk of medical morbidity and mortality found in these older medical patients. Depressed patients adhered to the regimen on 45% of days, but non depressed patients, on 69% of days.

Bosley et. al., (1995) found that the non-compliant group in asthma treatment had a higher score for depression than the compliant group. In a study of treatment compliance following kidney transplantation, Kiley et. al. (1993) found that depression was one of the factors associated with non-compliance. Edinger et. al. (1994) found similar results in sleep apnea and Kimmel et. al. (1995), with haemodialysis. Simoni, Frick, Lockhart and Liebovitz (2002) found depressive symptomatology to be related to missed doses of medication.

11.1.2 Traits found to be significant at the 10% level

The Schizoid Personality Trait (1) was found in this present study to be significant at the 10% level.

The schizoid personality trait is indicative of a lack of close relationships with others and a lack of warmth or ability to express feelings and emotions. They might be loners by nature and by choice. They are somewhat detached. They are therefore grossly lacking in any kind of support system, either because they have not been able to establish one, or they have not been able to use the established one or an offer of one.

Cox (2002) found that having emotional support was a factor predictive of a "good complier" with HIV medication. Kiley et.al. (1993), in their study of treatment compliance following kidney transplantation, compliance and non-compliance were, among other things, associated with the perceived amount of social and family support.

The person with a strong schizoid trait has to face the illness alone, by conscious or unconscious choice. Compliance, therefore rests entirely on him/herself. He/she tends not to discuss things that are worrying him with the doctor or even with fellow patients or acquaintances.

He/she is hesitant to come forward to speak about what is really happening inside. He/ she would be the person who would quietly disappear from therapy or from follow ups without expressing any anger or distress to anyone who could help or support him. The doctor would generally not be aware that there was a problem because he\she would never have discussed it. Acquaintances and family would not even be informed that he/she had an appointment that he/she was missing. This would be kept to him/herself.

The Borderline (C) Scale was found to be significant at the 10% level.

The borderline personality includes pervasive unstable moods, relationships and self-image. He/she responds to the environment in an extremely impulsive and over-emotional way, which results in emotional liability that can range from apathy and numbness to intense, over-involved reactions. Underlying this is a sadness, hopelessness and aimlessness. He/she resents control and authority, and this leads to anger, aggression and destructive feelings and actions towards others and him/herself. There is also guilt and remorse. He/she has an unstable self-image, has feelings of worthlessness, has self-doubt and feels he/she has been used by others and is 'second-hand' (De Beer, 1995).

Many of these traits could in themselves lead to non-compliance. The resentment of control or authority can cause serious problems in the doctor-patient relationship. In fact, Bayon et. al. (1996) mentions that Millon found borderline to be strongly and negatively correlated to cooperativeness. However this may not be only in terms of control but in the way the patient perceives the relationship as caring or indifferent. The self destructive feelings and the inconsistency could severely affect the discipline and the self motivation needed to follow some of the more complicated treatment regimens. Often the patient would feel it was simply 'not worth it".

The borderline trait could be synonymous with a non-compliant life style. In this respect it is interesting that this trait is not significant at the 5% level

The person with strong borderline traits cannot tolerate 'feeling bad' and will go through great lengths to avoid this.

Much of their daily effort is put into 'feeling better'. Schlundt et.al. (1994a) interviewed twenty adolescents with insulin-dependent diabetes mellitus to obtain samples of problem situations that create obstacles to dietary adherence. One of the obstacles to dietary adherence which were found was negative emotional eating which is an attempt to make themselves feel better.

As discussed in the section on dysthymia. The person with borderline traits feels really bad within him/herself, and then the cancer with its diagnosis makes them feel worse and then the treatment makes them feel even worse and he/she does not comply. They strive towards a more comfortable inner emotional state which the treatment, especially chemotherapy, disturbs. This is then a sign to abandon treatment as he/she has an almost overwhelmingly powerful motivation to take away the terrible feeling and feel better.

Balazovjech & Hnilica (1994) found that forgetting and feeling of well-being without therapy were the principal reasons given for irregular drug taking in hypertensive patients.

Al-Shammari, Khoja & al-Yamani (1995), working with compliance with short-term antibiotic therapy among patients attending primary health centres in Riyadh, Saudi Arabia, found that one of the reasons most frequently mentioned by patients for non-compliance was the bitter taste of the drug(s). It would be the borderline who might be afraid of anything that might make them feel worse and less able to cope. They would avoid uncomfortable

experiences. The borderline also has any attachment difficulties and often chooses significant others who they want to impress. Compliance or non-compliance could be dependant on attachment difficulty or dependant on what 'lesson' they wanted to convey to significant other.

The Drug Dependence (7) Scale was, in this study, found to be significant at the 10% level.

The drug dependant person has a history of pronounced drug use that causes problems at work and in the home. He/she shows impulsivity, has a desire to hurt her/himself and others and resents authority or being controlled. He/she is generally suspicious, has mood swings, feels guilt and remorse and has a sense of aimlessness. He/she can show competitive behaviours. It is important to try to assist the person in trying to reduce his/her excessive, unprescribed drug intake.

In the very nature of drug abuse, the patient is non-compliant and very much aware of this. It is probably true that just as he/she feels that he/she is at liberty to abuse the drugs in taking too many, he /she is at liberty to take too few, or as he/she feels like it.

Too often they make up their own drug schedule, taking the drug 'as they feel the need', the drug taking being, as it were, to fulfill an immediate need rather than for a long term goal. Having learned to manipulate their drugs of abuse, they have little respect for their treatment drugs or their schedules.

Another problem is their resentment of authority and their 'need' to defy it. This interferes in the doctor/patient relationship where they feel a need to disobey the doctor's instructions. This is a problem especially with an authoritarian doctor or a doctor who feels that he needs to assert his authority as he finds out about the drug abuse.

As with other traits, the drug dependant person is very invested in 'feeling good' and is not careful not to endanger his/her health in doing so. If the cancer or other treatment makes him\her 'feel bad', he\she stops complying.

11.1.3 Traits not found to significantly differentiate between the groups

Obviously it must be noted that these traits did not indicate compliance but simply that they did not differentiate between the two groups.

The Desirability Scale (Y) was not found to significantly differentiate between the groups in this study.

This measures the tendency to portray oneself in a positive light. According to Choca et. al. (1992) items of the test that make the subject look confident or gregarious and allege a regard for authority and a respect for rules of society are the most prominent. Other items on this scale would point to the patient being efficient and organized, avoiding confrontation having a moralistic and fun loving attitude, and experiencing good moods.

Hershberger, Robertson & Markert (1999) did a study on personality and appointment-keeping adherence in cardiac rehabilitation. Scores on the CPI scales that were significantly related to appointment-keeping were Well-Being (perception of physical/emotional health), Socialization (acceptance of rules and regulations), and Communality (view of self as similar to others). The differences were significant on the Socialization and Good Impression scales (desire for others to have a favourable impression of oneself). It could have been expected in the present study that this scale would actually predict compliance, but in fact it was not significant.

The Dependent Personality Trait (3) was found not to differentiate significantly between the two groups.

The dependant personality trait indicates a strong need for reassuring/supportive relationships. The person has low self-confidence, a submissive attitude and desires to obtain nurturance and protection from others. He/she has a high regard for authority, is socially passive, and suppresses anger and other 'bad' feelings (Choca et. al., 1992). Millon (1969) describes the dependant personality as having compliant interpersonal behaviour who tends to abdicate self responsibility and to assume an attitude of helplessness, submission and compliance.

Therapists rated 52 social phobic clients' adherence to group cognitive-behavioral treatment (CBT). Dependency as scored on the MCMI was fond to be positively associated with homework completion (Edelman and Chambless, 1995).

It seems, however, that though the dependant personality is fundamentally compliant, they need reinforcement constantly to be able to follow up with the medical compliance, and need constant reassurance and support.

