Dhat Syndrome: Physical and Psychological Implications

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CERIFICATE

It is hereby certified that thesis based on the results of empirical work carried out by NASHI KHAN and that it has not been previously presented for PhD Degree. NASHI KHAN has done her research work under our supervision. She has fulfilled all the requirements and is qualified to submit the accompanying thesis for the degree of PhD in Behavioral Sciences (Clinical Psychology).

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LIST OF ABBREVIATIONS

α	Alpha; Cronbach's Index of Internal Consistency
ANOVA	Analysis of Variance
APA	American Psychiatric Association
BSI	Bradford Somatic Inventory
BYS	Bharatiya Yoga Sansthan
CBSs	Culture Bound Syndromes
CBC	Culture Bound Condition
df	Degree of Freedom
DSM	Diagnostic and Statistical Manual for Mental Disorders
DSSC	Dhat Syndrome Symptom Checklist
DSIS	Dhat Syndrome Interview Schedule
f	Frequency
GHQ	General Health Questionnaire
ICD	International Classification of Disorders
M	Mean
MONOVA	Multivariate Analysis of Variance
MS	Mean Square
n	Number in Sub Sample
N	Total No. in a Sample
P	Percentage
R	Multiple Correlation
R^2	Multiple Correlation Squared;
SD	Standard Deviation
SKAQ	Sex Knowledge and Attitude Questionnaire
SS	Sum of Square
Δ	Increment of Change
WHO	World Health Organization

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ABSTRACT

Dhat Syndrome is commonly reported in the Indian sub continent. Previous researches conduced in India and Sri Lanka has employed clinical observations and informal assessment procedures and no formal assessment tool has yet been developed to examine manifestation of Dhat Syndrome. Main objectives of the present research were to develop Dhat Syndrome Symptom Checklist (DSSC) and to examine manifestation and implications of Dhat Syndrome. A series of studies were carried out to develop DSSC and examine manifestation and implications of Dhat Syndrome.

Dhat Syndrome Symptom Checklist (DSSC) was developed through in-depth interviews of health professionals, patients with Dhat Syndrome as well as in consultation with existing literature. Psychometric properties of DSSC were estimated using Inter rater Congruence, Factor Analysis and Reliability Analysis. A final DSSC comprised of 62 symptoms with three subscales i.e. Physical, Psychological and Sexual symptoms (Studies 2 -6).

Main study aimed to examine manifestation and implications of Dhat Syndrome. It was hypothesized that patients with Dhat Syndrome would manifest variety of Physical Psychological and Sexual symptoms. Patients with Dhat Syndrome (N = 318) were recruited from private practice of health professionals. Semi Structured Interview Schedule, DSSC and General Health Questionnaire (GHQ-28) were used for assessment and individual assessment of patients was carried out.

Data was analyzed using descriptive and inferential statistics. Descriptive statistics indicated that majority of the patients were consulting Hakims and Homeopaths and typical profile of Dhat Syndrome patient in Pakistan is a young, single, less educated man with poor socioeconomic status. Dhat Syndrome had

adverse implications for patients' health, particularly physical and sexual health, and marital life. Premature ejaculation and nocturnal emissions were main reasons for referral, whereas masturbation and exposure to pornographic material was reported as major causes of Dhat Syndrome.

Inferential statistics revealed that sexual weakness, education, discharge before urine, perceived implications of Dhat Syndrome on physical and sexual health, severity of the problem, lack of information and diet were significant predictors of "Physical Symptoms". Sexual weakness, perceived implications of Dhat Syndrome on patient's life, lack of information and "emission" emerged as significant predictors of "Psychological Symptoms". Sexual weakness, perceived implications of Dhat Syndrome on health, "emission" and age were significant predictors of "Sexual Symptoms".

Most patients fell above caseness scores on somatic complaints and anxiety. Somatic complaints were experienced the most and depression the least. There was positive relationship between somatic complaints, anxiety, social dysfunctioning, depression and DSSC symptoms. DSSC physical and sexual symptoms, perceived implications of semen loss for patients' life emerged as significant predictors of somatic complaints in patients. Anxiety in patients was predicted by DSSC physical and psychological symptoms, perceived implications of Dhat Syndrome for patients' life and "discharge before urine". DSSC sexual, psychological and physical symptoms, perceived psychological effects of Dhat Syndrome, lack of information about sex and "nocturnal emission" predicted depression in patients. DSSC psychological and physical symptoms emerged as significant predictors of social dysfunctioning in patients.

Sex is a tabooed area in Pakistan and this is the first systematic study on Dhat Syndrome in Pakistan. DSSC would be a useful tool for diagnosticians, clinicians and researchers. Findings of the study have very important implications for the patients, health professionals and researchers and warrant the need for counselling services as well as sex education. Moreover, further investigations on sexual health in general and Dhat Syndrome in particular are also recommended.

KEY WORDS: Dhat Syndrome, Dhat Syndrome Symptom Checklist, Manifestation, Implications, Hakims, Homeopaths, General Health Questionnaire, Somatic Complaints, Anxiety, Depression, Social Dysfunctioning, Emissions, Discharge before Urine, Nocturnal Emissions.

CHAPTER 1

INTRODUCTION

Culture comprises of values and different behavior patterns as well as ideas which are considered in the context of historical backgrounds. It also consists of beliefs, values, norms and myths which are the components of a specific geographic area and are also shared by people in that particular area (Gudy Kunst; Leff, 1973; Tiny-Tomy, & Chua, 1988). According to Tiwari and associates (Tiwari, Katiyar, & Sethi, 1986), "culture is a ground substance, in which psychological, sociological and biological forces operate and influence the mental processes as well". Cultural influences do affect mode of communication of individuals and these communication patters are considered important in diagnosing mental illness, particularly when and where objective tools are not available (Baasher, 1963; Gudy Kunst, Tiny-Tomy, & Chua, 1988).

Cultural context has been emphasized by the mental health professionals who have attempted to differentiate between the essential pathogenic determinants of a mental disorder from the ones which are because of individual and cultural variations (Kapur, 1987; Kleinman, 1988; Weiss, & Kleinman , 1988; Weiss, 1986; Weiss, Ranguram, & Channabasavanna, 1995; Wen, 1998). For instance, in Western cultures, somatization reflects a constant mind body interaction and has been alternatively referred to as mind body dualism. Kirmayer and associates (Kirmayer, 1984, 1989; Kirmayer, & Young, 1998) emphasized on cultural influences and argued that though medical conditions are physical, but they can cause mental disturbance due to an interaction of physical nature of condition and problem in coping with the illness. Somatic disorders therefore are considered as an interaction between soma and

psyche. In many parts of the world, particularly in North America where people come from various ethno cultural backgrounds, there are combination of somatic and psychological symptoms and indigenous categorization, labeling and diagnosis is given accordingly (Barsky, & Borus, 1999; Barsky, & Klerman, 1983).

Cross cultural research in mental disorders has focused on culture specific disorders. It is also argued that basic psychopathology is universal and cross cultural differences only come from culture specific illness behaviors (Cheng, 2001; Edwards, 1976, 1983; Lehman, 1975). In this context person's perception also needs to be considered. For mental health professionals it is important to differentiate between subjective complaints and symptom manifestation. Subjective complaint is an illness behavior in which perception, interpretation and reaction of an individual about the problem is considered, whereas symptom manifestation is the professional judgment on the patient's condition reached through clinical observation and interview (Andrew, & Cheng, 2001; Bhugra, 1992, 993; Cheng, 1989).

Differentiation of subjective complaints and symptom manifestation has impact on cross cultural studies and it becomes more evident in the case of somatization. In non-western patients, somatization is reported to be a feature of depression (WHO, 1992). On the other hand, Kirmayer and associates (1984, 1991, 1994; Kirmayer, Smith, & Dao, 1998) argue that somatization is a universal phenomenon and found around the world. However, due to limited knowledge of psychological disorder, people in the third world countries perceive illness as physical in origin and hence complain of somatic symptoms more than their counterparts in the western countries (Kirmayer, Young, & Robbins, 1994).

In most of the cultures, syndromes and conditions represented in somatic form are considered as somatization e.g. Bilis, Hwa-byung, Brain - Fag, Dhat, Skenkui,

Falling out, Koro, Shen Kui, Shenjing, Neuroasthenia and Latah are to list a few (Akhtar, 1988; Cheng, 1996; Dewarja, & Sasaki, 1991b; Haslam, 1980; Murphy, 1976; Prince, 1960, 1987, 1992; Prince, & Tecneng- Laroche, 1987; Simons, 1987; Simons, & Hughes, 1993; Yap, 1952, 1964, 1965). In some conditions, somatic syndromes are co-morbid with emotional and psychosocial stresses. For example, Hwa–byung, is a condition characterized by somatic manifestation of suppressed anger or rage, and is prevalent among married Korean immigrants to the US, from lower socio economic class. Similarly, "*Brain Fag"* is a syndrome characterized by the sensation of heaviness or heat in head and co-occurs with depression, anxiety and adjustment disorders. It is commonly found in students who are the first ones in their families to be educated and are separated from their families and community of origin (Prince, 1960; Prince, & Techneng-Laroche, 1987).

Culture related syndromes demonstrate the role of ethno physiological beliefs and ideas about body in the causation of somatic complaints (Baasher, 1963; Barsky, & Borus, 1983; Helman, 1990; Kirmayer, 1984, 1991, 2001; Lipowsky, 1988). Despite being manifested in different cultures and having strong relationship with emotional problems, these syndromes are not considered in traditional psychiatry (Arieti, & Meth, 1959; Helman, 1990; Lehman, 1975; Meth, 1974). Similarly, sexuality and sexual expressions also get influenced by the culture (Alexander, 2006; Bhatia, 1996; Bhugra, & Crodle, 1989; Kulhara, & Avasthi, 1995).

In each society, sickness, accidents and anxiety bother human beings and are expressed in a particular way which is in line with their beliefs, value systems and culture (Hughes, & Wintrob, 1995; Jadhav, 1999; Kleinman, 1977; Kleinman, & Good, 1985; Obeyesekere, 1985; Pelto, & Pelto, 1997; Tiwari, Katiyar, & Sethi, 1986; Wintrob, 1996). Bodily complaints can be understood as encoding cultural

model of sickness or idioms of distress (Nichter, 1981b). Such cultural models supply people "vocabulary" of symptoms and provide explanations of the symptoms and sufferings. Somatic idioms of distress are commonly present in "culture bound syndromes" which are a combination of somatic, emotional and social variables. For example, Good (1977) argued that "heat distress" among Iranian can be understood as a cultural manner of expressing personal and social concerns related to loss and grief. He further asserts that it is not only the manifestation of problem which differs across cultures, interventions also varies and local healer's offer interventions in the perspective of their own set of cultural influences.

1.1 Cultural Bound Syndromes (CBSs)

The term "Culture Bound Syndrome" was formally introduced by a Chinese psychiatrist, Yap (1951, 1967, 1969) more than five decades ago. Prior to Yap, various terminologies were used to explain such conditions. Terms such as psychogenic psychosis, ethnic psychosis / neurosis, atypical psychosis, cultural reactive syndromes (Hughes, 1985a, 1985b; 1996), transcultural psychiatry, cross cultural psychiatry (Bhugra, & Bhui, 1998; Helman, 1990; Leff, 1990a, 1990b, 1988; Lipsedge, & Littlewood, 1979; Murphy, 1977; Tseng, 1973; 2001; Tseng, & McDermott, 1981) and culturogenic stress were used to describe such syndromes (Helman, 1990). In western countries such conditions were considered as peculiar manifestations and were referred to as exotic psychotic syndromes (Arieti, & Meth, 1959; Meth, 1974). However, several such conditions were identified particularly in Western Europe and North America. For example Anorexia Nervosa is a condition which first appeared in daughters of the western bourgeoisie in the 19th century (Bromberg 1988, cited in Pfeiffer, 1994) and following through decades, it spread

among women of all socio economic classes (Hughes, 1985a; Toso, Salamero, & Martinez, 1994 cited in Hughes, 1985a).

Yap (1951) proposed that commonly used terms be replaced by a typical "culture bound", which was defined as "forms of psychopathology produced by certain systems of implicit value, social structures and obviously shared beliefs indigenous to certain areas". He considered these conditions to be the typical variants of western psychiatric syndrome. After Yap, serious consideration has been given to explain culture specific conditions.

Ever since then, different definitions of Culture Bound Syndrome have been offered. Littlewood and Lipsedge (1985) defined Culture Bound Syndrome as "episodic and dramatic reactions relating to a particular community. Culture Bound Syndromes (CBSs) are also defined as 'episodic and dramatic reactions" specific to a particular community – locally defined as discrete patterns of behavior. Culture Bound Syndromes (CBSs) are also taken as "a collection of signs and symptoms (excluding notion of cause) which are restricted to a limited number of cultures primarily by reason of certain psychosocial features" (Bhugra, & De Silva, 1996; Helman, 1990; Prince, & Tecneng-Laroche, 1987). Swartz (1985) described Culture Bound Syndromes (CBSs) as "a constellation of symptoms which have been categorized as a dysfunction or disease by a specific culture". Culture Bound Syndrome (CBSs) are perceived and interpreted as patterned, pathologically exaggerated behavioral responses to culturally structural stresses, vulnerabilities, conflicts and other socio cultural factors. They are considered as subset of cultural factors with strong historical background associated with illness and misfortune. Culture Bound Syndromes (CBSs) comprise a heterogeneous set of illness phenomenon and many such conditions have been referred to in the literature

(Hughes, 1985a, 1985b; Levine & Gan, 1995). The terms "Culture Related Syndrome" and "Culture Bound Condition" (CBC), Bhatia, 1999) have alternatively been referred to in the literature (Jilek, 2000) and it means that a syndrome is not directly linked to a particular culture but is related to certain cultural emphasis. These syndromes / conditions are reported as episodic and dramatic for a certain community.

Culture Bound Syndromes (CBSs) have been a matter of controversy among researchers. According to Westermeyer and Janca (1997), culture bound is not necessarily always bound but heavily related to specific cultural traits and cultural factors in different geographical areas. Culture Bound Syndromes (CBSs) are folk illnesses and may not be syndromes and that they may be local ways of explaining beliefs and illness labels used to explain varieties of troubles (Simons, & Hughes, 1993). For example, "*Saladera*" from Peruvian Amazon is the way to explain misfortunes such as bad luck. Sufferings in patients with "*Saladera*" show signs of anxiety, but this anxiety is because of the belief that they are struck with bad luck and are bewitched. However, some Culture Bound Syndromes (CBSs) are considered true culture bound, for example "*Latah*" in Malaysia and Indonesia is a condition in which people are repeatedly and repetitively startled by others and they become flustered when they startle. In this state they say things which in normal context are taken as obscene, irrelevant and they imitate others around them (Murphy, 1976).

In the West, Culture Bound Syndromes (CBSs) have been considered as unusual and exotic patterns of behavior which are found in certain cultures and affect only those who are distinctive from main stream of population such as ethnic minorities. These syndromes used to be considered rare and unclassifiable (Arieti, & Meth, 1959). They have reality and cultural validity only where they occur and are important in a specific cultural perspective, if not abnormality. In their own cultural

perspective, these illnesses are given importance and are treated in conventional ways. The word "bound" is restricted to the syndromes in certain cultures and is accepted with controversy. Labels like "atypical", "exotic" imply that these syndromes are deviant from standard diagnostic criteria, so becomes culture bound. This can also be inferred that they are not only exotic but also difficult to diagnose. In this context, Bhugra and Jacob (1997) argued that putting these syndromes in the Western diagnostic systems had undermined the significance of link between cultural beliefs, environmental stressors and symptoms.