In general, emotional and social support has been found to be important in serious illness, and with the dependant person is vital. This, however, could actually have a negative impact, depending on what input, in fact, the family and friends were giving and what they believed about the treatment.

Rubel and Garro (1992) point out that the twin problems of delay in seeking treatment and abandonment of a prescribed regimen derive, often, from the health culture of the patients. That is, the understanding and information people have from family, friends, and neighbours as to the nature of a health problem, its cause, and its implications. If friends and relatives have health beliefs contrary to those of treatment compliance, or if they have conflicting or negative feelings towards chemotherapy, the dependant person might well follow them and cease complying.

The Histrionic Personality Trait (4) was not found to differentiate between the two groups in this study.

The histrionic personality trait also indicates a need for supportive relationships, but this person is, by nature, gregarious. He/she searches for attention, has impulsive inclinations, and a need for nurturance. He/she tends to easily become frustrated and bored. This could also

have been a factor in non compliance with the person becoming bored and restless with waiting around for treatment. At the same time the patient's need for support might encourage compliance. This explains in part why this variable does not discriminate between the groups. The person also tends to be impulsive and extravagant and seek out adventures and thrills (Bayon et. al., 1996).

Millon (1969), in discussing the Histrionic, exhibitionistic, personality trait, mentions that the person tends to steer clear of too much self knowledge, another factor which might influence them in either direction.

The Narcissistic Personality Trait (5) was found not to significantly differ between the two groups.

The narcissistic personality trait indicates a dislike of being externally controlled and a tendency to have overly self-sufficient relationships. The person feels superior, has a strong belief in him/her self, and a lack of empathy with others. The person also tends to be impulsive and extravagant and seek out adventures and thrills (Bayon et. al., 1996).

This could lead to rebellion against the control of the doctor/patient regimen but at the same time the self love and protection cancels this and the person might rigorously comply. They might also dislike the symptoms of the illness and its consequences such as death. This might explain the fact that this trait does not distinguish between the groups.

The narcissistic person might protect themselves from unpleasant stimuli such as the taste of the medicine (Reynolds, Neidig & Brashers, 1999; Al-Shammari, Khoja & al-Yamani, 1995).

The Antisocial Personality Trait (6A) was not found to significantly differentiate between the two groups.

The antisocial personality is indicative of a person who has resentment of authority, the dislike of being controlled, a need for self-confidence and a lack of reliance on others. The person is impulsive and distrustful, avoids emotional involvement, has a competitive nature, has a lack of empathy for others and tends to use others for his/her own purposes.

His/her aggression could cause non compliance, but on the other hand, it could fuel his/her purpose in complying but this is because it will fulfil his/her health needs, not because of any authority. The person also tends to be impulsive and extravagant and seek out adventures and thrills (Bayon et. al., 1996).

It would have been expected for this trait to have been significantly related to non compliance, but it does not distinguish between the two groups.

The Aggressive/Sadistic Personality (6B) Trait was not found to significantly differentiate between the groups.

The aggressive/sadistic personality trait is a more severe form of the antisocial personality

trait. The person is hostile, and is usually aggressive in interaction with others. He/she tends to remain independent, does not do what others tell him/her to do, and can make callous manipulative actions to get ahead of others. He/she has distrustful and hyper-vigilant defences, typically using projection defensively to blame others. Interpersonally, he/she is touchy, excitable, irritable, 'flies off the handle' and has aggressive outbursts when confronted or challenged.

Again his anger and resistance to the controlling force of the medical regimen is tempered by his/her self love and protection.

The Compulsive Personality Trait (7) was found not to significantly differentiate between the groups.

The compulsive personality style is indicative of an individual who is compliant to authority, has a tendency to be controlling with everyone else, has a moralistic attitude, a belief in following the rules, and keeps his/her emotions in check. He/she is orderly and meticulous, and feels that his/her way is the only way. The emphasis is on predictability, a tendency to social anxiety, self-righteousness and sexual inhibition (Choca et. al., 1992). He/she can have orderliness, stinginess and control (Bayon et. al., 1996).

It would have been expected that the compulsive person would have been significantly compliant. In fact this has been found in other research. Whitmarsh (1999) did a study on alcoholics presenting themselves for treatment in an outpatient clinic, one of the measures

they used being the MCMI-111. Their results suggested that compulsive personality structure is present in alcoholics and that it correlates with treatment success in early recovery. These people tended to remain in treatment.

However this personality trait seems to need both compliance and a need to follow his/her often individualistic and rigid 'own way', and this seems to balance out.

It is surprising that this trait did not differentiate between the two groups. One would have expected a reverse relationship of super-compliance but this was not so and in some ways this trait must have worked in both directions.

The Paranoid (P) Trait was not found to significantly differentiate between the two groups.

The person with a paranoid personality style resents authority and criticism, is insensitive to others and feels emotionally and physically disconnected. He/she has a fear of losing autonomy, resists all attempts by others to have an influence on him/her or have elements of control in his/her life. He/she also tends to be perfectionistic and well-organised, moralistic, impatient and irritable, short-tempered and competitive (Choca et. al., 1992).

The paranoid person would have difficulty in believing the doctor. They also have difficulty believing they have cancer and then not believing they are not going to die and that they can go into remission.

Again there is a balance between a resentment of authority and the intrusiveness of a foreign medical regimen and a rigid following of the rules in a perfectionistic way.

It would have been expected hat his trait would have differentiated between the two groups but it did not. It could be that the aspects of suspicion and perfectionism somehow balanced one another out.

In their study of adherence of social phobic patients to group cognitive-behavioral treatment (CBT), Edelman and Chambless (1995), found that subjects scoring high on the paranoia scale on the MCMI were less likely to complete self-directed exposures, thus showing, in their research, certain aspects of non-compliance.

The Somatoform (H) Trait was found not to significantly differentiate between the groups.

This clinical syndrome is characterised by fatigue, weakness, tension, jumpiness, sweating, aches and pains and physical discomforts. The person might also show low self-esteem, dependence, mental confusion, be easily provoked to tears, have difficulty sleeping, and need to be the centre of attention.

A high score on the somatic scale correlated with little use of emotional support, less acceptance, increased disengagement mentally and behaviourally, and increased focussing on the patient's own feelings and ventilating them (Vollrath Alnaes and Torgersen, 1994).

The fact that there was no significant difference between the two groups could indicate that the scale could be tapping into the genuine severity of the illness.

The Bipolar Manic (N) Scale was not found to significantly differentiate between the groups.

The clinical syndrome of bipolar manic is characterised by restlessness, over-activity, elevated moods, pressured speech, impulsivity and irritability. The person might be gregarious, attention-seeking, have intense affect and feelings of grandiosity. He/she can have erratic moods or behaviours, feel superior, be super sensitive to sounds and have a tendency to alcohol abuse (De Beer, 1995).

Compliance in general would probably be vulnerable to the patient's erratic moods, but it has not been found to be a significant factor in this study.

The Thought Disorder (SS) Scale was not found to significantly differentiate between the groups.

The thought disordered person has confusion and disorganisation of thought processes, and may have delusions or hallucinations which are unsystematised. He/she is suspicious, distrustful, isolated and is afraid of being used by others. He/she has physical and mental imbalance. The person has lowered self-esteem, the desire to hurt his/herself and others and feels unwanted and disliked. He/she has affectual constriction, ideas of reference, and rigid thinking. Despite the fact that one would think he/she was sub functional in his/her ability to

comply with treatment, the present study shows no significant difference on this scale. It could also be that due to the severity of the trait on a psychiatric level the oncology patients in general scored very low on this trait.

The Delusional Disorder (PP) Scale was not found to significantly differentiate between the groups.

The delusional disorder signifies a person who has irrational ideas, specifically persecutory and/or grandiose. He/she has feelings of superiority and fears of being used by others He/she can be moralistic, believing that an unknown entity is capable of interfering with his/her life. He/she feels emotionally detached, is rigid, confused and somewhat perfectionistic (Choca et. al., 1992).

It is likely that the oncology patients would have scored minimally on this trait, as it indicates severe psychiatric disturbance. However on its own, it could possibly cause severe non-compliance due to the confusion of the patient and the inability, often, to distinguish reality from fantasy.

11.1.4 Scales included in the discriminant analysis

11.1.4.1 The discriminant model. The interaction and combination of the schizotypal and the debasement scores

The combination of the debasement and the schizotypal scales proved to be the most significant and reliable discriminating factor between the non-compliant and compliant group

At this point it must be made clear that to be predicted as non compliant on the discriminant model, it is not the actual significantly high scales of the traits of schizotypal and debasement but rather the interaction between the two scores and its combination.

Although high scores inevitably predict non-compliance on this model, the patient might come up as non compliant with scores that are only moderately high on each or both of these traits.

This was made clear when the predictive model was put into Excel format where the scores for schizotypal and debasement for one individual could be recorded and the equations from the model would be automatically applied and the record highlighted as compliant or non-compliant.

As has been noted it is the non compliant scores that are predictive at the 74.73% level and the non-compliant scores are not seen as predictive.

The discriminant model can be seen as the schizotypal scale modified and perhaps magnified by the debasement scale and all its aspects.

It is this combination that can predict non-compliance 74.73% of the time and it has to be looked at in combination.

As has been noted previously, this modifier scale taps an attempt to look bad and to exaggerate negative traits on the inventory. The most prominent items are about feeling physically and emotionally empty, having low self-esteem and becoming angry or tearful at little provocation. There may be feelings of being unwanted or disliked, tension and self-destructive feelings. There is also some guilt and depression and feeling uncomfortable around others (Choca et. al., 1992.)It could also indicate a cry for help, and there are indicators of erratic moods, a desire to hurt people, a suspicious attitude and some mental confusion. Again the non- compliant person is feeling extremely uncomfortable with him/herself and his/her efforts of finding comfort and relief are more geared to relieving the psychological and psychiatric symptoms, while often the physical aspects of the illness, and compliance find second place. It has also been pointed out previously that chemotherapy often makes the patient feel worse on both a psychological and a physical level and a patient struggling already to find ways of feeling better will tend to abandon treatment for this reason.

This scale, which has been found in combination with the schizotypal scale to be extremely important in distinguishing between the two groups of compliant and non-compliant oncology patients, seems to depict a general attitude of pessimism and negativity and an exaggerated awareness of emotional and psychological stress.

As described by Choca et. al.(1992), the schizotypal scale is a pathological combination of the schizoid and the avoidant personality styles. The Schizotypal individual has a fear of human contact, suspicion and mistrust of others, preference for a life of passive isolation and has very few real relationships. He/she has features of eccentricity, has peculiar habits, and mixes

fantasy with reality. He/she is anxious and apprehensive, has flattened affect, and often has depersonalisation, feelings of emptiness and ideas of reference.

The discriminant analysis model found the Schitzotypal trait to be part of the predictive model. To give further information on this particular trait, some of the studies are given here. This trait combined with that of Debasement makes a person significantly and predictively vulnerable to non-compliance.

Stanghellini (2000) talks about the "basic relational deficit" of the schizotype. McGlashan's (1987) results indicated that core symptoms for Schizotypal Personality Disorder included odd communication, suspiciousness, paranoid ideation, and social isolation.

Kirkhart (2000) describes Schizotypal thinking as a cognitive style associated with odd attributions and magical thinking. Heim (2002) writes about the aspect of schizotipy that has alternative beliefs and superstitiousness. Boyle (1998) talks about the Aberrant Perceptions and Beliefs, of the Schitypal trait dimension his research suggesting that delusional cognition is a major component of schizotypal personality. Chequers , Joseph and Diduca (1997)'s data also provide evidence that UFO-related beliefs are associated with higher schizotypy scores. This could lead to an actual preference for alternate rather than allopathic medicine, a flight into a less stressful kind of program of treatment. It would seem that this would go hand in hand with an acceptance of the 'more unusual'. In many instances, rejection of the more accepted form of treatment.

The schizotypal patient would be far more susceptible to alternative medicine (rather than complimentary) or Traditional African medicine. They would tend to be drawn towards the more unusual of these forms of medicine, relying more on magic than on science.

There are often distortions about medicines. There are doctor patient difficulties, because doctor and patient have two different realities.

Stone (1985) suggests that problems encountered with Schizotypal personality patients include eccentric social habits, anhedonia, hypersensitivity to criticism, humourlessness, misinterpretation of the moods and statements of others, and inability to fit in socially. These aspects, together with debasement would give a picture of a patient feeling misunderstood, misdiagnosed and generally uncared for, having to seek refuge in the open arms of some of the more unusual and more magical alternative therapists. As can be imagined, Rust (1992) found more schizotypal thinking among members of occult groups than controls.

Among other things, Bijttebier and Vertommen (1999) found an excess of avoidant coping strategies for patients diagnosed with schizotypal personality disorder. The patient might avoid anything unpleasant or potentially traumatic such as clinic visits. He she has a tendency to rely on his/her inner thoughts and feelings which might tell them it is not necessary to take the treatment or listen to the doctor. He/she would rather 'listen to his/her own body". These symptoms would be exaggerated and magnified by the combination with the debasement scale. Hueston, Werth and Mainous (1999) found that schizotypal personality disorders exhibited a lower health status overall (perhaps due to a tendency not to comply with medical

recommendations).

Berenbaum (1999) and Berenbaum, Valera and Kerns (2003)'s research links schizotypal traits to the experience of trauma and to post traumatic stress.

The schizotypal individual tends to see things in a 'different' way and to pay attention to the spiritual rather than the materialistic. He/she would probably not relate to scientific language, not to academic journals and the exclusivity of their journals and jargon and language. The person high on the debasement scale is moody and easily hurt and can become disillusioned quickly. Especially in South Africa, these are the people who would feel more comfortable with Traditional Medicine and Alternative medicine. It is important that these people have to be approached in a language they can understand and relate to and a caring, understanding attitude of the doctor.

11.2 The Dysfunctional Attitudes Scale

There were no significant differences found between the compliant
and non-compliant groups on the Dysfunctional Attitudes Scale, this held true on all aspects of the scale.

A closer analysis of the 'Approval Need' factor on this scale may shed light on these results. This describes a need for approval and support. This is very much a dependency trait, which,

in the MCMI did not distinguish between the compliant and non-compliant group. For compliance the person would need a lot of approval and support to be able to carry out the medical regimen. Without this it could be that the patient would not have the inspiration and motivation to do this. On the other hand, if friends or relatives encourage the patient to seek alternative medical treatment or influences him/her to "come off the medication as soon as possible, they might turn in that direction.

An analysis of the 'Tentativeness' factor on this scale suggests a concern about making mistakes, being criticized or taking risks. The patient, again, could comply or not comply depending on how much he/she had absorbed or how much he/she believed that the medical regimen was a correct one for him/her. The tentative person could possibly have problems with delay in seeking treatment as he/she would want to make sure that this was appropriate and necessary.

An analysis of 'Anaclitic self esteem' factor on this scale shows the characteristics of an individual who leans on others for love, approval and happiness. Again it would depend on how much approval and love the patient was getting and whether it was sufficient to support him/her through the traumatic aspects of the cancer treatment. This relates very much to the dependency trait of the MCMI.

The trait of 'External Self Esteem' describes an individual who perceives his self-esteem as being dependent on judgement made by others. It could be possible that the person relies very much on the opinion and guidance and acceptance of others regarding cancer treatment and

compliance or non compliance again may reflect the bias and opinion of significant others.

The 'General Self Esteem' score is a score incorporating the other scores.