Hughes (1985a, 1985b, 1996) drew attention towards such syndromes in the Western society. According to him, Culture Bound Syndromes (CBSs) consist of psychiatric disorders which are singled out as a unique disorder in a particular culture and are psychiatrics disorders which are present in a particular society and do not fall in classification of general psychiatric disorders in existing classification systems i.e. ICD-10 (WHO,1993) and DSM-IV (APA, 1994). In his view, difference between culture bound and non-culture bound syndromes should be explored. He proposed that type A behavior and Bulimia Nervosa to be taken as western Culture Bound Syndromes (CBSs). Moreover, several other conditions have been identified particularly in Western Europe and North America. For example, Anorexia Nervosa first appeared in daughters of the western bourgeoisie in the 19th century (Bromberg, 1988, cited in Pfeiffer, 1994). For a certain period of time, it remained common in teenager females in high societies of Western Europe and North America and subsequently it spread in women of all socio economic classes (Hughes, 1985a).

Hughes (1996) argued that in case of Culture Bound Syndromes (CBSs) standard diagnostic categories can not be implied as these classifications themselves are so culture specific that they precisely can not accommodate these syndromes in

traditional diagnostic categories. Culture Bound Syndromes (CBSs) are singled out mainly: due to the peculiarities of the diagnostic process; varied aspects of the etiology; special symptoms displayed; unique and special consultation given to them. He further asserts that it is hard to generate a definitive list of Culture Bound Syndromes (CBSs) as it is unclear that: what sort of conditions be included (e.g. reports of possession and trance states) and that they have indigenous names; whether similar patterns and behaviors from varied cultures should be put together or kept apart; what can be called a disease and what should be considered as beliefs of a particular culture. However, numerous Culture Bound Syndromes (CBSs) have been identified in different cultures and new ones are being continuously incorporated in the research literature of cross cultural psychology and cultural psychiatry (Hughes, 1985a; Prince, 1960, 1985, 1992; Prince, & Tecneng-Lorche, 1987; Raguram, Jadhav, & Weiss, 1994).

Bhugra (1993, 2000) argued that despite such patterns been identified in the west, the western psychiatry still perceives Culture Bound Syndromes (CBSs) as Eastern phenomenon. There are numerous psychopathological entities though not found in the west and are not well established psychiatric diseases have geographically defined boundaries, have strong symptomtology and beliefs in their local culture (Pelto & Pelto, 1992; Prince, 1960, 1985, 1992; Prince, & Tecneng-Lorche, 1987; Tan, 1969, 1980, 1981; Tseng, 1973; Wen, 1998; Wintrob, 1996). Tseng (1973, 2001) and colleagues (Tseng, & McDermott, 1981) provided an explanation that since modern psychiatry has its origin in the west with western philosophy and scientific traditions, therefore it is not strange for western psychiatrists to consider unfamiliar psychiatric phenomenon and folk healing as foreign, primitive, uninteresting or even inferior.

Prince and Tecneng- Laroche (1987) identified ways to differentiate Culture Bound Syndromes (CBSs) from other illnesses. According to them Culture Bound Syndrome (CBS) is a psychiatric illness which does not have an organic cause and locally described as an illness and is not considered an illness in the western culture; an illness which may be or may not have an organic cause and correspond to a set of western diseases but not recognized as a disease in the west. This can be a syndrome which occurs in many cultural settings but is only recognized and defined in few e.g. Koro, the fear of retracting genitalia which can have psychological reality and can appear as a delusion or phobia in many cultural settings; an illness which does not correspond to allopathic western illnesses and is considered in the west as culturally inappropriate thinking e.g. witchcraft, root work (Caribbean) or evil eye (Mediterranean and Latin America). These are behaviors, which include trance and possession states i.e. hearing, seeing and talking to dead and spirits, which are not considered illness within their own culture, but are considered weird in western societies. It is an illness which only occurs in certain cultural setting but factually does not exist e.g. windigo (Algon Kian Indians), is an illness whose reality has been challenged (Prince, 1992; Simons & Hughes, 1993; Yap, 1964, 1965).

Both Classification systems (ICD and DSM) though gave importance and attention to cultural factors in psychiatry but did not include Culture Bound Syndromes (CBSs) in diagnostic categories till quite recently. The newer versions of DSM-IV (1994) and ICD-10 (WHO, 1993) have included culture bound syndromes as annexure. According to DSM-IV-TR (APA, 2000), Culture Bound Syndromes (CBSs) are "recurrent locally specific patterns of aberrant behaviors and troubling experiences that may or may not be linked to a particular DSM-IV diagnostic category. Many of these patterns are indigenously considered to be illnesses or at least

afflictions and must have local names". DSM-IV-TR (APA, 2000) has included Culture Bound Syndromes (CBSs) as outline for cultural formulation and glossary of Culture Bound Syndromes (CBSs) as a separate Annexure. ICD-10 (WHO, 1993) refers Culture Bound Syndromes (CBSs) as culture-specific disorders with diverse characteristics and two principal features: a. They are not easily accommodated by the categories in established and internationally used psychiatric classification and b. They were first described in and subsequently closely or exclusively associated with a particular population or cultural area. Brief description of the most commonly reported Culture Bound Syndromes (CBSs) in ICD-10 and DSM -IV is given below.

Amok or Mata Elap: Prevalent in Malaysia, a dissociative episode characterized by a period of brooding followed by an outburst of violent, aggressive, or homicidal behavior directed at people and objects.

Anorexia Mirabilis or Holy Anorexia: Initially found in Medieval Europe and was characterized devotion.

Anorexia Nervosa: Initially identified in North America and Western Europe, main feature is severe restriction of food intake, associated with morbid fear of obesity.

Bilis & Colera (muina) The underlying cause is thought to be strongly experienced anger or rage. The major effect of anger is to disturb core body balances. Symptoms are nervous tension, headache, trembling, screaming, loss of consciousness and chronic fatigue.

Boufée Deliriante: Present in West Africa and Haiti, salient features are sudden outburst of agitated and aggressive behavior, marked confusion, and psychomotor excitement. It may sometimes be accompanied by visual and auditory hallucinations or paranoid ideation and is very similar to "Brief Psychotic Disorder".

Brain Fag or Brain Fog: Prevalent in West Africa, specifically in male high school or university students. Symptoms include difficulties in concentrating, remembering, and thinking. Students often state that their brains are "fatigued".

Bulimia Nervosa: Identified in North America and Western Europe, is characterized by binge eating followed by purging through self-induced vomiting, laxatives, or diuretics; and morbid fear of obesity. It may overlap with symptoms of "Anorexia Nervosa".

Dhat: Also known as Semen-loss Syndrome, prevalent in Indian subcontinent and is characterized by severe anxiety and hypochondriacal concerns with discharge of semen, whitish discoloration of the urine, and feelings of weakness and exhaustion. It is similar to the conditions named "*Jiryan*" (India, Pakistan), "*Sukra Prameha*" (Sri Lanka), and "*Shenkui*" (China).

Falling Out or Blacking Out: Prevalent in Southern U.S. and Caribbean, it is characterized by sudden collapse, either without warning or preceded by feelings of dizziness or spinning in the head. The individual's eyes are usually open, but the person claims inability to see. It may correspond to DSM-IV "Conversion Disorder" or "Dissociative Disorders".

Gisi Siknis: Prevalent in Miskito Indians, Nicaragua, symptoms include headache, anxiety, anger, aimless running.

Host Sickness: Found in American Indian groups and is characterized by preoccupation with death and the deceased sometimes associated with witchcraft.

Hi-Wa itck: Reported in Mohave American Indians, main features are insomnia, depression, loss of appetite, and sometimes suicide associated with unwanted separation from a loved one.

Hieh-Ping: Present in Taiwan, it is a brief trance like state during which one is possessed by an ancestral ghost, who often attempts to communicate to other family members. *Hwa-byung or Wool-hwa-bung*: Called *"Anger Syndrome*", is reported in Korea. Symptoms are attributed to suppression of anger.

Involutional Paraphrenia: Paranoid disorder occurring in midlife and reported mainly in Spain and Germany.

Koro: Found in Malaysia, it is an episode of sudden and intense anxiety that the penis, (or in rare cases in females) vulva and nipples will recede into the body and possibly cause death. This syndrome occurs throughout south and East Asia with different names: "Suo yang" (China); "Jinjinia bemar" (Assam); and "Rok-joo" (Thailand). Isolated cases have also been identified in the United States and Europe, as well as among diasporic ethnic Chinese or Southeast Asians.

Latah: Prevalent in Malaysia and Indonesia and is characterized by hypersensitivity to sudden fright, often with echopraxia, echolalia, command obedience, and dissociative or trancelike behavior. The Malaysian syndrome is more common in middle-aged women.

Locura: The syndrome is prevalent in Latin America. It's a severe form of chronic psychosis, attributed to an inherited vulnerability, multiple life difficulties, or a combination of the two.

Mal de Ojo: This is found in Mediterranean cultures. This is a Spanish phrase translated in English as "evil eye". Common in children. Symptoms are fitful sleep, crying without a cause, vomiting and fever.

Nerfiza: Nerves, Nerva, Nervios: (Eygypt, Northeren Europe, Greece; Mexico, Central and South America) Common, often chronic, episodes of extreme sorrow or anxiety, including a complex combination of somatic complaints such as head and

muscle pain, diminished reactivity, nausea, appetite loss, insomnia, fatigue and agitation. The syndrome is more common in women that in men.

Pa-Leng, Frigophobia: (China; South East Asia) Anxiety state characterized by obsessive fear of cold and winds, believed to produce fatigue, impotence, or death. Victim compulsivity dresses in heavy or excessive clothing.

Pibloktoq, Asetic Hysteria: (Inunits living within the Arctic circle) Prodormal fatigue, depression or confusion, followed by a seizure of disruptive behavior including stripping or tearing off clothes, rolling in snow, glossolalia or echolalia, echopraxia, property destruction an coprophagia. Most episodes last only for minutes and are followed by loss of consciousness, amnesia and complete remission.

Pi-gong Psychotic Reaction: Prevalent in China, it is an acute, time-limited episode characterized by dissociative, paranoid, or other psychotic or non psychotic symptoms that occur after participating in the Chinese folk health-enhancing practice of qi-gong.

Sangue Dormido: Reported in Portuguese Cape Verdeans, literally means "sleeping blood". The main features of the syndrome are pain, numbness, tremor, paralysis, convulsions, stroke, blindness, heart attack, infection, and miscarriage.

Shenjian Shuairuo: Present in Chinese population and its symptoms include physical and mental fatigue, dizziness, headaches and other pains, difficulty concentrating, sleep disturbance, and memory loss and various signs suggesting disturbances of the autonomic nervous system. Similar to “neurasthenia" and many cases may meet DSM-IV criteria for major depressive disorder or anxiety disorder.

Shenkui: Reported in China, presence of marked anxiety or panic symptoms with accompanying somatic complaints for which no physical cause can be demonstrated. Symptoms include dizziness, backache, fatiguability, general weakness, insomnia, frequent dreams, and complaints of sexual dysfunction (such as premature ejaculation

and impotence). Symptoms are attributed to excessive semen loss from frequent intercourse, masturbation, nocturnal emission, or passing of "white turbid urine" believed to contain semen. Excessive semen loss is feared because it represents the loss of one's vital essence which can be life threatening. This condition is similar to "Dhat" and *"Jiryan*" (India, Pakistan); and *"Sukra Prameha*" (Sri Lanka).

Shin-Byung: Prevalent in Korea, the syndrome is characterized by anxiety and somatic complaints followed by dissociation and possession by ancestral spirits.

Shinkeishitsu: Syndrome reported in Japan and is marked by obsessions, perfectionism, ambivalence, social withdrawal, neurasthenia and hypochondriasis.

Spell: Reported in Southern U.S, it is a trance like state in which individuals "communicate" with deceased relatives or spirits. At times this is associated with brief periods of personality change. Spells are not considered medical events in the folk tradition, but may be misconstrued as psychotic episodes in a clinical setting.

Susto, Espanto: (Mexico, Central and South America) Highly diverse chronic complaints attributed to "soul loss" induced apathy by severe often supernatural, flight symptoms include agitation, anorexia, insomnia, fever, diarrhea, mental confusion and apathy.

Tabanka: Syndrome reported in Trinidad, is characterized by depression associated with a high rate of suicide in men abandoned by their wives.

Taijin Kyofusho, *Shinkeishitsu*: (Japan) Anxiety or phobia more common among men and young adults. Cases are marked by a fear of social contact (especially friends), extreme self- consciousness and a fear of contracting disease. Somatic symptoms include head, body and stomach aches, fatigue and insomnia. . Similar in many aspects to DSM-IV "Social Phobia", and it is included in the official Japanese classification of mental disorders.

Ufufuyane, Saka: (Southern Africa; among Bantu, Zulu and affiliated groups): Kenya) an anxiety state popularly attributed to magical portions administered by rejected lovers or spirit possessions. Features include shouting, paralysis, convulsions, and stupor. Many victims are young and unmarried women.

Uqamairineq: (Inunits living within the Ascitic Circle) Sudden paralysis associated with borderline sleep states accompanied by anxiety, agitation, and hallucination. Cases are fairly common and traditionally alleged to result from soul loss, soul wandering or spirit possession.

Windigo or Witiko: Reported in Algonkian Indians, and Eastern Canada, syndrome of obsessive cannibalism, now somewhat discredited. Wendigo was supposedly brought about by consuming human flesh in famine situations.

Zar: Present in Ethiopia, Somalia, Egypt, Sudan, Iran, and elsewhere in North Africa and the Middle East. It is presented by an experience of spirit possession. Symptoms may include dissociative episodes with laughing, shouting, hitting the head against a wall, singing or crying. Individual may show apathy and withdrawal, refusing to eat or carry out daily tasks, or may develop a long-term relationship with the possessing spirit. Such behavior is not necessarily considered pathological in the local context.

1.2 Debate on Culture Bound Syndromes

Culture Bound Syndromes (CBSs) do not confirm to conventional diagnostic categories or manifestation of syndromes and are different from western perspective so were taken as exotic to be included in the earlier versions of DSM and ICD. It has been a controversial matter and has raised discussion among researchers and clinicians on whether Culture Bound Syndromes (CBSs) be included in the existing diagnostic systems or not. Despite having been recently included in the DSM and

ICD, the word "bound" restricted to the syndromes in certain cultures is still accepted with controversy. Labels such as "atypical", "exotic" imply that these syndromes are deviant from standard diagnostic criteria.

Numerous Culture Bound Syndromes (CBSs) have been identified all over the World (Heslam, 1980; Hughes, 1985a; Prince, 1960, 1985, 1992; Prince, & Tecneng-Lorche, 1987; Raguram, Jadhav, & Weiss, 1994) but still there is a controversy whether cultural conditions of somatizaiton should be considered as syndromes in their own right. In many cultures, Culture Bound Syndromes (CBS's) occur but they are not considered as actual illnesses. Modern explanation for somatization is that it is a disorder phenomenon or superficial variation in illness superimposed on an underlying phenomenon of anxiety and other disorders (Barsky, & Klerman, 1983; Barsky, & Borus, 1999; Barsky, Wyshak, & Klerman, 1990; Cassidy, 1982; Chaturvedi, Chanda, Susdarshan, & Issac, 1993b; Chaturvedi et al., 1993b; Kleinman, 1982, 1987; Kirmayer, 1994, 2001; Kirmayer, & Young, 1998). Moreover, there are still queries whether the predominant somatic distress in certain settings should be understood as disorders of their own right as they do not fit into broad categories of somatoform disorders, affective disorders or anxiety disorders (Kirmayer, 1991, 2001). For example, in South Asia, a great majority of physical and psychological symptoms are attributed to the loss of vital essence through semen (Bhatia, & Malik, 1991; Bottero, 1991; Kaplan, 1983; Kulanyagam, 1979; Paris, 1991, 1992). Patients with semen loss report turbid urine and are greatly concerned and preoccupied with nocturnal emission or masturbation and treating their anxiety and low mood has been proven effective (Bhatia, & Malik, 1991). Mumford (1996) argues that depressed patients from developing countries present with more somatic symptoms in contrast to

patients in the west, therefore, "*Brain Fag"* and "*Dhat"* are an expression of depression.