Although these results appear to conflict with the results of the MCMI, it is perhaps the case that the MCMI is more sensitive to the covert aspects of low self esteem. The scale also deals with cognitive distortions and irrational thoughts which are obviously the same in both compliant and non compliant cancer patients with a good prognosis. Another factor is that the categories relate very much to the dependency trait (need for approval, support, validation from the environment) and this factor did not significantly differentiate the two groups in the MCMI II. In addition, both groups of patients did not differ on general levels of self esteem, need for approval and support.

11.3 Beck Hopelessness Scale (BHS)

There were no significant differences found between the Compliant and the Non-Compliant Groups on the Beck Hopelessness Scale in this study.

Beck and Weissman (1974) quotes a person's hopelessness as being able to be objectified by defining it in terms of a system of negative expectancies concerning himself and his future life, as suggested by Stotland E. (1968) “The Psychology of Hope San Francisco Jossey-

Bass".

In this present study, dealing with cancer patients, who all had many uncertainties about the future due to the life threatening nature of their illness, the essential meaning of the concept of hopelessness would be expected to be different to that of the suicidal patient. Even the questions such as "The future seems vague and uncertain to me" or "I cannot imagine what my life would look like in ten years", or in fact, among other things, any question really relating to the future is seen in a completely different light by the cancer patient than, as compared to the suicidal physically well patient. It was felt, therefore, that the more authentic scores would be attained if the two groups (compliant and non-compliant) would be compared to one another rather than to the psychiatric group, as is done in the Kruskal Wallis test. Cancer patients would answer differently to psychiatric patients and the whole concept of the future would be essentially different in a life threatening illness. This is despite the fact that these cancer patients had a good prognosis. They were thus compared to one another as they were all suffering from potentially fatal disease and could in no way be compared to suicidal patients. The original normative sample for the BHS had consisted of 294 psychiatric inpatients who had made recent suicide attempts (CPS Testing Library, 2004).

Kalichman and Rompa (2003) found that people who were currently taking antiretroviral medications and missed at least one dose of their medications in the past week scored significantly higher on a hopelessness scale and reported more current use of marijuana, thus finding a link between hopelessness and non-compliance. This is in contrast o the current findings.

Nevertheless, no significant differences can be found between the compliant and non-compliant groups on this scale. It is suggested that the context of the actual questionnaire and the accent on not being able to look forward to the future and the awareness of a dark and often terrifying future that is levelled out at a very basic level in the cancer patient whether he/she is compliant or non-compliant. There is a strong awareness that there might not, in fact, be a future which permeates the thinking of these patients.

Whatever the stage, cancer patients score higher on the helplessness scale. Gil and Gilbar (2001) found that in using this scale with cancer patients, the phase of the illness had no effect on hopelessness. They also found that the older the patient, the less was his or her feeling of hopelessness. Similarly, Gilbar and Eden (2000) found on the Beck Hopelessness Scale that newly diagnosed cancer patients have more symptoms of hopelessness.

Though it would be expected there would be a difference this could be due to the general overwhelming sense of hopelessness which encapsulates the cancer patient.

11. 4 Life Change Stress Index

The results from this questionnaire did not distinguish between the two groups. Both groups of patients had experienced loss of health, serious illness, loss of employment as part of the cancer process. As mentioned previously, this questionnaire was given to access additional information about the patient.

11.5 Buss-Durkee Scale of Aggression

RESULTS:

The results did not show any significant factors between the compliant and the non-compliant group on the Buss-Durkee Scale of Aggression. This was true of all aspects of the test:

1) ASSAULT: Physical violence against others. This includes getting into fights with others but not destroying objects. As in the aggressive-sadistic scale of the MCMI-11, there was no significant difference on this scale between the compliant and non-compliant group.

2) INDIRECT AGGRESSION: Both roundabout and undirected aggression. Roundabout behaviour like malicious gossip or practical jokes is indirect in the sense that the hated person is not attacked directly but by devious means. Undirected aggression such as temper tantrums and slamming doors, consists
of a discharge of negative affect against no one in particular. There was no difference in score between the two groups.

3) IRRITABILITY: A readiness to explode at the slightest provocation. This includes quick temper, grouchiness, exasperation and rudeness. There was no difference in score between the two groups. Possibly both groups experience irritability due to the stress of treatment but it is not a factor in compliance.

4) NEGATIVISM: Oppositional behaviour, usually directed against authority. This involves a refusal to cooperate that may vary from passive non-compliance to open rebellion against rules and convention. It would have been expected that this scale would be raised in the non compliant patient as it was in the MCMI-11. Also they very definition of this scale includes non compliance. However, there was no significant difference between the compliant and non-compliant groups.

This result is different to the MCMI 11 where the passive-aggressive scale was found to be significant at the 5% level. Again it seems that the MCMI is tapping personality factors on a more covert level.

5) RESENTMENT: Jealousy and hatred of others. This refers to a feeling of anger at the world over real or imagined mistreatment. There was no difference on this scale between the two groups, and it is possible that in general this scale would be raised in cancer patients.

6) SUSPICION: Projection of hostility onto others. This varies from merely being distrustful and wary of people to beliefs that others are being derogatory or are planning harm. As in the paranoid scale of the MCMI-11, there was no difference in score between the compliant and non-compliant groups.

7) VERBAL AGGRESSION: Negative affect expressed in both the style and content of speech. Style indicates arguing, shouting and screaming. Content includes threats, curses, and being over-critical. As in the aggressive-sadistic scale of the MCMI-II, there was no

significant difference on this scale between the compliant and non-compliant group.

A GUILT category was added because of interest in observing the inhibiting influence of guilt to the expression of behaviours that are often inhibited. Guilt was defined in terms of feelings of being bad , having done wrong and suffering pangs of conscience. There were no significant differences between the scores on the two groups. This is unexpected as although there is no actual guilt scale on the MCMI II, one would have expected it to link to some of the significant scores such as debasement.

In general, these scores did not distinguish between the compliant and non-compliant groups. The fact that no significant differences were found on any of these scales could be due to the more direct nature of the questionnaire and the fact that, even by its title, it is very clear that it is a scale that taps various forms of aggression. It also taps various aspects of aggressive thought and behaviour, in many ways, these seem to have little overlap with the MCMI traits.

Negativism and indirect aggression possibly has links with the passive aggressive scale of the MCMI which was significant at the 5% level.

However, suspicion would be, to a degree, be linked to the paranoid scale on the MCMI which did not significantly distinguish between the compliant and non-compliant groups.

Verbal aggression and assault could be linked to the aggressive sadistic scale which was not found to be significant in this research.

It is possibly the different type of questions and the fact that they were on a more direct level that might have influenced these results.

11.6 The Rotter Internal-external Locus of Control

In the results from this scale no significant differences were found between the two groups.

Locus of control

Jaspars, King and Pendleton (1983) defines the concept of locus of control as, an attempt to characterise individuals in terms of the extent to which they believe they control events. Someone with an 'external' locus of control tends to be fatalistic, believing events to be determined by external forces such as chance and feeling powerless to influence those events. The person with the internal locus of control believes that events are within his personal control. Many researchers have felt that the concept has a place of importance in the study of compliance and non compliance with medical treatment (Harrison, 1992, Becker, 1985).

The internal-external construct is very similar in structure to the health belief model in its approach to predicting decision-making. In the Rotter (1966) conceptualization, an individual will undertake goal-directed behaviour only if he or she values the particular reinforcers available and if he or she believes that the action(s) will lead to these reinforcers in a particular situation. For example, a person would be expected to seek information about a

particular health threatening condition if the person both values the outcome (health) and believes that the behaviour will influence the outcome.

The general trend in research seems to be that non-compliance to a greater or lesser degree is associated with locus of control attributed to powerful others. Kiley, Lam and Pollak (1993) found this in a study of treatment compliance following kidney transplantation. Steel, Jones, Adcock, Clancy, Bridgford-West and Austin (2000) investigated predictors of dropout from cognitive-behaviour therapy for 32 patients with bulimia nervosa. Non-completers were found to have elevated levels of external locus of control.

However it was also found that internal locus of control was a predictor of non- compliance. Barlow, Macey and Struthers (1993) found this in relation to ankylosing spondylitis patients. Chen, Neufeld, Feely and Skinner (1999) found this compliance with home exercise programs.

Tillotson and Smith (1996) did research with diabetics and found that an internal locus of control predicted adherence to a weight-control regimen. Reynaert et.al. (1995)'s work with diabetic patients and metabolic control indicated that "internals" exhibited better metabolic control than "externals". He also found that the benefits of internality as regards metabolic control were not as great when this internality was extreme.

The Rotter Internal External Locus of Control test did not significantly differentiate between the compliant and non compliant oncology patient. This could possibly be because both

internal and external locus of control could influence compliance.

11.7 Conclusion to Phase 1

In an overview of patient compliance Morris and Schulz (1992) point out that after decades of compliance research, very little consistent information is available, except that people do not take their medications as prescribed. They feel that the methodological rigour of compliance studies may partially contribute to this situation. Methodological flaws have included design features and study execution. In addition, researchers have proceeded with studies without regard to a theoretical framework. Many have argued that much of the existing compliance literature also lacks conceptual rigour. They point out that although we know that people do not take their medications consistently, we do not know specifically why they have done so. One reason for this lack of understanding, they feel, is that compliance research has been dominated by the perspective of the health professional. To better understand medication-taking behaviour, researchers need to examine the patient's perspective. Consequently, future research needs to investigate a patient's decision-making process and the reasons for those decisions. In an article published in the following year, Morris and Schulz (1993) looked at this and noted that patients use a variety of criteria to determine the value of medication, placing equal or greater value on personal and often competing non-clinical outcomes. In general, the reasons for non-compliance are complex, multi-factional and variable according to illness and context.

The present study has examined and demonstrated the role of personality traits in medical compliance. The MCMI factors of Schitzotypal and Debasement were shown to be able to predicatively discriminate between potentially compliant and non compliant patients. This discriminant model can thus be an effective screening tool to be able to predict potentially non compliant patients.

Recent research (Shemesh, Lurie, Stuber, Emre, Patel, Vohra, Aomonda and Shneider, 2000; Shemesh, Rudnick, Kaluski, Milovanou, Salah, Alon, Dinur, Blatt, Metzkor, Golik, Verd and Cotter, 2001) has pointed compliance research in a new direction, that of medical post traumatic stress and Phase 2 of this present study carries this further into a pilot study to suggest an intervention.

The research of Shemesh et. al. (2000; 2001) has been able to find definite links between medical non-compliance and PTSD. The researchers found significant results in their study on post-traumatic stress symptoms and non adherence in survivors of both of myocardial infarction and children and adolescents who had had liver transplants. They suggested that treatment of PTSD may prove to be a useful approach for improving adherence and they give examples as to how they treated the developing symptoms of PTSD in these patients. However, this would be very much a treatment which would be in response to the actual symptoms of PTSD, and the possibility emerged for the intervention to be used in this present study to be more on a preventative level.

Because of the need to work out a significant intervention, if possible relating to this novel

concept of PTSD and non- compliance, there is a focus on specifically looking for similarities to the research on PTSD and the MCMI.

11.8 PTSD and the MCMI

The aspects of PTSD significant in various studies in relation to the MCMI are brought out in relation to each factor as follows:

The Disclosure Scale (X) was significant at the 5% level in the current study.

Craig and Olson (1997) found that drug abusers with PTSD had significantly higher scores on this Modifier Index when compared to drug abusers without PTSD. Munley, Bains, Bloem, Busby and Pendziszewski (1995) found somewhat higher mean scores on a group of PTSD Vietnam veterans.

The Debasement Scale (Z) was significant at the 5% level in this study. It was also one of the factors brought out to be used in the predictive model in the discriminant analysis.
Drug abusers with PTSD had significantly higher scores on this Modifier Index (Craig and Olson, 1997). Munley et. al. (1995) found somewhat higher mean scores on a group of PTSD Vietnam veterans.

The Avoidant Personality Trait (2) was found to be significant at the 5% level in this study.

In general avoidance has been found by several researchers to be significant or raised in studies of people suffering from PTSD, avoidance being one of the factors in PTSD.

Hyer, Davis, Albrecht, Boudewyns and Woods, (1994), Hyer, Woods, Boudewyns and Harrison,(1990), Munley et. al. (1995), and Robert, Ryan, McEntyre, McFarland, Lips and Rosenberg (1985) found avoidance to be a significant factor in combat-related PTSD in Vietnam war veterans.

Hyer, Woods and Boudewyns (1991) suggested that the traumatic personality in Vietnam war veterans diagnosed with PTSD would consist of a combination of avoidant and passive-aggressive scales of the MCMI.

In Vietnam veterans in an inpatient treatment program, 70% had their second highest score on the Avoidant scale (Sherwood, Funari, & Piekarski, 1990). McCormick, Taber & Kreudelbach (1989) found the avoidance trait to be clinically elevated in gamblers with PTSD. Craig and Olson, (1997) found that drug abusers with PTSD had significantly higher scores on avoidance.

Pope's (1998) study examined the long-term sequelae of childhood sexual abuse in women, using the MCMI-III. Results showed a significantly greater number of abuse survivors than comparison group had scores above 75 for the MCMI-III avoidance scale.

The Passive-Aggressive Scale (8A) was found to be significant at the 5% level.

Concerning the passive-aggressive trait and PTSD: Hyer et.al. (1991) in a study of Vietnam war veterans diagnosed with PTSD, saw the combination of the avoidant and the passive-aggressive traits as constituting the traumatic personality. Several studies of PTSD and Vietnam veterans diagnosed with PTSD and the MCMI have found the passive aggressive scale to be significantly elevated in this patient group (Munley et. al., 1995; Hyer et.al.(1990); Hyer,et.al (1994); Robert et. al., 1985; Sherwood, Funari, & Piekarski, 1990).

Craig and Olson, (1997) found that drug abusers with PTSD had significantly higher scores on this trait. In Pope's (1998) study examining the long-term sequelae of childhood sexual abuse in women, this scale was found to be significantly higher for the sexual abuse survivors group.

The Self-Defeating Scale (8B) was significant at the 5% level in the current study.

Drug abusers with PTSD (Craig and Olson, 1997); and childhood sexual abuse female victims (Pope, 1998), had significantly higher scores on this trait. Munley et. al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

The Schizotypal (S) trait was found in this present study to be significant at the 5% level. It was also one of the factors used in the predictive model for the discriminant analysis.

Bayon et al. (1996) in discussing Millon's theory of personality and psychopathology noted that the Borderline, Paranoid, and Schizotypal scales have been described as the more severe

patterns of personality pathology, which he suggested only develop under the pressure of persistent and unrelieved adversity. In other words this could point to a reaction to persistent and unrelieved early trauma.

A great deal of work has been done by Berenbaum (1999) and Berenbaum et.al (2003) on Schizotypal symptoms and trauma. They found that those individuals who had experienced trauma, especially childhood mistreatment, had higher levels of peculiarity and schizotypal symptoms than those who did not. In their years of research they have found that psychological trauma leads to elevated levels of peculiarity. They suggest that there is a strong connection between experience of trauma and schizotypy.

Berenbaum (1999) points to the work of Cardina and Spiegel (1993) who had documented that, at least among young adults, the experience of trauma (including traumas that the adults themselves could not have contributed to, such as earthquakes) can contribute to peculiar perceptions, beliefs and experiences.

"Although it seems clear that levels of dissociation often increase following trauma, we do not yet know which, if any, other facets of peculiarity are sequelae of trauma. In particular, we do not yet know whether these facets of peculiarity measured by instruments designed to measure "psychosis proneness" and "schizotypy" are associated with a history of trauma" (Berenbaum, 1999, p. 4).

"Thus it will be important for future research to examine a broader variety of traumatic events

than were examined in this study. This is the first study to test the hypothesis that childhood maltreatment and other forms of trauma contribute to peculiarity as measured by instruments typically considered measures of schizotypy and psychosis proneness"(Berenbaum, 1999, p. 14).