Culture Bound Syndromes (CBSs) reflect overall influences on basic patterns and are hard to be related to classifications which have origin in the western societies. It has also been promoted that all the illnesses, physical and psychiatric have cultural connotations. New definition of Culture Bound Syndrome (CBSs) is "a collection of signs and symptoms which are confined to certain cultures because of their psychosocial nature" (Prince, & Tecneng- Laroche, 1987). Yap (1951) in his book entitled "Mental Disease Peculiar to Certain Culture" described Culture Bound Syndromes (CBSs) as *"atypical culture bound psychogenic psychosis*", in 1952 and subsequently he called them "Culture Bound Reactive Syndromes" and "Culture Bound Syndrome" (Yap, 1969). There are many conditions today which are known as Culture Bound Syndromes (CBSs) (Cassidy, 1982; Heslam, 1980; Hughes, 1985a; Prince, 1960, 1985, 1992; Prince, & Tecneng-Lorche, 1987; Raguram, Jadhav, & Weiss, 1994).

It is also argued that "culture bound" is not always bound but heavily related to specific cultural traits and cultural factors in different geographical areas and they share common cultural attitudes (Singh, 1992; Westermeyer, 1979, 1987, 1989; Westermeyer, & Janca, 1997). Prince, & Tecneng–Laroche (1987) assert that Culture Bound Syndromes (CBSs) are accidents of geography as they are present in one culture and not in the others. To them geographical reasons are considered more important than the social reasons. Moreover, designation and names given to them (some diseases are considered culture bound as they have local names), epidemiological differences (prevalence rates, gender ratios, and particular age of

onset) do not contribute to differentiation in diagnosis. Simons (1987) proposes that these syndromes should be named as “Folk Illnesses”.

ICD-10 and DSM-IV have acknowledged culture as an important factor in the diagnosis of psychiatric conditions. However, Wig (1994) recommends that categorizing cultural syndromes separately will not improve management of such cases. Littlewood (1990, 1992, 1996) proposes that if Culture Bound Syndromes (CBSs) are abandoned as an entity then it would mean that all psychiatric disorders are culture bound in the theory of psychiatry. He further argued that with globalization of the world, such syndromes are gradually diminishing in the homogenous world cultural setting. Obeyesekere (1985) has considered the western concept of depression as “culture bound” and according to him traditional healers in the East diagnose it as Dhat and relate a patient’s depression to nocturnal emissions. In the same line, Bottero (1991) argued that semen-loss anxiety just like depression (*Dhat*) is prevalent in most of the countries, however, manifestation and symptomtology differs across cultures.

Similarly, Singh in his letter published in British Journal of Psychiatry (1992) raised a question whether Dhat should be considered a Culture Bound Syndrome or not. Subsequently, Sumathipala, Siribaddana and Bhugra (2004) have raised discussion amongst researchers on the very concept of Dhat Syndrome being a Culture Bound Syndrome. They assumed and concluded that symptoms accompanying semen loss anxiety are reported in various cultures and therefore as previously thought it should not be considered as a Culture Bound Syndrome. They asserted that the concept of culture bound syndromes needs to be revisited and modified. Despite the controversy prevailing around Culture Bound Syndromes (CBSs), the concept is however important and useful as it calls for attention of mental

health professionals to make diagnosis in the cultural perspective. Culture Bound Syndromes (CBSs) are of interest to professionals as they provide examples of how culturally salient features are important in illnesses. Consistent with Sumathipala and colleagues (2004), Alexander (2006) while referring to Dhat Syndrome states "*so-called culture bound syndrome*" and asserts that it is not confined to South Asia. In this context he quotes example of Lord Baden-Powell, founder of the Boy Scouts, who attributed boys' weakness and paleness to semen loss through masturbation.

Rajesh, Jacob and Bhugra (2004) also argued against Dhat Syndrome as Culture Bound Syndrome. They proposed that disappearance of Dhat Syndrome in Western culture can be viewed as forms and contact dichotomy. Dhat Syndrome patients present with various neurotic symptoms and Dhat Syndrome can only be diagnosed if the physician is aware of its explanation. In the West, many patients with Dhat would be diagnosed with anxiety and depression. Moreover, sexual misconceptions are also present in patients with psychosis, substance abuse, bipolar affective disorder and depressive illness thereby making the diagnosis even more difficult. Whether or not different conditions considered as Culture Bound Syndromes (CBSs) is open to debate and is a controversial matter.

1.3 Dhat Syndrome

Expression of sexuality is influenced by individual, societal and cultural factors (Alexander, 2006; Avasthi, & Nehra, 2001; Baker, & DeSilva, 1988; Bhugra, & De Silva, 1996; Collumbien et al., 1998, 2000; Daniels, 1997; Kulhara & Avasthi, 1995; Kumar, Aggarwal, & Trivedi, 1983; Pelto, 1994). One's attitudes liberal or conservative combined with myths, fallacies and judgments effect sexuality (Edwards, 1983; Palmer, Mishra, & Vanker, 2001; Singh et al., 1987; Verma, &

Avasthi, 1990; Verma et al., 2000, 2001; Wen, 1998). In comparison to other disciplines, the field of sexuality is still in infancy. In America, Kinsey and colleagues (Kinsey, Pomeroy, & Martin, 1948)'s survey on American sexual behaviors, is considered pioneering. Despite its importance for person's physical and psychological well-being, very little research attention has been paid to sexual health in the Indian subcontinent. Patients with sexual concern are either ignored or paid no attention by the physicians in India and there is dearth of statistics on sexual problems (Avasthi, & Banerjee, 2002; Avasthi, & Gupta, 2002; Avasthi, & Nehra, 2001; Kulhara, & Avasthi, 1995) as well as specialist clinics to treat such problems (Rao, 2000, 2004).

The myths about sexuality are widely spread in the Indian subcontinent (De Silva, 1994; Joshi, 1965; Mishra, 1963; Kakar, 1996; Patel, Nadkani, & Dhavale, 1996) and quacks and self acclaimed sex specialists have been conducive in reinforcing these myths and sexual misconceptions (Engelhardt, 1974; Kapur, 1979; Money, Prakasam, & Joshi, 1991; Patel, Nadkani, & Dhavale, 1996). Most of the beliefs related to sexuality revolve around quantity and quality of semen. Factually speaking, semen is a product of prostate gland and in adult male, semen production is continuous. An estimate of total semen produced during a life time is roughly about eight quarts. This amount can vary considering the stage, state and tempo of sex life. Spontaneous nocturnal emissions keep the stored amount in balance. It is estimated that total semen produced during a life time is roughly about eight quarts and its amount can vary considering the stage, state and tempo of sex life. In addition to transportation of sperm into a woman body for fertilization, semen has other functions (Bhatia, Bohra, & Malik, 1989; Bottero, 1991; Edwards, 1981; Singh, 1985).

The belief that semen loss is dangerous and harmful for physical health is an important belief of Indian folk and it dates back to hundred of years (Avasthi, & Jhirwal, 2005; Galen, 1963; Hippocrates, 1988). It has been instilled in the people's mind though tales, religious books, literature and Ayuverdic medicine. Guilt around masturbation being associated with semen loss is very common in young men who associate physical and psychological complaints to semen loss through nocturnal emission and masturbation (Verma, et al., 2000, 2001). This fear is further strengthened by the advertisements on sexual problems published in newspapers and magazines. The inner city street walls are full of such advertisement by quacks which further enhance sexual fears and guilt in young men (Brahmbhatt, 1998). Moreover, problems related to sexuality are commonly prevalent in urban, lower middle class men who read sex related literature particularly when they suffer from semen loss. Literature on celibacy mainly written by Brahmans reflects Brahmical biases and it appeals to men suffering from sexual issues (Alter, 1997; Caplan, 1987; Sharma, & Das, 1977; Sivandana, 1984; Sushruta Samhita, 1983).

Semen loss concern or Dhat Syndrome is considered as the product of cultural influences. Dhat comes from Sanskrit word "*Dhatu"* means iron (vital essence) and Dhat Syndrome presents itself as a belief that semen lost during sleep or otherwise through masturbation or coitus is harmful. This belief is taken to an extent that semen lost makes young men weak, sick and pale and in severe form they can end up in a lunatic asylum (Alexander, 2006). Though Dhat Syndrome is associated with South Asia, Sumathipala and colleagues (Sumathipala, Siribaddana, & Bhugra, 2004) in their review article argue that semen loss concern is not only confined to Indian Subcontinent but is prevalent across the globe. Likewise, Balu (2004) asserts that

though Dhat is globally present but in South Asia it presents itself with certain culture specific features.

1.3.1 History and Origin of Dhat Syndrome

In Hindi, semen is known as "*Virya"* which means vigour therefore semen is considered the most perfect and powerful bodily substance. Semen is believed to be a vital essence in Hindu literature and is perceived as a refined form of life energy, a powerful source to counter physical illness (Behere, & Nataraj, 1984) and it is considered grand, great, majestic, beautiful and powerful (Shastri, 1970, cited in Alter, 1997). In India Ayurveda, is known as "science of life" can be traced back to more than 5000 years. Just like medical system it has two schools: the School of Physicians and School of Surgeons. In this respect it parallels allopathy (Mishra, Singh, & Dagenais, 2001). In Indian mythology and Ayurvedic, there are seven bodily fluids (called *Dhatus*) each of which is a refinement of the previous one i.e. chyle is concentrated into blood, blood into flesh, flesh into fat, fat into bone, bone into marrow and marrow into semen (Zimmarmann, 1988). Semen is taken as elixir, and it is believed that it takes 40 days and 40 drops of blood to form one drop of semen and semen has a capacity of 20 tolas (6.8 ounces) (Carstairs, 1956, 1973). Similar beliefs are held in Sri Lanka, and Unani (Greek) medicine, where also it is believed that 40 drops of blood produce one drop of semen (Kakar, 1982, 1996; Obeyesekere, 1976).

In Punjabi region north of Rajasthan, it is believed that 40 drops of blood yield one drop of marrow and 40 drops of marrow make one drop of semen (Bhugra, & Buchanan, 1989; Nakra, Wig, & Verma, 1977, 1978). In South Asia the production of semen is thought to start with the digestion of food (Zimmermann, 1988) and it is

believed that “after food intake, it takes five days to become blood; it takes further five days for blood to digest and convert into flesh”. After another five days “flesh converts into fat, fat into bone, bone into marrow and after last five days in a total 30 days marrow converts into semen. 40 kilograms of food are required for a single table spoon of semen”. In Bramhacharya literature 100 units of food make one unit of blood and 100 units of blood make one unit of semen (Kar, & Verma, 1978).

It is also believed in Indian mythology that semen permeates the whole body as oil permeates in almond, butter in milk, juice in raisins, scent in flowers and fire in amber. A lot of emphasis therefore is placed on the quality, value, flow and consumption of semen (Khare, & Rao 1986; Zimmermann, 1988). In order to get one drop of semen, ones’ body is required to be squeezed like a lemon. It is also believed that when a person is stimulated to the point of ejaculation semen is drawn out of each molecule of the body, in the same way as the milk is churned and butter drawn out of every molecule (Sivananda, 1984). At the time of orgasm, all body nerves are violently shaken and all parts of the body are jolted. The person who has an orgasm is assumed to be like a dried up lemon. If semen remains in the body its vitality, force and growth stays intact. Semen is considered precious and when used up, drains all the vitality from a man and makes him vulnerable to diseases (Dash, 1974).

For the first time, the term “Dhat Syndrome” was formally used by Wig (1960). Semen loss anxiety also known as Dhat Syndrome is common in India and China (Dewaraja, & Sasaki, 1991a). It is a Culture Bound Syndrome and is related to beliefs about the relationship of semen to spiritual and physical health. Passing of semen in urine is called Dhat or “*Dhatu Rog”* and in some parts of India and Pakistan, it is also known as *"Jiryan".* The ethnomedical perspectives of ayurvedic medicine have explained health and illness, including loss of genital secretions through a

"cultural prism" and it influences people's view of self and body in South Asia (Kakar, 1982). In 1950's, Carstairs (1956) a British Psychiatrist worked in North Indian village and observed semen loss concerns in some patients visiting his practice. Carstaris (1973) report that semen of good quality is rich, semen of poor quality is thin, watery and smells bad. Semen can be lost through bad eating habits specially hot and spicy foods.

In the Indian subcontinent, semen loss is considered dangerous and harmful for physical health as referred in tales, religious books, literature and Ayuverdic medicine (Bhugra, & Buchman, 1989; Jadhav, 2004; Raguram, Jadhav, & Weiss, 1994; Sharma & Das, 1977, Singh, 1985, 1992; Wig, 1960). In 18th Century, Tissot (1766, cited in Sumathipala, Siribaddana & Bhugra, 2004) presented a theory similar to Ayurvedic and linked semen loss with venereal diseases, prostitution and degeneracy. The practitioners of Ayurvedic medicine believe that semen is vital, and excessive fluidity is the sign of semen loss. Loss of genital secretions (often known as *Dhatu Loss*) has been reported to be of great concern in both men and women in South Asia (Chaturvedi, 1988; Chaturvedi, et al., 1993a, 1993b, 1996; Kumar, 1990; Lambert 1998; Patel, Nadkani, & Dhavale, 1996; Patel, & Oomman, 1999; Singh, Avasthi, & Pravin, 2001; Trollope – Kumar, 1999, 2001). This concern is accompanied by cluster of symptoms shaping them into a culturally determined illness. Though there is lots of literature on *"Dhatu Loss*" in men but there are few reports present on women as well (Bang, & Bang, 1989, 1996; Chaturvedi, et al., 1993a; Singh, et al., 1987). Complaints of vaginal discharge among women have however been mainly associated to reproductive tract infection. Ayurvedic professionals consider semen loss as a serious illness which can lead to physical weakness and they promote herbal and dietary treatment (Dash, 1974).

Indian mythology has strong conviction in semen control and its preservation. Its conservation is considered to have religious, social, political and psychological implications (*Virya Virodh*). The god Shiva is considered as emaciated from erotic sex and was known for his sexual powers and ability to exercise control over this power. He used yogic practices to hold his erection without passing a single sperm. Semen conservation has a long history derived from Biblical explanations (Money, Prakasam, & Joshi, 1991).

In order to preserve semen, frequent sexual activity and orgasm are condemned in Asian culture as they result in semen loss (Malhotra, & Wig, 1975). In this context, an important concept of Brahamcharya (Celibacy) in Hinduism is of particular significance (Caplan, 1987; Kakar 1982, 1996; Obeyesekere, 1976, 1977, 1985). Brahamcharya means total control over one's semen and immunity to sexual diseases (Saraswati, 1982; Sharma, & Dash, 1977; Sivananda, 1984). The word "Braham" means unchanging regardless the circumstances and "*Charya*" means behavior or conduct. It is further explained as "true diet, true exercise and true work" (Saraswati, 1982). It is believed to be a life of simplicity and bringing all faculties under self control. The man who takes a vow of Brahamcharya (celibacy) is considered holy and who usually is a middle aged man, who has completed his obligations and retreats to the forest. Gandhi took a vow in early middle age but had difficulty maintaining it and he is also reported to have semen loss concern (Alter, 1997; Caplan, 1987; Erickson, 1969; Gandhi, 1948, 1957, 1964; Gangadhar, 1984).