In their 2003 study, a sample of 75 women was recruited from the community, Berenbaum and his colleagues (2003), measured trauma/maltreatment history and symptoms of schizotypal personality disorder. As hypothesized, individuals with histories of trauma/maltreatment had elevated levels of schizotypal symptoms.

In their (Berenbaum et. al., 2003, p. 6) results they conclude: "As predicted, individuals who had been victims of at least one traumatic incident had higher levels of schizotypal symptoms than did individuals who had never experienced a traumatic event."

In an earlier study Berenbaum (1999, p. 11) reports: "This is the first study, however, to demonstrate that a reported history of trauma is associated with elevated scored on a well-validated measure of "psychosis proneness" or "schizotypy".

"Although we may not yet know how strong the association in the general population is between trauma/maltreatment and peculiarity, the results of the present study raise the possibility that the association may be rather strong. We found that those individuals who had experienced trauma, especially childhood trauma, had higher levels of peculiarity and schizotypal symptoms than did those individuals who did not experience trauma."(Berenbaum

et. al., 2003, p. 12)

Robert et. al. (1985) found this scale to be elevated in Vietnam veterans diagnosed with PTSD.

Craig and Olson, (1997) found that drug abusers with PTSD had significantly higher scores on this trait. Munley et.al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

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The Anxiety (A) Scale was found to be significant at the 5% level in the present study. With reference to PTSD in this trait of the MCMI:

The trait of anxiety was found to be elevated in veterans with a diagnosis of Post-traumatic Stress Disorder (Munley et. al., 1995; Sherwood, Funari, & Piekarski, 1990; Robert et. al., 1985). The trait of anxiety was elevated in gamblers with PTSD (McCormick, Taber & Kreudelbach, 1989); and drug abusers with PTSD (Craig and Olson, 1997). Using the MCMI-III, Pope (1998) found this scale to be significantly higher for a sexual abuse survivors group.

The Dysthymia (D) Scale was found to be significant at the 5% level in the present study.

This trait has been found to be significant in studies on PTSD and the MCMI.

In Pope's (1998) study of the long-term sequelae of childhood sexual abuse in women, the

dysthymia scale was found to be significantly higher for the sexual abuse survivors group. This was found in drug abusers and also gamblers with PTSD (Craig and Olson, 1997 and McCormick, Taber & Kreudelbach, 1989). In Vietnam veterans with a diagnosis of PTSD the dysthymia scale was significantly elevated (Robert et. al., 1985; Munley et. al., 1995).

The Alcohol Dependence (B) Scale was found to be significant at the 5% level in the present study.

In connection with PTSD, this scale was elevated in gamblers with PTSD (McCormick, Taber & Kreudelbach, 1989), drug abusers with PTSD (Craig and Olson, 1997) and Vietnam veterans with PTSD (Sherwood, Funari, & Piekarski, 1990; Robert et. al., 1985). Munley et. al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

The Major Depression (CC) Scale was found to be significant at the 5% level in the present study.

With regard to the MCMI and this trait in PTSD, this scale was elevated in drug abusers with PTSD (Craig and Olson, 1997); sexual abuse survivors (Pope, 1998) and Vietnam veterans with PTSD (Sherwood, Funari, & Piekarski, 1990; Robert et. al., 1985). Munley et. al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

The Schizoid Personality Trait (1) was found in this present study to be significant at the 10%

level.

There has been a fairly strong connection between this trait and PTSD. Hyer et.al. (1991) performed a cluster analysis of 100 Vietnam veterans with PTSD which revealed four subtypes associated with the parent Passive-Aggressive/Avoidant code. Relevant here are the Passive-Aggressive/Avoidant code (the parent code), and the Passive-Aggressive/Avoidant/ Schizoid code.

Munley et. al. (1995) and Hyer et. al. (1994) studied Vietnam veterans with PTSD and found that the Schizoid was significantly raised in these subjects. Craig and Olson (1997) found that drug abusers with PTSD had significantly higher scores on this trait.

The Borderline (C) Scale was found to be significant at the 10% level.

The borderline trait has been strongly associated with PTSD, often with unremitting and constant traumatic stress over many years.

Bayon et al. (1996) in discussing Millon's theory of personality and psychopathology noted that the Borderline, Paranoid, and Schizotypal scales have been described as the more severe patterns of personality pathology, which he suggested only develop under the pressure of persistent and unrelieved adversity, which in other words could point to a reaction to persistent and unrelieved trauma.

de-Zulueta (1999) reviewed the research on borderline personality disorder and discussed the importance of attachment behaviour and post-traumatic stress disorder (PTSD) in the understanding of this disorder. It was pointed out that patients with borderline personality disorder often presented with so many symptoms of PTSD that many American psychiatrists were now seeing it was a variant of "complex PTSD". Thorpe,(1993) also discussed the possibility that borderline personality disorder was actually a post-traumatic stress disorder (PTSD) that is a direct result of chronically abusive formative relationships in the developing personality of a young child. Lonie (1993) discussed similarities between Borderline Personality Disorder (BPD) and posttraumatic stress disorder (PTSD) as defined by Mental Disorders-III-Revised (DSM-III-R) criteria. It was argued that the former might be considered an equivalent of the latter, with the difference that the trauma has either undergone repression or, having been suffered before the establishment of speech, has not been registered in verbal form.

Pope's (1998) study, using the MCMI-III, examined the long-term sequelae of childhood sexual abuse in women. The borderline scale was found to be significantly higher for the sexual abuse survivors group. Results showed a significantly greater number of abuse survivors than comparison group had B scores above 75 for the MCMI-III Borderline scale. Munley et. al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

Since the recognition of medical traumatic stress there have been several studies on children suffering from Post Traumatic Stress after severe medical procedures and illnesses, which in

many instances can be continuing and unremitting, e.g. Shemesh et. al. (2000) with liver transplants and Barakat, Kazak, Gallagher, Meeske and Stuber (2000); Erikson and Steiner (2000) and Kazak, Stuber, Barakat and Meeske (1996), with childhood cancers. The long-term effects could possibly be termed unremitting and unrelenting adversity and trauma.

On another level of the relationship of borderline traits to Post Traumatic Stress, several researches have found the borderline scale to be raised in patients being treated for post traumatic stress disorder, such as Vietnam veterans (Munley et. al.,1995; Hyer et. al., 1990; Sherwood, Funari and Piekarshi, 1990; Robert et. al., 1985;).

The Drug Dependence (7) Scale was, in this study, found to be significant at the 10% level.

This scale was heightened in gamblers with PTSD (McCormick, Taber & Kreudelbach, 1989) and Vietnam veterans with PTSD (Sherwood, Funari, & Piekarski, 1990 and Robert et. al., 1985). Munley et. al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

The Desirability Scale (Y) was not found to significantly differentiate between the groups in this study.

Craig and Olson (1997) found that drug abusers with PTSD had significantly lower scores on Desirability. Munley et. al. (1995) found significantly higher mean scores on a group of non-PTSD Vietnam veterans.

The Dependent Personality Trait (3) was found not to differentiate significantly between the two groups.

Hyer et.al. (1991) did a cluster analysis of 100 Vietnam veterans with PTSD which revealed four subtypes associated with the parent Passive-Aggressive/Avoidant code. These codes were Passive-Aggressive/Avoidant code (the parent code), Passive-Aggressive/Avoidant /Schizoid code, the Passive-Aggressive/Avoidant /Schizoid/Dependant code, and Passive-Aggressive/Avoidant /Schizoid/Antisocial/Aggressive code. In this study, therefore, the Dependant trait was an important factor in PTSD.

Craig and Olson (1997) found that drug abusers with PTSD had significantly higher scores on this trait.

The Histrionic Personality Trait (4) was not found to differentiate between the two groups in this study.