According to Yogacharya Bhagwander (1992, cited in Alter, 1997), "celibacy improves the condition of ones semen, much semen one is able to attain, one will receive wisdom in the same proportion, high spirituality and knowledge and the power as much as one wants". In Susrata, it is believed that by drinking semen of

another man one can gain reproductive power. In the beginning of 20th Century, the yoga Renaissance also proposed a number of measures to prevent semen loss. Yogic exercises would allow retain semen in the body after ejaculation, to prolong intercourse but suppress ejaculation (Bharati, 1965; Eliade, 1969, cited in Alter 1997; Trollope- Kumar, 2001). Moreover, Ayurvedic medicine also highlights the importance of semen conservation (Money, Prakasam, & Joshi, 1991; Obeyesekere, 1977).

In Sri Lanka people are selective about their food for good semen maintenance and it is reported that to enhance the quality of thin semen males drink their own semen after masturbating (De Silva, & Dissanayake, 1989; Obseyesekere, 1976). One of the informants in Carstairs' study (1956) reported drinking semen of his other homosexual partner. These beliefs about semen being precious and need for its conservation generated from Rajesthan and Sri Lanka are widely spread throughout the subcontinent. Semen loss concern is not specific or unique to South Asian cultures (Sumathipala, Siribaddana, & Bhugra, 2004). Significance of semen for men's health has been considered from ancient times and masturbation was considered by Greeks as a natural outlet and source of satisfaction for men. In Europe, semen was considered as a *"soul substance*" (Galen, 1963). Hippocrates (1988) spoke of semen as supplier of complete form to the human body. According to Aristotle (384-322 BC, cited in Sumathipala, Siribaddana, & Bhugra, 2004), "sperms are the excretion of our food and most perfect of our food". Galen (1963) explained that "certain people have abundant warm sperms which arouse the need for excretion and after its expulsion people experience weakness, dryness of body, become thin, their eyes grow hollow and they prevent from sexual contacts".

Ancient theories refer to the relationship between semen and blood and that blood which is essential for life gets converted into semen. In Aristotle time, it was believed that food forms blood and blood converts into milk which in turn converts in to sperms. The woman was considered as a passive partner in heredity and that her blood comes from her male ancestors. Tissot (1974) believed that despite proper food, body could become weak due to diarrhea, loss of blood and semen emission. According to him, semen causes growth of beard and muscular strength. Loss of semen can cause sexual weakness, madness, pimples on face, digestive problems and headache. Men can loose semen through intercourse and masturbation has very debilitating effect. Tissot's views gave way to the concept of masturbation being dangerous and a sinful activity. His work influenced Benjamin Rush (1812; cited in Sumathipala, Siribaddana, & Bhugra, 2004)'s concepts who believed that excessive indulgence in sex leads to seminal weakness, impotence, epilepsy, hypochondriasis, memory loss, vertigo, sight problems, pulmonary problems etc. Similarly in France, Lallemand (1839; cited in Sumathipala, Siribaddana, & Bhugra, 2004) was concerned about involuntary semen loss and viewed it as a reason of insanity.

In the UK, Acton (cited in Sumathipala, Siribaddana, & Bhugra, 2004) cautioned about frequent sex as it would lead to loss of energy and masturbation according to him was the main reason for seminal emission. Loss of semen was regarded equivalent to loss of 4 ounces of blood, and would take very long to make up for this loss (Hunter, 1900, cited in Sumathipala, Siribaddana, & Bhugra, 2004). In Australia, George Beaney (cited in Sumathipala, Siribaddana, & Bhugra, 2004) suggested that semen was more precious than blood and quacks should be avoided for effective treatment of spermatorrhoea i.e. abnormal emission of seminal fluid. Beaney (cited in Sumathipala, Siribaddana, & Bhugra, 2004) believed that

spermatorrhoea and masturbation lead to inflammation of the urethra, bladder irritation, disturbed sleep, erotic dreams, confusion, wakefulness, depression, epilepsy, impotence and tuberculosis. In Egyptian texts semen is formed in bones. Blood and marrow come from paternal semen and fat and flesh from maternal (Sumathipala, Siribaddana, & Bhugra, 2004).

Semen preservation has been emphasized and its loss was believed to cause depression, dementia (Esquirol, 1772, cited in Sumathipala, Siribaddana, & Bhugra, 2004), neurasthenia (Beard, 1839-1883, cited in Beard, 1905), mental illness (Maudsley, 1835-1918, cited in Sumathipala, Siribaddana, & Bhugra, 2004), physical disability, mental impairment, moral degradation (Parking, 1843) and even death (Celsus, 50 AD, cited in Sumathipala, Siribaddana, & Bhugra, 2004). Masturbation was considered as the major source of semen loss (Freud, 1905, 1912). Most of the researches in this area have focused on Hindu patients, however semen and genital complaints are also reported by other religious groups e.g. Jains (Carstairs, 1956) Muslims (Carstaris, 1956; Nakra, Wig, & Verma, 1977; Khan, 2005) and Buddhists (Obseyesekere, 1976). It appears that semen loss anxiety exists from ancient times and it is prevalent both in western and eastern countries. It was widespread in the west during 19th century and may still exist in different form.

In Hikmat (traditional medicine), it is believed that the God Almighty is the creator of all kinds of creatures in the Universe. With the exception of stills He has created couples (masculine and feminine) for propagation of that particular creature. While doing so He has developed attraction in both sexes. In humans it is mostly stated that men and women marry each other for the sake of off springs. According to Hikmat it is incorrect. In fact there is desire of sex which attracts them rather than the desire for reproduction. It is believed in Hikmat that no happiness / enjoyment

comparable to the one which results from intercourse. Therefore every one is keen to improve his / her sexual performance. In order to do so they may use different medicines which are known as sex stimulants (Qarshi, n.d.).

At the age of adolescence both men and women become aware of sexual desire. In less educated society due to lack of knowledge, people may adopt unnatural ways to satisfy sexual desire. These unnatural ways include masturbation; excessive indulges in intercourse and homosexuality. Since people from lower socio economic class can not afford access to women, they get indulged in masturbation which is at their own discretion and no finances are involved in it. Intercourse with women is a natural process to fulfill sexual urge. If one has intercourses with certain intervals depending on one's energy level, it does not have any harm. However, in case of over indulgence, excessive seminal fluid gets discharged resulting in heart palpitation, heart weakness, chorea and hypochondriasis. If proper treatment is not taken it may lead to cough and even tuberculosis (Qarshi, n.d.).

The second unnatural way of semen discharge is homosexuality and it is considered as more harmful than discharge of semen through natural ways. The most dangerous of all is semen discharge through masturbation as during masturbation semen is forcibly ousted from the sensitive veins. If one overindulges in above stated methods, it may result in semen virile, night discharge and impotency. In the context of Tib-e-Unani's perspective about semen loss, numerous medicines have been prepared to treat semen loss (Qarshi, n.d.).

1.3.2 Perspectives of Dhat Syndrome

There are different perspectives which have provided explanations for sexual disorders and religions i.e. Christianity, Islam and Hinduism which have put forward

their views about human sexuality. Below given section presents a brief overview of the ideas and concepts presented by these perspectives and religions regarding sexuality and Dhat Syndrome. Only Christianity, Islam and Hinduism have been focused as they are the main religions of the region in which the present research has been carried out. Moreover, Hindu mythology has contributed significantly in the understanding of human sexuality.

1.3.2.1 Christian Perspective

Before Christian era, Jewish authors stated the depositing of semen other than in vagina is harmful. Masturbation was considered as a crime deserving death penalty. In European culture, masturbation and nocturnal emission were considered as sinful. It was also believed that person fasting would have more control over his bodily processes and his nocturnal emission will be less harmful and sinful (Bullough, 1976, cited in Sumathipala, Siribaddana, & Bhugra, 2004).

In Christianity, masturbation is perhaps one of the most debated and least resolved sexual issues. Bible does deals in some depth with sexual immorality, perversions, but there is no clear assertion about masturbation (Dolphin, 1995). Many scholars have debated for years on the sin of "*Onan"* (Genesis, 38: 8-10) and considered it synonymous to masturbation. However, it was found out that it is not synonymous to masturbation and is a practice for birth control in which individual withdraws himself of sexual relation before orgasm. "*Onan"* was killed for his inability to fulfill his duty as a brother-in-law to provide children for his brother's widow and this was laid down as a part of the Mosaic Law (Deut 25: 5-6). God has given latitude with certain boundaries and within such boundaries masturbation could be taken as a healthy way of relieving sexual tension that builds up in teens (Dolphin, 1995). Christian counseling books vary in their approach regarding issue of

masturbation. Some of Christian youth pastors or psychologists endorse masturbation as normal and natural. In Europe the Judeo-Christian cultures during 18th and 19th centuries considered all types of sexual activities outside marriage as sinful (Dolphin, 1995; John, 1996).

1.3.2.2 Hinduism Perspective

As discussed in earlier section, Hindu mythology has focused lots of attention to the field of sexuality. The concept of Barhamcharya (celibacy) emphasized on conservation of semen and put forward the concept of Celibacy (Yogacharya Bhagwander, 1992, cited in Alter, 1997) is considered as a process to counter-act masturbation. It is believed that sex related fantasies generated by literature, sex related conversation, interaction with women, arousal, orgasm and ejaculation all lead to loss of semen and result in physical weakness (Saraswati, 1982; Sivananda, 1984; Smitha, 2001).

In the beginning of 20th Century, the Yoga Renaissance strongly propagated the scientific explanation of physical health. Yoga literature emphasized on yoga practices, diet, sun bath, mud packs and enemas for various sexual problems. According to modern yoga movement Bharatiya Yoga Sansthan (BYS), mental and visual sexual images are considered far more dangerous and love is considered as a destructive phenomenon. Ghandi (1948) earned huge public popularity through advocacy of naturopathy (Alter, 1997).

Nocturnal emissions or Supnadosh (*dream error, ihtalam*) has been given immense importance in Hindu literature and is considered as the worst of all diseases (Shastri, 1970, cited from Alter, 1997). Shastri Jagatkumar (1970, cited in Alter, 1997) describes 42 factors that cause nocturnal emissions. Some are physical such as infection of penis, urinary tract infections, indigestion and constipation and others are

psychological such as tension and depression. Semen loss and masturbation both are considered to contribute in deterioration of physical health. Emotional arousal may also cause degeneration of semen (without orgasm and ejaculation) and leads to its leakage. According to Bharatiya Yoga Sansthan (BYS) mental and visual images are far more dangerous and cause semen loss (Bhagwander, 1992, cited in Alter, 1997).

1.3.2.3 Islamic Perspective

Islam focuses special attention to sexuality and in the "*Al- Quran"* (the Muslim Holy book) there are specific parts on approved sexual behaviours. For example, masturbation has been referred in the "*Quran"* as "seeking beyond". In the *Holy Quran Surah Al Mu'minun, Verses 5 -7*) it is stated:

"And those who guard their Chastity (i.e. private parts, from illegal sexual acts), except from their wives or (slaves) that their right hand possesses, for them, they are free from blame but whoever "seeks beyond" that, then those are the transgressors" (Al-Hilali, & Khan, 1996, p. 288).

In another Surah of the "*Quran"(Surah Ma'aarij: Vers 31),* Allah says *"Those who seek beyond this (i.e wives and slave girls) are transgressors"* (Al-Hilali, & Khan, 1996, p. 729).

Therefore in Islam, believers can only have sex with those whom they possess legally, other than that is "going beyond" which is a sin. From these Aayahs, Imaam Shaafie concluded that masturbation is haraam on the pretext that masturbation is excluded from two types which Allah has made halaal (permissible). Fuqahaa (Jurists) have also concluded from Quranic Ayya *(Surah Al Mu'minun, Verse 32).* that masturbation is prohibited.

"And those who do not find the means to marry should remain chaste until Allah gives them resources by His Grace" (Al-Hilali, & Khan, 1996, p. 432).

There is no consensus among scholars (*Imams)* from four schools of thoughts on masturbation being "*Haraam"* (prohibited). Imam Ahmad bin Hambal considers it legitimate whereas Imam Maalik and Imam Shaafi hold it strictly prohibited. Hanfi school of thought though considers masturbation prohibited but if sexual desires is intense and overwhelms a person, and in such a situation if some one indulges in masturbation, then it may be forgiven (Modudi, 1979). According to Mufti Waqar-ud-din Al Qadri (Hanfi), if some one is overpowered by sexual desire which could lead to adultery or in a situation when one is not capable of getting married, or his wife is far away, then it is hoped that there will be no punishment for masturbation. In line with this Sheikh Alla'ud Din Muhammad "if there is a fear of community adultery then it is hoped that there is no punishment of masturbation" (Ali, & Nanwatvi, 1398).

Saeed Bin Jubayer (may Allah be pleased with him) narrates that the Prophet once said "Allah will inflict punishment on group of people because they misused their private parts". Anas (May Allah be pleased with him) narrates that the Prophet said "the person who performs marriage (Nikah) with his hands (i.e. masturbates) is curse" (Brelvi, 1921). Abdullah bin Masood (may Allah be pleased with him) reports that the Holy Prophet (Allah's grace and peace be upon him) said: "O' group of youth! Whoever from among you can marry should do so because it keeps the gaze low and it protects the private parts. "And he who cannot marry should fast because fasting breaks lust" (Ali, & Nanwatvi, 1398).

In Islam, homosexuality is considered an unnatural and is condemned. Allah says in the "*Quran*" *(Surah Hud, Verse 77).*

"And Lut! When he said unto his folk: Will you commit an obscenity that none has ever committed before you? You fulfill your lust on men instead of women? Indeed, you are a wanton nation" (7/80-81). *"And when our messenger came to Lut,*

he was grimed on the account of them and felt himself straightened for them (for them lest the town people should approach them to commit sodomy). He said "this is a distressful day" (Al-Hilali, & Khan, 1996).

In these verses, Allah emphatically denounces the unnatural, perverted manner of sexual gratification that was practiced by the nation of Loot and become known thereafter as sodomy or homosexuality. At another juncture in the "*Quran"* Allah has described the punishment inflicted upon this sick nation. Hazrat Jibra'eel lifted their entire city into the sky, inverted them and brought them crashing down onto earth with a terrific bang. Thereafter, boulders and rocks rained down upon them from the sky. These stones were of a different composition altogether, and each had the name of the culprit to be pelted by it inscribed upon it. Despite the sincerest of warnings from their prophet Lut, they remained persistent in their foul deeds and doings; thus 40000 of them were annihilated in a single moment. Allah taught them a lesson unto mankind right up to the Day of Judgment, that even today, traces of their destruction are present in the Dead Sea (also known as the *"Sea of Lut",* the water of which is so dense and bitter, it will not permit any tree or vegetation to grow upon it's shores. There is Hadith (narration from the Prophet Mohammad) reported by Ibn Abbas in Sinan Abu Daud, Tirmzi and Ibn-e-Maja that if you find some one indulged in act of nation of Lut i.e. act of homosexuality, then kill that person (Ali, & Nanwatvi, 1398).

It can be summarized that in Islam gratification of sexual desire is permissible only through marriage and not permissible through other ways such as masturbation and homosexuality. Condemnation of these acts is found in the Quran, Ahadiths (narrations from the Prophet Mohammed) and interpretation by Fuqha (Jurists) and Imams (scholars).

Besides religions, there are few perspectives which have provided explanations for sexual problems and Dhat Syndrome. Included among these

perspectives are Psychodynamic, Chinese and recent models of Dhat Syndrome. A brief description of these perspectives is given below:

1.3.2.4 Psychodynamic Perspective

Psychodynamic theories provide explanations for cultural variations in psychopathology (Erickson, 1969). In the context of Dhat Syndrome, castration anxiety becomes very relevant. Carstairs (1956) views Indian father as a forbidding and oedipal figure (Freud, 1898, 1905, 1912). Dhat being more common in Northern India compared to South India has been explained in the same framework. Fathers in North India exert control over every aspect of their son's lives thereby son develops unconscious hostility towards fathers which produces neurotic symptoms hence expressed as semen anxiety (Murphy, 1977, 1982).

This psychodynamic explanation for Dhat Syndrome can not be fully satisfactory, as in many societies with authoritative fathers, there is no semen anxiety. However, in more conservative and repressive societies where sex is a tabooed area and sexual activities are prohibited, Dhat reflects as sexual anxiety. In young men, Dhat is reflection of their desire to be strong enough to take up role as the householders and exert control over wives. Men with semen loss concern are reported to be afraid of marriage and have fear of sex, fear of women and fear of responsibility (Kakar, 1982, 1996; Roland, 1988).

1.3.2.5 Chinese Perspective

Chinese traditional theories on sex constitute a sexual schema and misconceptions which have been passed from generation to generation for several years (Edwards, 1976, 1983). The Chinese believe in "*Ching"* which constitutes

"*Yang*" (semen) in men and "*Yin*" (vaginal secretions) in women. The negative "*Yin*" force is related with passivity, darkness, femininity and flexibility. The positive "*Yang*" force is associated with anxiety, light, heat, muscularity and rigidity. Tissot (1974) explained "*Yin*" and "*Yang*" in the form of following equations.

Yang	=	Heaven	Sun	Fire	Male
Yin	=	Earth	Moon	Water	Female

Chinese culture emphasizes on "*Yin*" and "*Yang*" interaction called "*Ching*", and believes that productivity and health is a result of balanced interaction in these two legos. The absorption of "*Yin-Yang*" harmony is beneficial to men and women both. "*Ching*" is also taken as a life force and vital energy and deficiency in "*Ching*" is a serious matter. Coitus stimulates "*Yang*" and "*Yin*" essences and can debilitate the body as the loss of "*Ching*" is very deleterious to health. The men should limit the frequency of coitus to preserve precious "*Yang Ching*". This theoretical explanation has become the folk belief in the Chinese culture.

In Chinese traditions, great emphasis is also placed on eternal influences, eating habits and sexual activity. It is believed that health is maintained by balance in diet and sex which is regulated by "*Yin*"and "*Yang*". In line with Hindu mythology, in Chinese culture it is believed that food converts itself into blood and it in turn is converted in to "*Jing*" (semen, sexual fluid) which is essential for health, is basis of "*Qi*" (breath) and "*Shen*" (ethereal). Men who have limited "*Yang*" (jing) should limit sexual activities. Semen is a vital energy and its loss produces weakness and anxiety in young men (Ku-Wu Chen 1939, cited in Edwards, 1983; Tseng, 1973). Frequent coitus is considered to be injurious to health and coital frequency of 1-2 times / week is recommended (Pi, 1958, cited in Edwards, 1983). Great emphasis has been placed on having coitus during late night hours as "*Yin*" is considered to be dark

and hidden (Edwards, 1976, 1983). It is also believed in China, that women are able to steal vital fluid from men and loss of this fluid leads to disease (Bottero, 1991).

Wen and Wang (1980) defined "*Shen- Ku'ei* "as kidney deficiency. In classical Chinese medicine, shen (kidney) is considered as the reservoir of semen (*Ching*) and "*Kiuei"* refers to its deficiency. People suffering from it are believed to become anxious and they manifest variety of symptoms including somatic complaints i.e. dizziness, weakness, insomnia, fatiguability, backache, physical thinness etc. It is believed to be associated with loss of semen due to excessive intercourse, masturbation, nocturnal emission or passing of white turbid urine which is believed to contain semen.

A condition similar to Dhat Syndrome and "*Shen Kuei*" has been referred as "Koro" (Bottero, 1991). In the UK among Chinese population (Hasten, 1950, cited in Sumathipala, Siribaddana, & Bhugra, 2004), as well as in Malaysia complaints similar to Dhat Syndrome are reported (Tan, 1969, 1980, 1981). Chinese culture has similarity with western thinking in that it associates masturbation with sexual and non-sexual maladies. It is believed that among Chinese around 90% men masturbate and excessive masturbation results in impotence and premature ejaculation. Furthermore, the Chinese concept of "S*hanjing Shuairuo"* (neurasthenia) is considered to have erectile impotence as one of the main symptoms (Lee, & Wong, 1995).

The suppression of seminal emission is a very ancient Chinese based practice. A man can conserve his limited supply of "*Yang Ching"* without threatening mutual benefit: the man absorbs the vitalized "*Ching"* back into his system and the woman's yin ching is vitalized by being stressed up. This technique is practiced as a contraceptive and requires enough skill to disperse with added protection (Carstairs,

1956, 1961). Techniques called "*Taoist"* in ancient China aimed to increase the amount of life giving seminal essence and it was believed that seminal fluid is located in the lower part of male's abdomen. In these techniques, it was considered essential that the woman reaches orgasm during intercourse so that man receives her "*Yin"* essence. The belief is that more "*Yin"* man receives more strength he gets. Similar other techniques such as "*Huan Ching Pu Nao"* (making the "*chin"g* return to nourish the brain) to increase or retain seminal essence were in practice (Bullough, 1976 cited in Sumathipala, Siribaddana, & Bhugra, 2004).

3.2.6 Illness Specific Model for Dhat Syndrome

Ranjith and Mohan (2004, 2006) proposed a model for Dhat Syndrome which considers cultural, predisposing and precipitating factors as antecedents of attention bias and arousal symptoms which lead to fatigue and other symptoms. Cultural factors result in a particular attribution of semen loss and other symptoms and results in illness behaviour and sick role. In other words this model suggests that under stress, those people who are predisposed to somatization and are preoccupied with their health focus more on physiological symptoms such as tiredness and thick urine and attribute it to semen loss. According to this model, demographic and cultural factors are important in shaping illness behavior and traditional healers further reinforce these beliefs. There is substantial body of research to provide support for this model. For example, Malhotra and Wig (1975) found Dhat Syndrome more prevalent among people form lower socioeconomic class, and they offered inhibition and conservativeness an explanation for semen loss anxiety. Similarly Singh (1985) considered cultural attitudes toward sex more important in Dhat Syndrome.

Barsky and Klerman (1983) also suggested that in stressful situations emotionally aroused state may be produced, leading to amplification of normal physiological phenomenon. Due to high sexual arousal and health anxiety, some changes in the turbidity of urine are taken seriously and perceived as an illness in patients with Dhat Syndrome. Such patients become hypersensitive and scan for more symptoms. In specific cultures where sex and masturbation are tabooed, the focus is more on genital areas and sexual performance. Since in India, semen has been considered as the most refined of seven elements (*Dhatu*) in human body (Obeyeskere, 1977), the concept of formation of semen endorses its value and semen loss is perceived as a serious problem. The loss of libido and poor sexual performance followed by emotional distress further reinforces the belief that there is loss of sexual performance (Dewaraja, & Sasaki, 1991a). It has also been argued that people traumatized by years of revolution and oppression, women and men in China suffer from the culture shaped complaints like neurasthenia, weakness, fatigue and dizziness (Kleinman, 1977, 1982). In powerless situations body may be the only available way of expressing distress (Nichter, 1981b).

1.3.2.7 Ethnophysiology as a Model for Semen Loss

There is ethnographic and psychiatric literature documenting importance of involuntary semen loss and anxiety associated with it in South Asia (Bottero, 1991; Caplan, 1987; Dewarja, & Sasaki, 1991a; Edwards, 1983; Kakar, 1996; Malhotra, & Wig, 1975; Nichter, 1981a). Loss of semen is commonly known as Dhat Syndrome and has been reported with a wide range of associated symptoms. "*Virya"*, is the Hindi word for semen which means vigour. Semen loss is considered synonymous to loss of some thing precious. Sexually weak person without semen is just as a poor

man without money. The anxieties revolving around loss of sexual strength are encoded in the ethnophysiology of sex in the region. Similar concepts exist in the Chinese view about health and sex (Edwards, 1983; Kleinman, 1980). Semen is considered to be the ultimate force which is linked with sexual, physical and spiritual strength. Mahatma Gandhi is also reported to be preoccupied with the transformation of sexual energy in to psychic and spiritual one. As stated earlier he took the vow to observe celibacy at very young age (Caplan, 1987). The loss of semen through different modes e.g. sexual activities or images and fantasies is thought to be harmful physically and spiritually (Nag, 1996). Vedic scriptures link food to health and sex and it is believed that it is a long process of semen to get converted from food. Sixty pounds of food is required to replace the loss of semen lost in one ejaculation (Collumbien, et al., 1998).

Ayurvedic medicine lays emphasis on three bodily humors and sexual health is perceived to depend on proper diet and appropriate maintenance of semen (Edwards, 1983). According to Bottero (1991), main cause of Dhat depletion is overheating due to unbalanced diet with excessive heating food for example fish, pepper, eggs, and garlic. The general cultural concepts relating to pervasive hot-cold quantities /events to semen indicate clear provision of indigenous model of semen loss. Similar importance of the hot-cold belief system exists in the context of physiological processes, particularly relating to disease (Pool, 1987, cited in Bottero, 1991).

Semen being the vital essence and refined form of energy exists both in men and women considered to be Dhat Syndrome in men and Leukorrhea (vaginal discharge) in women (Nitchter, 1981a; Patel, & Oomman, 1999). Nichter (1981b) asserts that "Dhatu has a role in the control of emotions" in the body, "*Dhatu"*

controls heat and thus all processes of transformation. In the mind, "*Dhatu"* facilitates buddhi (intellect) which controls and gives direction to "*Mana"s* (desire) which is provoked by a quantum of heat. "In order to be able to think clearly, focus one's attention, or have control over one's emotions, enough "*Dhatu"* must be present to counterbalance heating influences" (Nichter, 1981a). Excessive heat is often considered to result in unbalanced emotional state and serve as a sign of general distress. "Emotions are exacerbated by heating influences such as heating foods, alcohol and sexuality. Conversely, suppressed emotional states are expressed somatically be reference to overheat" (Nichter, 1981b). The concept of association between semen loss and excessive heat hints towards psycho social cause of white discharge rather than infection. Infact, white discharge both in men and women has now been recognized as idioms of distress and associated with perceived weakness. The feelings associated with semen loss are depression and hypochondria, resulting from extreme anxieties one suffers (Bottero, 1991).

Somatization has been important mode of expression of distress both in men and women. Vaginal discharge however does not interfere with sexual capacity, whereas semen loss does (Edwards, 1983). In Indian Subcontinent would weakness and distress would be attributed to loss of vital essence (semen in men and vaginal discharge in women), whereas elsewhere it would be attributed to stress and overwork (Dewaraja, & Sasaki, 1991a).

Malhotra and Wig (1975) considered semen loss as Indian culture bound syndrome, whereas Edwards (1983) described it a South Asian syndrome prevalent in Indian subcontinent. Bottero (1991) expanded it to beyond South Asia, tracing it back historically to Hippocrates and Tissot (1960, cited in Bottero, 1991)'s time. Tissot referred to diseases caused by masturbation and gave views very similar to Dhat

Syndrome. According to him 'loss of very liquid seminal liquor" during urination, defecation, nocturnal emissions, masturbation and also through spontaneous discharges, which constitute "*gonorrhoea simplex*", "a flow of semen without erection", described in *"true gonorrhoea*: as opposed to *"bastard or catarrhal gonorrhoea*" (which corresponds to our modern blennoggagia, a purulent urethritis)'. Edwards (1983) asserts that sexual anxieties, regarding masturbation and semen loss are still present in traditional Western societies, but that 'revision in the "scientific" medical interpretation of sexual physiology have reduced and altered its manifestation and severity'. Recently Sumathipala and colleagues (2004) in their review article argued that Dhat Syndrome is not a Culture Bound Syndrome (CBS) as it has been reported all over the world in one form or the other. This review article generated discussion. Shankar and Gilligan (2004) in their response to Sumathipala and colleagues (2004)' review assert that though Dhat is globally prevalent but its specificity of culture and its development in South Asia cannot be ignored. According to Indian Ayuverdic medicine genital secretions are considered to be Dhat and loss of this precious substance may lead to weakness and even death.

1.3.3 Epidemiology, Clinical Presentation and Implications of Dhat Syndrome

Dhat Syndrome is commonly present in Indian Subcontinent, including Nepal, Bangladesh and Pakistan (Gandhi, & Mahatme, 1989; Khan, 2005; Neki, 1973; Sethi, 1978; Singh, 1985; Tiwari, Katiyar, & Sethi, 1986; Wig, 1984, 1998). Dhat has also been reported in Buddhist in Sri-Lanka, Muslims in Pakistan and Gulf States (Khan, 2005; Mumford, 1996; Wig, 1984, 1998). Some immigrants from these countries are also reported to present with Dhat Syndrome in clinics in America and Europe (Hay, 1992). A typical profile of Dhat Syndrome patient is a young man, either unmarried,

or has little or no experience with women, or recently married (Bhatia, & Malik, 1991), less educated (Behere, & Nataraj, 1984), from rural background and the one who holds strong traditional beliefs (Brahmbhatt, 1998).

Most of the Culture Bound Syndromes (CBS's) are similar and present with worry, irritability, guilt, sexual problems, anxiety, fatigue, weakness, pain and failure to meet social obligations (Simons, 1985, cited in Simons, & Hughes, 1993; Simons, 1987) and this can also be applicable to semen loss syndrome. A classic case of Dhat Syndrome has extreme and exaggerated concern about passage of semen and very clearly expresses his worry about semen loss. They often complain of their urine is opaque, attribute these symptoms to whilst discharge in their urine. Semen which is considered as a valuable and vital fluid provokes anxiety and depression in them (Aggarwal, Dhikav, & Anand, in press; Dhikav & Aggarwal, 2007). Some authors argue that depression can be viewed as culture-bound and doctors from Indian Sub-Continent may relate weight loss in depression to nocturnal emission and thereby come up with a diagnosis of "Dhat" or "Semen Loss Anxiety" (Mumford, 1996). Obeyerekere (1985) and Bottero (1991) however assert that term "Dhat" is alien to western clinicians and though semen loss anxiety is as common as depression but it does differ from depression in symptomtology and presentation.

Genital secretions have different and complex meanings in South Asia and loss of these secretions (*Dhatu Loss*) is a concern for both men and women (Lambert, 1998). Vaginal discharge is common among South Asian women (Chaturvedi, 1988; Chaturvedi, Chandra, Sudarshan, & Issac, 1993a, Chaturvedi, Chandra, Issac, & Sudarshan, 1993b; Singh, Avasthi, & Pravin, 2001) and is named as "*Leukorrhoea"* (Patel,, & Oomman, 1999; Singh, Avasthi, & Pravin, 2001). Similarly Obeyesekre (1976) reports "*Dhatu"* concern present both in men and women in Sri Lanka.

According to him "*Dhatu"* is a whitest discharge associated with heat in the body, dizziness and pain in joints. General medical practitioners do not consider it a disease whereas Ayurvedic practitioners consider it as a serious illness leading to progressive weakness. In such cases herbal treatment and specific diet is recommended. "*Leukorrhea"* is considered to be a serious illness associated with mental tension (Dash, 1974).

Semen loss has been attributed to different modes and patients relate semen loss to nocturnal emissions, masturbation and sexual thoughts. Guilt around masturbation in young men further leads to semen loss (Avasthi, & Benerjee, 2002; Avasthi, & Gupta, 2002; Avasthi, & Nehra, 2000). Young men associate their physical and psychological complaints to passing of semen through nocturnal emission and masturbation which can cause mental and physical illness. Frequent sexual activity is also considered another important cause of semen depletion.