Hyer et.al. (1991) in their study of Vietnam veterans with PTSD suggest that some PTSD patients have histrionic features. Craig and Olson (1997) found that drug abusers with PTSD had significantly lower scores on the Histrionic scale. Munley et. al. (1995) found significantly higher mean scores on a group of non-PTSD Vietnam veterans.

The Narcissistic Personality Trait (5) was found not to significantly differ between the two groups.

Craig and Olson (1997) found that drug abusers with PTSD had significantly lower scores on the Narcissistic scale.

The Antisocial Personality Trait (6A) was not found to significantly differentiate between the two groups.

In a cluster analysis of 100 Vietnam veterans with PTSD, Hyer, et.al.(1991) found that their results suggested that some PTSD patients have antisocial features. Munley et. al. (1995) also found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

Craig and Olson, (1997), found that in drug abusers with PTSD there were no significant differences between groups on Antisocial traits.

The Aggressive/Sadistic Personality (6B) Trait was not found to significantly differentiate between the groups.

Craig and Olson (1997) in his study of drug abusers with PTSD found no significant differences between groups on the Aggressive/Sadistic trait. Munley et. al. (1995) found high mean scores on a group of PTSD and Vietnam veterans diagnosed with PTSD.

The Compulsive Personality Trait (7) was found not to significantly differentiate between the groups.

Craig and Olson (1997) in his study on drug abusers with PTSD found they had significantly lower scores on the Compulsive trait.

The Paranoid (P) Trait was not found to significantly differentiate between the two groups.

Craig and Olson (1997) found that drug abusers with PTSD had significantly higher scores on this trait.

The Somatoform (H) Trait was found not to significantly differentiate between the groups.

Robert et. al. (1985) in his study of Vietnam veterans with PTSD performed a stepwise discriminant analysis was performed to differentiate the groups on the 20 MCMI scales. One of the ten scales which entered the equation to differentiate the groups was the Somatoform scale.

Craig and Olson (1997) found that drug abusers with PTSD had significantly higher scores on this trait.

The Bipolar Manic (N) Scale was not found to significantly differentiate between the groups.

Craig and Olson (1997) in their study of drug abusers with PTSD found no significant differences between the groups on this trait.

The Thought Disorder (SS) Scale was not found to significantly differentiate between the groups.

According to Craig and Olson (1997) drug abusers with PTSD had significantly higher scores on this trait.

The Delusional Disorder (PP) Scale was not found to significantly differentiate between the groups.

Craig and Olson (1997) found that drug abusers with PTSD had significantly higher scores on this trait.

As these studies are used extensively in the discussion it is appropriate to list them here:

Some of the correlates of PTSD in the research on the MCMI have highlighted such things as Self Defeating, Avoidant and Anxiety and other factors to be important, aspects which were also found in this research to significantly differentiate at the 5% level, between compliant and non-complaint cancer patients.

In the literature comparing the factors found in the MCMI-I and MCMI-II on research on PTSD and the MCMI and it is immediately apparent that patients suffering from PTSD show almost an identical pattern of significant traits as those found to be significant in non-compliance.

Munley et. al. (1995) investigated the Millon Clinical Multiaxial Inventory-II (MCMI-II) profile characteristics of 39 veterans diagnosed with post-traumatic stress disorder (PTSD). A non-PTSD comparison group of 39 subjects were selected retrospectively from testing files. Results suggest a very similar MCMI-II and MCMI profile pattern for PTSD cases. The PTSD group scored higher on the avoidant, passive-aggressive, schizoid, borderline, and dysthymia scales. However the findings did not clearly distinguish the PTSD group from the non-PTSD group. It must be noted that all these scales were significant in the present study, and significantly differentiated compliant and non-compliant cancer patients.

Hyer et. al. (1990) administered the Millon Clinical Multiaxial Inventory (MCMI) and the Sixteen Personality Factor Questionnaire (16PF) to 60 Vietnam veterans with posttraumatic stress disorder (PTSD). Findings showed that the passive-aggressive and avoidant personality styles with schizoid and borderline features and symptoms of dysthymia and anxiety were characteristic of these subjects. Again each of these traits were found to differentiate compliant from non-compliant patients. As we continue the similarities are very notable.

Hyer et.al. (1991) studied 100 Vietnam war veterans with posttraumatic stress disorder (PTSD) who completed, among other tests, the Millon Clinical Multiaxial Inventory (MCMI). Passive-Aggressive and Avoidant were the traits from the MCMI found to contribute to the 'traumatic personality'. In the present study both passive-aggressive and avoidant traits were significant at the 5% level distinguishing between complaint and non-compliant cancer patients.

Male patients with combat-related PTSD generally have an MCMI Passive-Aggressive and Avoidant code-type or a Passive-Aggressive/Avoidant/Schizoid code-type (Hyer et. al., 1994) . All of these are significant to the non-compliant code-type. Other studies, which did not report actual scores, have found nearly identical results. For example, the Avoidant, Anxiety, Dysthymia, Alcohol abuse and Drug Abuse scales were clinically elevated among 17 Gamblers with PTSD (McCormick et.al., 1989). Former World War II German-held and Japanese-held POWS had MCMI elevations across all scales with the German-held POWS having an MCMI code similar to their Vietnam counterparts (Miller, Martin, & Shapiro, 1991). Among a total sample of 189 male Vietnam veterans in an inpatient treatment program, 78% had the highest score on Passive-Aggressive and 70% had their second highest score on Avoidant (Sherwood, Funari, & Piekarski, 1990). This personality style is characterised by passive-aggressive detached behaviours. Millon's passive-aggressive style is more properly called a negativistic style, characterised by erratic emotionality, petulant quarrelsomeness, and demanding behaviours. The ambivalence is expressed in personality as being disruptive and argumentative at one moment (e.g. the passive-aggressive component) and withdrawn and contrite at the next moment (e.g. the detached component). The DSM-IV's (American Psychiatric Association, 1994) Passive-Aggressive (Negativistic) personality disorder is closer to Millon's characterisation of this disorder. The elevations seen on the Borderline scale across studies reflects the quixotic emotionality seen in PTSD patients, further confirmed by elevated scores in the areas of Anxiety and Depression, with secondary elevations in substance abuse scales. The similarity between these scores and the scores distinguishing the non-compliant from the compliant patients are again very notable.

Also, a cluster analysis of 100 Vietnam veterans with PTSD revealed four subtypes associated with the parent Passive-Aggressive/Avoidant code. These codes were Passive-Aggressive/Avoidant code (the parent code), Passive-Aggressive/Avoidant /Schizoid code, the Passive-Aggressive/Avoidant /Schizoid/Dependant code, and Passive-Aggressive/Avoidant /Schizoid/Antisocial/Aggressive code, suggesting that some PTSD patients have histrionic or antisocial features to the personality (Hyer et.al. 1991). Though the 'parent code fits in completely with the non complaint patient, they were not found to be significant on antisocial, aggressive, histrionic or dependant traits.

Overall, the MCMI-I and MCMI-II appear to have provided a very accurate assessment of the known characteristics of many patients with combat-related PTSD, and the similarity with non-compliant patients appears to be obvious.

Drug abusers with PTSD had significantly higher scores on the Modifier Indices (eg: validity scales) of Disclosure and Debasement, on the personality disorder scales of Schizoid, Avoidant, Depressive, Dependent, Passive/Aggressive, Self-defeating, Schizotypal, Borderline, and Paranoia, and on the clinical syndrome scales of Anxiety, Somatoform, Dysthymic, PTSD, Thought Disorder, Major Depression, and Delusional Disorder. PTSD patients had significantly lower scores on the Desirability, Histrionic, Narcissistic and Compulsive scales. There were no significant differences between groups on Antisocial, Aggressive/Sadistic, Bipolar, Alcohol Dependence and Drug Dependence (Craig and Olson, 1997). Again there are strong similarities to the protocols of the non-compliant patients.