The fear of semen loss among these people is further authenticated by hoardings and advertisements about sexual problems in public newspapers and magazines. Such advertisements are placed in the inner cities and are mainly placed by quacks which add to fear and guilt among young men. Majority of these people get information about Dhat from friends, colleagues and relatives as well as information from posters, advertisements in media and those pasted on walls, magazines by quacks (Behere, & Nataraj, 1984; Bhatia, & Malik, 1991). Thereby majority consults traditional healers and quackes and there is a dilemma in these healers about treating young men who seem desperate to seek help (Wig, 1998).

It is important to consider the way Dhat Syndrome is diagnosed. Bottero (1991) explains that it is diagnosed directly and indirectly. In direct way, the patient himself notices a white discharge from his penis while urinating or defecating, or

discovers the stain on his undergarments / clothes. In indirect way, the doctor / professional diagnoses patient on the basis of a set of complaints about physical, mental weakness and persistent fatigue. He further asserts that indirect diagnosis of semen loss through complaints about weakness was far more common than the direct diagnosis.

The most salient feature in diagnosing Dhat Syndrome is an "over valued" concern about losing semen. Patients attribute his concern to whilst discharge in urine and loss of this valuable and vital fluid provokes anxiety in them. Besides anxiety, they present various somatic and psychological complaints (Carstairs, 1956) e.g. weakness, fatigue, palpitation, generalized aches and pains, poor sleep, poor concentration, headache, depressed mood, anxiety and loss of appetite (Brahmbhatt, 1998; Singh, 1985). Sexual dysfunctions e.g. impotence and premature ejaculation, fear of shrinking of penis is also reported in some patients (Edwards, 1983).

Wig (1984) argued that despite presentation of mental symptoms being significantly affected by cultural background, Dhat Syndrome is more common in the developing countries and has been labeled “culture bound”. ICD-9 (WHO, 1979) and DSM-III (APA, 1980) included psychosexual disorders which were most commonly reported in developing countries e.g. premature ejaculation and impotence. However, there were some specific problems such as Dhat Syndrome which though frequently reported in the developing countries did not fit into the existing classification systems. The syndrome contains multiple physical and mental symptoms which are attributed to involuntary discharge of semen in urine (Wig, 1983).

DSM-III (1980) did not include Culture Bound Syndromes (CBS’s) as a separate entity at the pretext that list of such syndromes is very long and therefore it

was hard to fit all these syndromes in the system. Considering physical and bodily complaints in Dhat Syndrome it was proposed to consider it a type of somatoform disorders. In DSM-III-R (1988), Dhat cases were considered under “undifferentiated somatoform disorder”. Moreover, since depression is considered and experienced as a physical illness in non-western societies, therefore Dhat could also be considered as a somatic manifestation of depression (Mumford, 1996).

Dhat Syndrome has been diagnosed as both Neurotic Disorder (F 48.8) and a Culture Specific Disorder (Annex 2) in ICD-10. It is described as "undue concern about passing of semen through urine". It has now been understood that “Culture Specific Disorders” are well matched with cultural beliefs and behaviors, therefore are not considered delusional. Annex 2 of ICD-10 includes other terms from India and China such as *"Dhat", "Jiryan", Sken Kuei*". These disorders are well described by anxiety and somatic complaints such as fatigue, aches and pains with a fear of semen loss (ICD-10, WHO, 1993). In the last three decades transcultural psychiatry has geared much interest and it entails cultural factors such as in form of its occurrence, symptom patterns (Avasthi, & Nehra, 2001).

Wig (1984) argued that diagnosis of Dhat Syndrome however, is not difficult because the patient very clearly expresses his extreme concern and worry about semen loss. Clinical practice is the guiding road for this syndrome. A classic case of Dhat Syndrome is the one who presents with salient and presenting complaint about extreme and exaggerated concern over passage of semen. Majority of the patients present with multiple somatic and psychological symptoms. Psychologically they are anxious, tense and depressed. Anxiety and depression may be the result or secondary feature of Dhat Syndrome (Wig, 1984). Considering its prevalence and significance in Indian culture, efforts have been made to devise assessment tools. An interview

schedule for assessment of Dhat Syndrome, Dhat Syndrome Interview Schedule (DSIS) has been developed to estimate the prevalence of Dhat syndrome in Indian male population (Sharan, Avasthi, Gupta, Mohanty, Gill, & Jain, 2003).

1.3.3 Significance of the Study

Sexual health is an important aspect and has serious implications for physical, psychological and social functioning of an individual. Dhat Syndrome also known as semen loss anxiety is characterized by preoccupation with semen loss and associated physical, psychological, sexual and genital symptoms (De Silva, & Dissanayake, 1989). Although semen loss has been paid much attention in the Indian subcontinent, it is not confined to Indian subcontinent (Bhattia, 1999; Wig, 1960). Dhat Syndrome has been referred to as a culture- bound sex neurosis of the East (Behere, & Nataraj, 1984; Chadda, & Ahuja, 1990; Malhotra & Wig, 1975), a culture-bound anxiety state (Bhugra, & Jacob, 1997; Levine, & Gan, 1995), a symptom of depression (Mumford, 1996) and hypochondiracal neurosis (Tan, 1980, 1981). Major classification systems i.e. ICD-10 (WHO, 1993) and DSM-IV (APA, 1994) have included Dhat Syndrome in the list of Culture Bound Syndromes (CBS's). There is also a controversy around Dhat Syndrome to be considered as a separate entity (Mumford, 1996) and whether it should be considered a Culture Bound Syndrome (Bhugra, & Jacob, 1997; Sumathipala, Siribaddana, & Bhugra, 2004).

Patients have been reported to present with various physical symptoms such as weakness, fatigue, palpitations, sleep disturbances (Behere, & Natraj, 1984; Bhatia, 1999; Chadda, & Ahuja, 1990; Singh, 1985) which they attribute to loss of semen. Patients with semen loss concern consult a number of healers (Akhtar, 1988)

including self styled “sex specialists”, ayurvedic specialists, venereologists and general practitioners (Behere, & Nataraj, 1984).

Despite having Dhat Syndrome been extensively explored phenomena and focus of researchers for the last several years, no formal assessment tool has been developed for the identification of Dhat Syndrome. Existing research has mainly relied on responses provided by those reporting at psychiatry departments. In an earlier research carried out in Lahore, Mumford used Bradford Somatic Inventory (Mumford, 1996) which contains only two items relating to men’s sexual health. Research done in Sri Lanka used a Symptom Data Sheet derived from semi structured interview (De Silva, & Dissanayake, 1989). Avasthi, Verma, Nehra and Das (1992) developed Sex Knowledge and Attitude Questionnaire (SKAQ) which assesses level of peoples’ knowledge, misconceptions and attitude towards sex. Sex Knowledge and Attitude Questionnaire (SKAQ) however does not assess manifestation of Dhat Syndrome. Sharan and colleagues (Sharan, Avasthi, Gupta, Mohanty, Gill, & Jain, 2003) have developed Dhat Syndrome Interview Schedule (DSIS). Interview schedule comprises of 13 items and was prepared in consultation with existing literature. Though it has passed through different phases of development but it has yet to be finalized and made available to the clinicians and researchers. The first major aim of the present research was to develop and estimate psychometric properties of Dhat Syndrome Symptom Checklist (DSSC) for Pakistani sample in simple Urdu and English language. Since it will be the first symptom checklist of Dhat syndrome, it will have immense importance for professionals working with Dhat Syndrome patients. This checklist will be of use both for clinicians and researcher alike.

Although Dhat Syndrome has been extensively described in literature in the Indian subcontinent (Malhotra, & Wig, 1975) particularly in India and Srilanka, no

systematic research has been carried out in Pakistan investigating different aspects of Dhat Syndrome. In the light of existing literature, it can be argued that semen loss is one of the major concerns among males reporting with the sexual problems; however this problem is usually kept secret especially in cultures like Pakistan. Thus, it is essential to investigate this issue among the male dominated society like ours where it is commonly believed that a male's sexual strength is the best way to prove his manhood and superiority.

Research on men's sexual health is essential from cultural perspective as well. It is important that perceived severity, symptoms, explanations about the causes, consequences, treatment seeking behaviors are understood. Such research will be useful in devising and implementing effective interventions because individual perception of disease will enable program planners to ensure that interventions make sense within a particular community's understanding of a condition or illness (Gernon, & Tazeem, 1996). Cultural factors are particularly important in Asian societies where community harmony and interdependence are valued to a great deal (Becker, & Kleinman, 2000). Despite sharing cultural values with the region, Pakistan is distinctly different from other countries for being a Muslim and conservative country. In Pakistan, generally people hold rigid and repressive views about sex and sexual issues are not discussed openly as taboos are linked to sex. In this context, indigenous attitudes toward sex and folk concepts about sex are also very important (Singh, 1985). Thereby cultural significance necessitates research in the area of men's sexual health in Pakistan. In Pakistan men's sexual health is dealt with the general cover term "*Mardana Kamzori* ". It is the most common term to describe men's sexual health problems. The term "*Mardana Kamzori Ka Ilaaj*" refers to treatment for diverse problems relating to sexual functioning such as impotence,

premature ejaculation and loss of semen. *"Mardana Kamzori Ka Ilaaj* " does not necessarily include treatment for dysfunctions but also caters the concerns generated by local myths pertaining to masturbation, thinning of the semen and wet dreams. It has been observed that the problems of men's sexual health have been publicized and promoted a lot under the slogan of *"Mardana Kamzoori Ka Ilaaj".*

Moreover, In Pakistan, it has been observed through clinical experiences of general practitioners, psychiatrists, anecdotal records of infertility specialists' clinic, out door departments of various psychiatric hospitals and from other health professionals that patients presenting with variety of symptoms have underlying concern of semen loss. The present research aimed to examine manifestation of Dhat Syndrome and its Physical and Psychological implications.

1.3.4 Objectives of the Study

Though present study had various objectives, below given are the main ones:

1. The first major objective of the present study was to develop an indigenous Dhat Syndrome Symptom Checklist (DSSC). This objective was mainly for the reason that despite Dhat Syndrome being well documented in the Indian subcontinent, so far there has been no formal assessment tool developed to examine symptom manifestation by Dhat Syndrome patients.
2. The second main objective of the present study was to examine demographic profile of patients with Dhat Syndrome in Pakistan. This objective was set on the basis of informal clinical observation which suggests that sexual health concerns particularly semen loss concerns are commonly reported by Pakistani men. Considering sex a tabooed area in Pakistan, there are no empirical systematic efforts investigating Dhat Syndrome.

3. The final and foremost important objective of the present study was to examine manifestation of Dhat Syndrome symptoms in Pakistan and to assess psychological and physical implications of Dhat Syndrome for the patients. This aim was set due to the reason that semen loss concern being commonly reported in different clinical settings, its implications for the sufferer have been ignored by the researchers in Pakistan.

1.3.5 Hypotheses

In the present study following hypotheses were formulated on the basis of existing literature and the researcher has also proposed hypothetical psychological model of Dhat syndrome:

1. Demographic profile of a Dhat Syndrome patient is a young, less educated man from low socio economic class and rural background.
2. Majority of Dhat Syndrome patients consult traditional healers such as Hakims and Homeopaths.
3. Dhat Syndrome is manifested in form of Physical, Psychological and Sexual symptoms.
4. Manifestation of Dhat Syndrome symptoms is predicted by Demographic characteristics and other related characteristics.
5. Dhat Syndrome patients experience somatic complaints, anxiety and depression.
6. Somatic complaints, anxiety and depression in patients are predicted by severity of Dhat Syndrome symptoms and demographic characteristics of the patients.

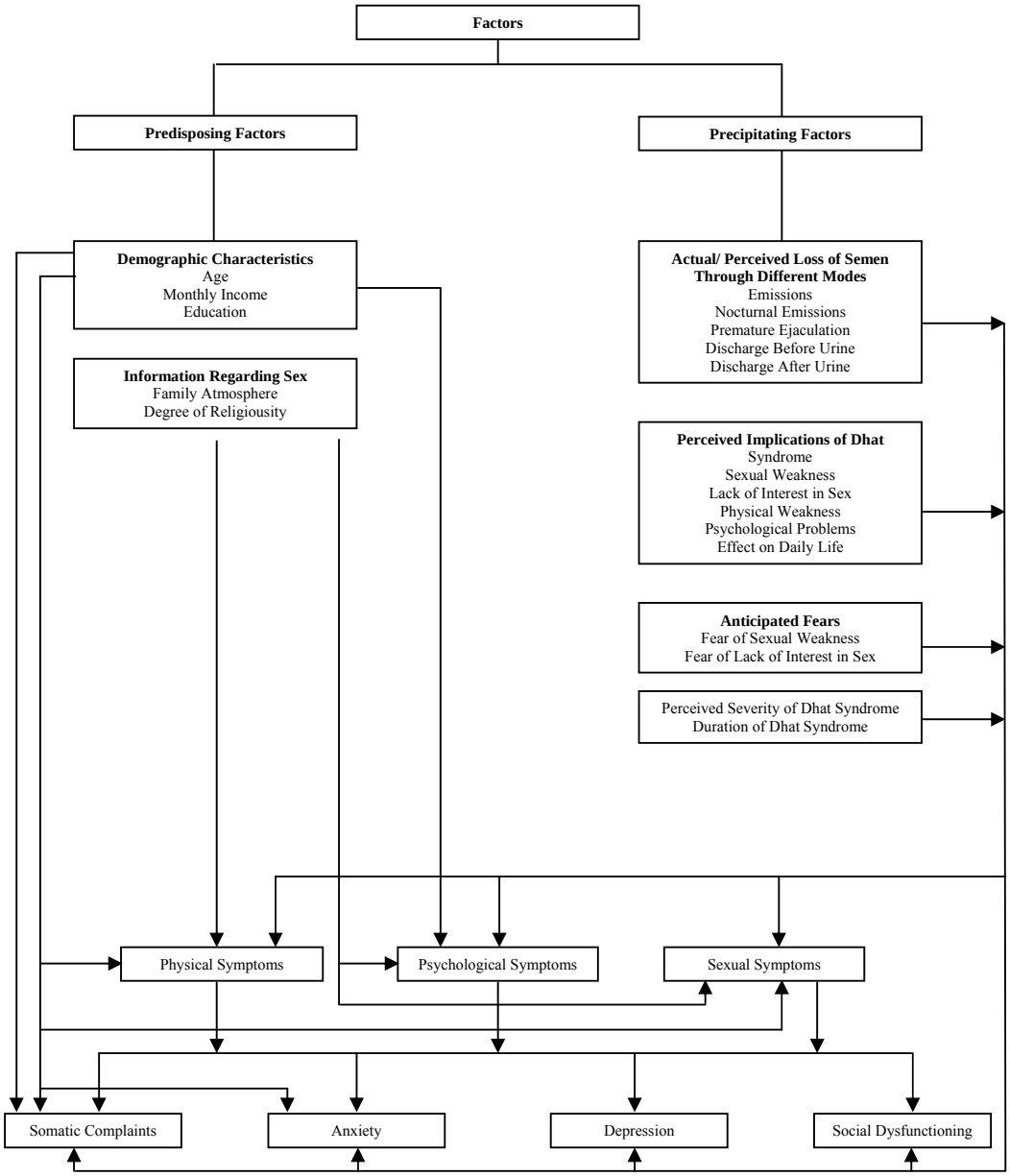

Figure 1: Hypothetical Psychological Model of Dhat Syndrome

CHAPTER 2

LITERATURE REVIEW

This section presents an overview of researches on Dhat Syndrome. Dhat Syndrome is considered as a Culture Bound Syndrome and neurosis of the orient (Malhotra, & Wig, 1975) and most of the researches are carried out in the Indian subcontinent, mainly in India and Sri Lanka. However, a little research attention has also been paid by some western researchers. Research in sexual health in general and Dhat Syndrome in specific has been carried out in India and Sri Lanka. In Pakistan, sex is considered a tabooed area and there is no formal sex education. There is no empirical research on sexual health in Pakistan therefore literature reviewed in below given section is mainly based on researches conducted in India.

2.1 Demographic Characteristics of Dhat Syndrome Patients

Demographic profile of Dhat Syndrome patient is a less educated, young person from poor socioeconomic status and from rural background. Carstairs (1956, 1961, 1973) in his preliminary research conducted in India found that most (52% - 66.7%) of the cases of Dhat Syndrome were from rural areas and conservative families holding rigid views about sex (69% - 73%). Behere and Nataraj (1984) aimed to evaluate demographic correlates of Dhat Syndrome in India. 50 consecutive patients presenting with Dhat discharge as a major complaint were studied. 69% of the patients ranged in ages of 16-25 years and 52% were married. Patients were either from average (58%) or lower socioeconomic class (42%). Majority were students (46%) and with agricultural background (28%). Duration of semen loss ranged from 3 months to more than a year with the majority (63%) having it for more than a year.

Singh (1985)'s study with those reporting with Dhat Syndrome, impotence and premature ejaculation (N = 50) revealed that mean age of patients was 26 years with the age at onset ranging from 16-25 years. Majority was either illiterate or educated up to 10^{th} class and only 10 % patients were educated up to post- graduate level. In De Silva and Dissanayake (1989)'s study on various manifestations of semen loss syndrome in Sri Lanka, mean age of the patients was 25 years and majority of the patients were from lower middle class.

Chadda and Ahuja (1990) in their study on psychiatric patients complaining of semen loss had majority being adolescents and younger adults. They were from families of manual workers, shop owners, farmers and clerical employees with low socioeconomic status. Half of the patients were married and majority was either illiterate or educated up to primary level. Likewise, patients in Bhatia and Malik (1991)'s research on patients with Dhat Syndrome, impotence and premature ejaculation consulting psychiatric outdoor, were between the ages of 20-38 years. Age at the time of onset ranged from 16-24 years. Of 144 patients, 78 were unmarried and 66 were married. Majority had some territory education and few (N = 12) had postgraduate education or professional training. In another study on patients with sexual disorders, Bhatia, Chaudhry and Shome (1997) reported an average age of 21.6 year and majority being unmarried (80%). 25% of patients in their sample were illiterate and 65% were educated up to high school.

Khan (2005, also see appendix D) in her exploratory and pioneering research on Dhat Syndrome in Pakistan examined demographic characteristics of patients reporting with semen loss as the major concern. Data of 1777 patients reporting at different professional's clinics was gathered. Majority of the patients were consulting Hakims and Homeopaths (50%, 24% respectively). The patients ranged in ages from

12-65 years with mean age of 24 years. Majority of the patients were single (75%), educated up to matric (67%) and had monthly income less than 3000 Rupees (56%). 66% were concerned about semen loss for the last 6 months and 14% had Dhat Syndrome for more than 2 years. In a recent study, Dhikav and colleagues (Dhikav, Aggarwal, Gupta, Jadhav & Singh, 2007) examined depression in Dhat Syndrome patients. Their sample ranged in ages from 20 – 40 years with mean age of 29 years. Majority of their sample was unmarried and educated up to class 5th.

The above review of researches pertaining to demographic characteristics of Dhat Syndrome patients, it can be concluded that a typical profile of a Dhat Syndrome patient is a young, less educated man from lower socio economic class.

2.2 Manifestations of Dhat Syndrome

Patients with semen loss anxiety are reported to manifest a great variety of physical, psychological and sexual symptoms which are attributed to loss of vital essence through semen in South Asia (Bhatia, & Malik, 1991; Paris, 1991). In the below given section, research pertaining to manifestation of symptoms by Dhat Syndrome patients is presented.

Clyne (1964) conducted a study in the area of South Hall an industrial area in the borough of Middlesex, London. Residents of this area are mainly Indian and Pakistani immigrants. Some young men who had their wives in India reported promiscuous problems, some with gonorrhea and syphilis. Other major complaints in Indian patients were weakness, nocturnal seminal emission and impotency. They held the belief that semen plays a major role in their lives and strength. In comparison to a local British who complained of backache, pelvic troubles an Indian immigrant would complain of feeling of weakness and sexual concerns.

Nakra, Wig and Verma (1978) studied 150 consecutive patients reporting with primary complaint of disorders of potency at a psychiatric clinic. Main objective of their study was to investigate incidence, socio-economic correlates and clinical features of male potency disorders. In depth sexual history was taken and clinical assessment of sex-drive was carried out. Patients with severe depression, psychosis, organic syndrome and sexual perversion were excluded. The participants ranged in ages of 15-50 years (M = 26.8 years) and majority were from rural background and educated up to middle or high school. Two third of them had been masturbating from very young age (M = 16 years). Majority among married participants had premarital sexual relations. Guilt feelings associated with masturbation were reported by 43%. A vast majority was having nocturnal emissions (95%) from the age of 16 years and 69% had guilt associated with it. Twenty seven percent reported Dhat Syndrome with or without impotence and premature ejaculation and 64% perceived semen loss harmful to health.

In a Taiwani study, Wen and Wang (1980) recruited 87 patients from a Urology clinic. Majority among their participants had sexual neurosis along with Shen-K'uei Syndrome. One third of the patients were from lower socioeconomic class and they reported masturbation, nocturnal emissions, depression, anxiety and somatization. Somatic symptoms included dizziness, fatigue, backache, insomnia, weakness and physical thinness. Four-fifth of the patients attributed their problems to masturbation.

Behere and Nataraj (1984) in their study with patients presenting with semen loss as the major concern at a psychiatry department in India, found physical weakness (68%), hypochondriasis (46%), anxiety (38%), impotence (26%) and premature ejaculation (22%) as major problems associated with Dhat. Singh (1985)

in his research recruited 50 patients presenting with Dhat Syndrome, impotence and premature ejaculation from psychiatric outdoor of a hospital in Patiala (India). Patients with major psychiatric disorders were excluded. He assumed that since semen loss is considered to be synonymous to loss of some thing precious and therefore would produce a sense of grief and depression. Extensive case history and mental state examination of each patient was carried out. Impotence was reported by 24%, premature ejaculation by 14% and Dhat with urine by 40%. Patients reported variety of symptoms including somatic symptoms (73.8%), headache (68.8%), depressed mood (62.5%), anxiety (51.6%) and loss of appetite (43.8%). Singh (1985) argued that majority of these patients suffered from underlying depression. However, 52% of the patients were diagnosed with depressive disorder as an associated diagnosis.

De Silva and Dissanayake (1989) investigated various manifestations of Semen Loss Syndrome in Sri Lanka. They also explored sources of beliefs held regarding semen loss, effects of semen loss and patterns of treatment sought for Dhat Syndrome. The sample included 38 patients from a psychiatric clinic of Colombo General Hospital. Patients with psychiatric disorders and organicity were excluded. Duration of semen loss ranged from 6 months to 20 years (M = 5 years). All patients reported excessive semen loss and were concerned about it. Nocturnal emission was the commonest mode of semen loss (63%), followed by masturbation (58%), loss with urine (37%), loss via homosexual and heterosexual activities (29%, 5% respectively). Majority reported more than one mode of semen loss with major combination of nocturnal emissions and masturbation. Frequency of masturbation ranged from 1-5 times a week and frequency of nocturnal emissions was reported to occur once every night to once a week.

Patients manifested four types of symptoms i.e. somatic, psychological, sexual and genital. Fifty percent of the patients reported symptoms in all four categories. Somatic symptoms included fatigue, general weakness, loss of weight, palpitations, localized aches and pains, tremor and poor sleep. Parathesiases, retardation of growth, diarrhea, excessive sweating, anemia, headaches and loss of hair, aches and pains (not localized), blurred vision and tenderness were reported by one third of the patients. Psychological symptoms included loss of confidence, nervousness, loss of enthusiasm and free floating anxiety. 33% reported poor memory and depersonalization. Depression and suicidal ideation was reported by less than 33%. Anxiety regarding sex / marriage, premature ejaculation, erectile difficulties and decreased libido were among the sexual symptoms reported by the patients. In genital category, symptoms included penile discharge, burning sensation in urine, smallness of penis, smallness of testes, enlarged testes, pain in testes, and shrinking of penis. Few patients had developed psychiatric problem such as hypochondriasis, anxiety, stress reaction and sexual dysfunctioning. Majority had sought treatment earlier and it was mainly Ayuverdic and Homeopathic and very few had consulted allopathic practitioners. This study presented a comprehensive picture of semen syndrome, its manifestations and underlying beliefs which highlighted the significance of cultural factors.

In a study by Chadda and Ahuja (1990) psychiatric patients complaining of passing Dhat in urine were assessed over a period of 6 months. Fifty two patients were included and most of them were adolescents and younger adults. Apart from psychiatric assessment they were enquired about causes of symptoms and effects of Dhat Syndrome on them. Urine test was carried out for albumin, sugar, phosphates, cytology and urine examination was normal in majority. More than 80% of them

complained of somatic complaints such as body weakness, aches and pains. Half of the patients were experiencing depression and more than half were experiencing anxiety. Patients attributed all these complaints to passing of dhat in urine. Masturbation, pre martial and extra marital relationships were considered as the reasons of semen loss as well as other symptoms. Semen loss was considered as a reason of premature ejaculation, erectile dysfunction and impotence by almost half of the patients.

Bhatia and Malik (1991) recruited 144 consecutive male patients complaining of dhat syndrome, impotence and premature ejaculation attending psychiatric outdoor over the period of 4 years (1985-1988). Dhat Syndrome patients' thorough examination including physical examination, complete blood test, urine and stool test, semen analysis, blood sugar, venereal disease, X-ray chest and abdominal test were carried out. Psychological examination included detailed sexual and psychiatric history as well as mental state examination. The patients with history of physical, psychiatric disorder and drug abuse were excluded from the study. Most of the patients (N = 93) complained of Dhat as the main complaint, impotence was found in 21%, premature ejaculation in 15%, Dhat Syndrome with impotence in 8%, Dhat Syndrome with premature ejaculation in 15%. Psychiatric disorder was found in 69%, depression in 39.5%, anxiety in 21%, psychosis in 6% and phobia in 2%.

A host of symptoms were manifested by Dhat Syndrome patients including weakness (71%), fatigue and palpitations (69%), insomnia (62%), loss of interest in life (62%), sad mood (58%), loss of concentration (56%) headache (54%), feelings of worthlessness (54%), gastric problem (51%), dizziness (46%), loss of appetite (46%), forgetfulness (46%), masturbation (38%) constipation (35%), guilt feelings (35%) and suicidal ideation (19%). Patients perceived Dhat as semen (39%), pus (19%), sugar

(13%), and concentrated urine (13%). 90% patients met ICD criteria for psychiatric diagnosis with neurotic depression being more common (39.5%). Patients receiving antidepressants and anti anxiety showed significant improvement after four weeks compared to those who only received counseling.

To examine consequences of Dhat in urine, Chadda (1995) conducted a comparative case control study on Dhat patients and person with neurotic and depressive symptoms. He recruited 100 patients from a psychiatric out-patient clinic of a teaching hospital in India. Sample constituted equal number in two groups. Half of the patients reported depression, 32% reported somatic complaints and 18% reported anxiety. In neurotic and depressed group, 54% had depression, 30% anxiety and 16% had somatic complaints. It was concluded that Dhat Syndrome patients experienced symptoms of depression and anxiety comparable to the patients with neurotic distress.

Bhatia, Thakkur, Chadda and Shome (1992) presented a case study of a 26 years old patient with Koro. He was married, laborer and uneducated man. He complained of penis shrinking, weakness, fatigue, sleeplessness, worthlessness and sad mood as a result of passing dhat in urine for the last few months. He was treated with amitriptyline at night. After 2 weeks follow up his mood improved and his concern over shrinking of penis decreased. After 3 months follow up all his complaints disappeared which suggested that it was a form of culture bound sexual neurosis manifested in form of various symptoms.

Mumford (1996) presented a controversial explanation of Dhat Syndrome and argued in his study that Dhat Syndrome is not a separate entity but is manifestation of other emotional problems particularly depression. In his study, patients were recruited from a medical outdoor in a public sector hospital in Lahore (Pakistan). 600

literate patients were included and Bradford Somatic Inventory (BSI) was used. Dhat complaint was identified in 394 men and among those 30% marked Dhat items on Bradford Somatic Inventory, 14% reported having Dhat Symptom for more than 15 days. Men with Dhat reported more symptoms on Bradford Somatic Inventory (BSI) than those who did not have Dhat.

Another set of 60 psychiatric patients was recruited from the same hospital and diagnosis was made using DSM-III -R. One third of the patients endorsed on Dhat items in Bradford Somatic Inventory (BSI). Among those having dhat complaints 30 % had also been experiencing it for more than 15 days. Dhat symptoms correlated strongly with Bradford Somatic Inventory (BSI) items such as erectile difficulty, burning sensation in urine, tiredness, lack of energy and weakness. Patients with Dhat also reported more depression compared to those who did not. Though socioeconomic correlates were same in two groups but patients complaining dhat were relatively young.

To examine various biological correlates of Dhat Syndrome, Bhatia, Sandeep and Shome (1997) recruited forty patients reporting at a psychosexual clinic in Delhi. Patients with primary complaints of semen loss, impotence and premature ejaculation were included and those with history of any psychiatric disorder and drug abuse were excluded. Socio-demographic details of the patients, urine examination routine as well as morning culture was taken. Extensive physical examination and psychological assessments were carried out. Patients' mean age at the time of onset was 20 years. Semen loss was reported through nocturnal emissions, masturbation and sexual intercourse. The frequency of Dhat ranged from once / twice per day to once a week. 67.5% reported sexual dysfunction whereas psychiatric co-morbidity was present in

75%. 25% of the patients complained of ejaculatory impotence, 12.5% of premature ejaculation and 37.5% had mixed anxiety and depression.

Bhatia (1999) undertook a study on Culture Bound Syndromes (CBSs) in patients attending psychiatric outdoor in a teaching hospital. 60 patients with different Culture Bound Syndromes (CBSs) were included. It was reported that among all Culture Bound Syndromes (CBSs), Dhat Syndrome was the most commonly reported (76.7%), possession syndrome was reported by 13.3% and Koro was reported by 5%. Three patients with Dhat Syndrome had sexually transmitted diseases, 11 patients were experiencing anxiety and depression and hypochondriasis was present in 3 patients.

Perme and colleagues (Perme, Ranjith, Mohan, & Chandrasekaran (2005) conducted a study on patients with Dhat Syndrome (N = 32) reporting at a psychiatric clinic of a hospital in South India. These patients were referred from a medical outdoor with unexplained complaints of Dhat Syndrome. The control group (N = 33) was recruited from the same clinic and they screened to rule out Dhat Syndrome, depression and anxiety. Bhatia and Malik (1998)'s guidelines were used to assess patients presenting with primary complaint of semen loss through nocturnal emissions, masturbation, sexual intercourse and passing of semen before and after urine. Somatization Screening Index, Illness Behavior Questionnaire and Somato Sensory Amplification Scale, Whitley Index and Revised Chader Fatigue Scale were used for assessment. Patients with Dhat Syndrome scored significantly higher than control group on hypochondriacal beliefs, abdominal problems, somatic complaints and fatigue. Major limitations of this study were the smaller sample size and scales used were not validated for Indian population.