Much of the research on post-traumatic stress disorder (PTSD) during the last decade has addressed its existence and symptom composition. In the extant literature a handful of studies exist that has used the MCMI in the evaluation of combat-related PTSD. One personality profile emerges above all others. This is the passive-aggressive/avoidant code. This is a code or pattern that has definitely emerged in this study.

Robert et. al. (1985) compared with the MCMI profiles of 25 veterans with a diagnosis of Post-traumatic Stress Disorder (PTSD) with those of 25 veterans carrying psychiatric disorders which typically cause problems in the differential diagnosis of PTSD. The PTSD group had higher elevations on nine of the 20 MCMI scales (all significant at the 5% level). Profiles were also significantly different in shape and scatter. A discriminant analysis accounted for 100% of the variance and correctly classified 88% of the patients. Resulting MCMI profiles appear to be consistent with DSM-III (American Psychiatric Association, 1980) criteria for PTSD. Profiles were also significantly different in shape and scatter. The nine scales were the Avoidant, Negativistic (Passive Aggressive) .Borderline, Anxiety, Dysthymia, Alcohol Abuse and Drug Abuse. A discriminate analysis highlighted the Borderline, Schizoid, Dysthymia, and Schizotypal Scales. It must be noted that without exception, all these scales were significant with the non compliant patient in this study.

In this study Robert et. al. (1985) performed a stepwise discriminant analysis was performed to differentiate the groups on the 20 MCMI scales. Ten scales entered the equation to differentiate the groups. In relative order of their contribution to the discriminant function the scales were Borderline (C), Schizoid (I), Dysthymia (D), Schizotypal (S), Anxiety (A), Drug

Abuse (T), Dependent (3), Psychotic Depression (CC), Somatoform (H), and Psychotic Delusion (PP). This function accounted for 100% of the variance and correctly classified 88% of the subjects (92% of the PTSD subjects and 84% of the comparison subjects).

Pope's (1998) study examined the long-term sequelae of childhood sexual abuse in women. Using the MCMI-III, all nine of the scales examined were significantly higher for the sexual abuse group than for the comparison group. These scales were Avoidant, Depressive, Passive-aggressive, Self-defeating, Borderline, Anxiety disorder, Dysthymic disorder, Post-traumatic stress disorder, and Major depression. Elements of a 'traumatic personality typology' had been described using the Millon Inventories with Vietnam War veterans. Scores from sexual abuse survivors in this present study were examined and it was predicted that a greater number of abuse survivors than controls would have above 75 scores on that the Passive-Aggressive, Avoidant, and Borderline scales. Results showed a significantly greater number of abuse survivors than comparison group had scores above 75 for the MCMI-III scales Avoidant, Depressive, Borderline, and Anxiety scales.

It must be noted that the MCMI 2 used in this present study does not have a scale for PTSD which only emerged in the MCMI3. In 1992, Choca et. al. had noted that as helpful as the research data on the correlates of PTSD and the MCMI, there might be individuals with other diagnoses who fitted the same pattern of scale elevations. They note that the MMPI had reported similar problems in exclusively identifying PTSD. In the third version of the MCMI, however, there is a scale which identifies this, which would obviously be useful in further research on non-compliance.

Despite this it is obvious that there is sufficient evidence that many of the scales found significant with PTSD on the MCMI were also significant with the non-compliant patients tested for this research.

Throughout the literature and research on medical non compliance, certain factors have emerged as predictors and reasons for non compliance. These ranged from the very practical factors such as dosage, transport and side effects, to the more complex factors such as the doctor-patient relationship, the presence of psychopathology or the complex dynamics of 'inconvenience'.

As has been mentioned, perhaps the most groundbreaking, significant and meaningful study that has looked at non-compliance is that of Shemesh et. al. (2001). This research team found significant results in their study on posttraumatic stress symptoms and non adherence in survivors of myocardial infarction. In a previous article Shemesh et. al. (2000) detailed their successful interventions for non-compliance in children with liver transplants by treating their PTSD symptoms.

Only in the last two years, therefore, has this new factor emerged as a reason for non-compliance, that of medical Post Traumatic Stress (Shemesh et.al., 2000; Shemesh et. al., 2001).

It was not until 1980 that the term PTSD was officially introduced into the psychiatric classification system. The term PTSD provided a common language which has succeeded in

bringing together research in a wide range of fields under one, unifying, theoretical umbrella (Joseph et. al., 1997). Historically, combat, robbery, rape, and serious accidents have been included as traumatogenetic stressors. Only recently has life-threatening illness been considered as a traumatogenetic stressor by the American Psychiatric Association (Neel, 2000).

The diagnostic criteria for PTSD in the Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, revised (DSMIII-R; American Psychiatric Association 1987), specifically excluded patients with medical illnesses such as cancer and AIDS from the diagnosis of PTSD. These illnesses were not considered to be unusual enough or to be stressors of enough magnitude to produce the psychological aftermath of a traumatic experience. The diagnostic criteria for PTSD in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)(American Psychiatric Association 1994), however, reflect a shift in emphasis from the event itself to the psychological experience of the person who takes part in the event (e.g., being diagnosed with or surviving cancer). People with histories of cancer could now be considered to be at risk for PTSD.

"PTSD was initially characterized as an anxiety disorder that developed in response to a severe trauma in which an individual experienced, witnessed, or was confronted by actual or threatened death, injury, or loss of physical integrity of self or others. DSM-IV stipulated for the first time, that being "diagnosed with a life-threatening illness" or "learning that one's child" had such an illness was a qualifying stressful event. These events elicit responses of intense fear, helplessness, or horror and trigger three clusters of PTSD symptoms: re-

experience of the trauma (nightmares, flashbacks, and intrusive thoughts), persistent avoidance of reminders of the trauma (avoidance of situations, numbing of general responsiveness, and restricted range of affect), and persistent increased arousal (sleep difficulties, hypervigilance, and irritability). Other common emotional responses associated with such traumas are despair, guilt over actions taken or avoided, and consuming loss. Once established, PTSD symptoms are maintained through instrumental learning. That is, avoidant responses are reinforced because avoidance of the stimuli prevents unpleasant feelings and thoughts." (Cancernet Home Page, 2001)

Cancernet (2001) point out that the definition in the Diagnostic and Statistical Manual of Mental Disorder, 4th edition (DSM-IV; American Psychiatric Association 1994) indicates that while PTSD symptoms usually begin within the first 3 months after trauma, there may be a delay of months or even years before symptoms appear.

It is for this reason, that besides a general discussion of the MCMI results, there has been a particular focus on any connections with PTSD, both on a general level and in discussion of the particular traits of the MCMI. This was also necessary due to the fact that an intervention was to be chosen and used in Phase 2 of the Study and it had to be established that there is a possibility of a link between non-compliance and PTSD in the significant results of the study.

It has been shown in the discussion on the significant factors highlighted in the non-compliant group, and in the previous brief review, that there are strong similarities with he non-compliant 'profile' and that found with patients diagnosed with PTSD, especially with Vietnam

Veterans.

Other factors also emerge, such as the schizotypal potential tendency to go into the mystical and the esoteric and therefore alternative or traditional medicine. It has also been noted, however that the schizotypal personality has emerged due to severe and unremitting early trauma (Bayon et. al., 1996) and has been found to be a factor in studies on PTSD with Vietnam veterans (Robert et.al., 1985), and the recent work of Berenbaum (1999) and Berenbaum et.al.; 2003) in showing a strong connection between schizotypy and PTSD.

A very significant factor was that of major depression and it is stressed that when this is diagnosed in the cancer patient it has to be psychiatrically treated as a matter of urgency.

It must be noted at this point that although there is a great deal of overlapping and similarity between the PTSD patient's profile and the non-compliant patient's profile on the MCMI-II, this is in no way conclusively established. However, due to the fact that PTSD is emerging as a strong factor in non compliance, and the study links through the MCMI-11, there is sufficient reason to do a pilot study of a trauma debriefing intervention for phase 2.