In order to examine prevalence and treatment of depression in patients with Dhat Syndrome, Dhikav and colleagues (Dhikav, Aggarwal, Gupta, Jadhavi, & Singh, 2007) assessed Dhat Syndrome patients. Using DSM-IV diagnostic criteria, assessment for psychiatric disorders, drug abuse and depression was carried out. Hamilton Depression Rating Scale was also used for the assessment of depression. Sixty six percent of the patients met DSM -IV diagnostic criteria of depression. Depending on the severity of depression, antidepressants and counseling were used for treatment. Dhat Syndrome patients with depression showed significant improvement with antidepressants and counseling. This study concluded that depression was common in Dhat Syndrome patients. However, it can be argued that since these patients were mainly psychiatric patients therefore depression could be secondary to Dhat.

Eighteen male patients presenting with Dhat Syndrome at a Dermatology department were studied by Morrone and colleagues (Morrone, Nosotti, Tumiati, Cianconi, Casadei, & Franco, 2002). The patients ranged in ages between 20-33 years and were from Bangladesh (N = 12) and India (N = 6). They presented with symptoms of fatigue and defused somatic symptoms and physical causes for patients' symptoms were ruled out by the physicians. Dhat Syndrome patients manifested various symptoms including somatic, social, psychological, cultural and religious and they attributed their symptoms to semen loss resulting from masturbation, nocturnal emissions and passing of semen with urine.

2.2.1 Manifestation of Dhat Syndrome in Women

Though Dhat Syndrome is commonly reported in men, there is evidence to suggest its presence in women. In a study conducted in a psychiatric out patient

clinic, it was found that 53% of females with psychiatric disorders held belief that white discharge from vagina was harmful to their health. They held whitish discharge responsible for their somatic symptoms. It was also revealed that in many female patients vaginal discharge had same notion as loss of Dhat in men (Chaturvedi, et.al., 1993b).

In a single case study, Singh, Avasthi and Pravin (2001) reported Dhat Syndrome in a 23 years old female. She belonged to middle socioeconomic class with a conservative family background and was educated up to matric. The patients' demographics and presentation all fitted well into typical profile of a patient with Dhat Syndrome. She reported to have vaginal wetness from the age of 20 years with the thoughts of sexual intercourse. She got married at the age of 22 years and she used to be anxious about sexual intercourse despite having desire for it. She reported pain during sexual intercourse, and weakness which was attributed by her to wetness during sexual intercourse. Over time, her pain during sexual intercourse decreased but she still experienced weakness and sadness. Her ability to work was also minimized due to physical weakness. She consulted gynecological clinic and physical examination revealed no physical pathology or infection. Therefore, she was referred to psychiatric clinic where she was diagnosed with Dhat Syndrome.

She reported weakness, aches, pains, headache and poor concentration and attributed her symptoms to vaginal wetness and also expressed extreme concern over losing vital fluid. She had no history of masturbation or pre marital sex and considered it shameful and painful activity. Thorough assessment indicated that she lacked knowledge about sex, masturbation, sexual desire, anatomy and physiology of female reproductive system.

A study was carried out by Trollope- Kumar (2001) in Uttar Pardesh, India both on men and women. In his clinical experience, the researcher observed that many men were consulting medical professionals due to semen loss through involuntary nocturnal emissions or passing of semen through urine. They would report physical complaints such as headache, dizziness and weakness. Majority consulted Ayurvedic physicians for herbal and dietary treatment of semen loss. These men also reported various stresses such as employment crises and marriage issues.

The women attending the hospital had the most common concern of "*Leukorrhea"* (vaginal discharge) also known as "*Safed Pani"* (white water) in North Central India. The women complaining of "*Safed Pani"* were experiencing somatic complaints including heat in hands, dizziness, backache and weakness. Majority of such women had little evidence of infection and the discharge they complained of was normal physiological discharge. They attributed physical weakness to loss of "*Safed Pani"*. They had been seeking Ayuvedic treatment including herbal tablets, taking care of personal hygiene and rest. Ayuvedic specialists named it as *"Dhat Rog*" and related it to heat in the body. "*Leukorrhea"* was considered a distress of heat (Nichter, 1981b). Local "*Dais*" (lady health workers) believed that one drop of "*Safed Pani"* stems from 100 drops of blood. "*Safed Pani"* is considered vital bodily fluid and essential for health.

Chaturvedi (1988) studied 70 women seeking psychiatric treatment for somatic symptoms. Half of these women reported white vaginal discharge and were depressed. It was referred to as psychasthenic syndrome and synonymous to Dhat Syndrome. He found link between vaginal discharge and mental health concerns. Similarly in another study of perception of whitish discharge among men and women, Bang and Bang (1989, 1996) found that both men and women perceived it as "*Dhatu"*

loss and a major health concern. They attributed physical weakness to whitest discharge. Patel and Oomman (1999) in their study revealed that symptoms associated with "*Leukorrhea"* were similar to depression especially in South Asian women.

2.3 Perception of Dhat Syndrome

Semen conservation has a long history and from the ancient times losing semen is detrimental and its conservation is considered beneficial for mental and physical well being. Beliefs about the implications of semen loss have been reported in different cultures. In China Shin-k'uei (Wen, & Wang, 1981), in the Indian sub-continent Dhat Syndrome (Carstairs, 1956, 1973; Edwards, 1983; Malhotra, & Wig, 1975; Neki, 1972a, 1972b) and in Sri Lanka similar condition was referred by Obeyesekere (1976). Sri Lankans attribute this condition to Ayurvedic medical tradition. Ayurvedic medicine considers semen very precious and that its loss has adverse effect on well being and sexual health of an individual (Bhugra, & Buchanan, 1989; Singh, 1985). Kulanyagam (1979) conducted a study in a psychiatric setting and identified a cluster of symptoms in single young men, and the symptoms included main concern of semen loss through masturbation and / or nocturnal emissions. Sixty two percent patients perceived that Dhat Syndrome had adverse implications for them.

In Carstairs' (1973) study, a vast majority (68 - 87%) believed that semen loss was harmful to physical health. Malhotra and Wig (1975) examined attitude of common men towards semen loss through nocturnal emissions, its causes and management. Study was carried out in India and included 175 men recruited through random sampling procedure. Participants ranged in ages between 30-50 years and were assessed using Semi Structured Interview and Standardized Vignette of Night Emissions (Malhotra, 1972). Among those with lower socio-economic status,

majority considered nocturnal emission a physical abnormality. Most of them believed that semen loss was harmful and it leads to multiple problems. Perceived causes of nocturnal emissions were bad company, increased interest in sex, sexual thoughts and exposure to pornographic material. Over eating and masturbation were considered as major causes of semen loss. To prevent semen loss, 22% proposed avoidance of bad company, masturbation and pornographic material. Men from high socioeconomic class were more expressive about sex. Dwivedi (1979) examined gender differences in attitude and sexual behaviors of university students in India. In his study 55% males and 12% female students were from rural background and majority was from middle class. Among male students, problems reported were nocturnal emission (44%), weakness (17%), premature ejaculation (14%), and excessive masturbation (5%). Female students reported weakness as their main problem and they attributed it to erotic ideas and sexual arousal.

Dewaraja and Sasaki (1991a) compared Sri Lankan and Japanese students on attributes and beliefs about semen loss. Sample comprised 254 Sri Lankan and 516 Japanese under graduate students. The results indicated that Sri Lankan students held more negative attitudes and beliefs about semen loss compared to their Japanese counterparts. They also recruited 35 patients from Sri Lanka presenting with semen loss and attributing their somatic complaints to semen loss. Masturbation, nocturnal emission and homosexuality were considered as the cause of semen loss. Very few attributed semen loss to heterosexual activity. Japanese students attributed symptoms of weakness to stress and over work. These results indicate that culturally held negative attitudes and beliefs contribute to high incidence of semen loss in Sri Lanka and these attitudes play a vital role in manifestation and expression of pathological symptoms in a specific culture. They also wanted to compare Dhat Syndrome

patients from both countries but they were unable to recruit Dhat Syndrome patients from Japan.

Behere and Nataraj (1984) carried out a study in the department of psychiatry in Varanasi, India, recruited 50 consecutive patients presenting with major complaint of dhat discharge. Duration of semen loss ranged from 3 months to more than a year with the majority (63%) having it for more than a year. 74% viewed Dhat as a whitish discharge through urine, 6% perceived it as night emissions and 20% as a combination of both.

In a Sri Lankan study, De Silva and Dissanayake (1989) explored different beliefs held regarding semen loss and sources of such beliefs. They found that the patients held strong beliefs regarding semen loss having adverse effect on bones. Their beliefs about semen loss had developed avoidance from marriage. Hot and spicy food was considered as a cause of Dhat Syndrome. Their beliefs were generated from friends, relatives, Ayuverdic medicine, literature and newspapers. Advertisements and propagation about value of semen through literature and lack of sex education had further strengthened their beliefs.

Bhatia and Malik (1991) conducted a study on patients with sexual disorders and Dhat Syndrome. Their study included 144 patients from psychiatric outdoor. They examined patients' beliefs about causes and treatment of Dhat Syndrome. 45% of the patients believed that masturbation or excessive coitus was the cause of dhat, 19.3% attributed it to venereal disease, 16% to urinary infection, 9.7% to overeating, 6.5% to constipation, 6.5% to insomnia and 3.2% considered it a genetic disease. 65% patients with Dhat believed that tonics should be used for treatment, 19.3% considered B-Complex tablets and 27% thought injections as effective treatment.

Deepak Charitable Trust (DCT, 1998)'s project explored sexual health problems in HIV/AID's patients. Major concerns among these patients were masturbation, thin semen, impotence and nocturnal emission. Majority of the men were from lower class. They had history of masturbation, nocturnal emissions and coitus which resulted in semen loss. They attributed masturbation and nocturnal emission to sexual thoughts. Though masturbation was described by them as pleasant but it also made them anxious for its perceived ill effects on their physical and sexual health. Thinness of semen was a major concern and it was perceived as the cause of impotence.

Verma and colleagues (2000, 2001, 2003) carried out a series of general population based studies exploring different aspects of male sexual health in slum areas of Mumbai. In one study they examined cultural perception and categorization of male sexual health problems. Majority of their participants were from low socioeconomic strata. 51% men were illiterate and they reported sexual problem more than educated people. 68% of respondents were in a habit of regular gambling and drinking and they reported more sexual health issues. Main concern was poor quality and quantity of semen, impotence, erectile dysfunction and premature ejaculation. 90% of respondents perceived premature ejaculation a serious health issue and a cause of physical weakness. 86% of men felt that "*Garmi* "(heat) causes burning sensation in penis, semen discharge and swelling of penis. Masturbation, thin semen, bent penis, burning sensation in urine, discharge and "*Kamjori"* (sexual weakness) were reported as major sexual problems and 43% reported more than one problem. Sexual problems were reported more by younger group and sexual health issues decreased with age. Religiosity showed negative relationship with sexual health issues. A high proportion of men were seeking treatment for "*Garmi* "(61.7%), "*Kamjori*"(34.5%) and burning

sensation in urine (27.7%). Ayurvedic was considered as most preferred treatment for premature ejaculation, quantity and quality of semen, wet dreams, impotence and sexual weakness.

In another study they examined beliefs concerning sexual health problems and treatment seeking pattern among men in an Indian slum community. Their sample comprised of young adult males mainly from low socioeconomic status. Majority of the participants were Muslims, either illiterate or was educated up to matric. They gathered information about knowledge, attitude and perception of sexual health problems using semi structured interviews. Moreover information was collected about treatment seeking behaviors i.e. type of treatment, number of treatments been sought, money spent on treatment and perceived effectiveness of the said treatment. It was found that sexual weakness and semen loss concern were major problems among sexual health problems. Over two third of men considered wet dreams as an important health issue and that it had serious implications. 40 % thought wet dream once a month as normal and 1/3 considered wet dream once a weak as abnormal. Wet dreams were perceived to be caused by suppression of sexual desires by the majority (78%). Only 22 % thought allopathy as possible treatment for wet dreams. "*Kamjori* "(sexual weakness) was reported by the majority and was considered to cause number of problems i.e. impotence, adverse effect on quality and quantity of semen and infertility.

A vast majority (89%) reported using hand practice (masturbation) since an early age and they related it to semen loss. Masturbation was considered damaging to health, shape of penis and quality of semen. They attributed physical and sexual weakness, and impotence to masturbation. Semen loss held sole importance for them and frequent masturbation was considered to have adverse effect on quantity and

quality of semen. Consumption of hot and spicy food was perceived to produce excessive heat in the body and that it had resulted involuntary loss and thinning of semen. 90% considered premature ejaculation a serious health issue. Excessive sexual desire and coitus, thinness of semen, masturbation, drugs/smoking, and spicy food were perceived as causes of premature ejaculation.

Men in their study considered "*Kamjori"* (sexual weakness) as the most worrisome and it was believed to result from frequent sexual intercourse and excessive masturbation. "*Kamjori"* (sexual weakness) was considered to have adverse consequences such as reduced sexual desire, giddiness, early discharge, loss of semen, burning sensation in urine and dark circles around eyes. 42% men considered Ayurvedic treatment effective for semen loss and 1/5 reported that allopathic treatment was effective for wet dreams. 43.7% men reported wet dreams, weakness, white discharge, premature ejaculation, masturbation, erectile problems and poor semen quantity and quality as major concerns. Single and those not living with their wives were two and half time more likely to develop non-contact problems.

In a satellite session at the 6th ICAAP in Australia on male semen loss concern in the perspective of HIV, Deepak Charitable Trust (Collumbien, Das, & Bohidar, 2001), findings pertaining to beliefs about semen loss and its effects on health, perception of semen loss across cultures were shared. Semen loss was reported to be the most important concern in men. Nocturnal emissions and masturbation were the main sources of "sexual release" pre marriage among the majority of males and majority of them were worried about ill effects of masturbation and nocturnal emission particularly thinness of semen. It was perceived that semen loss leads to weakness and loss of sexual strength.

Lakhani, Gandhi and Collumbien (2001) conducted a study on perceived consequences of masturbation and nocturnal emissions among 50 unmarried young men selected through snowball sampling. They also examined link between semen loss, anxiety and sexual risk behaviors. Twenty two were from rural background, 16 were migrants working in diamond industry and 12 were prison inmates. Masturbation and sexual performance anxiety were major concerns for health and masturbation was believed to have harmful consequences. More than half of the participants experienced anxiety regarding sexual performance and impotence. Young men believed that semen loss through nocturnal emissions and masturbation was more harmful than coitus. Masturbation was considered to cause weakness and thinness of semen (24%), semen loss, illness, memory loss (14%), erectile dysfunction and shrinking of penis (17%), impotence and infertility (12%). 13% believed that it was sinful act and thereby brings bad name to those practicing it.

CHAPTER 3

METHOD

The present research comprised of a series of studies which aimed to: a. Identify the potential professionals with whom Dhat Syndrome patients would contact; b. Examine Demographic Characteristics of Dhat Syndrome Patients; c. Develop Dhat Syndrome Symptom Checklist (DSSC); d. Examine Psychometric Properties of Dhat Syndrome Symptom Checklist (DSSC); e. Revision of DSSC; f. Examine Reliability of Dhat Syndrome Symptom Checklist (DSSC) and g. Examine Physical and Psychological Implications of Dhat Syndrome. This section presents detailed methodology of five empirical studies.

3.1 Study 1: Identifying Professionals and Demographics of Potential Dhat Syndrome Patients

Study one had two aims: a. identifying the professionals to whom potential Dhat Syndrome patients contact for advice and treatment; b. to examine demographic characteristics of patients reporting with semen loss concern. In order to identify professionals seeing Dhat Syndrome patients, newspapers and existing literature were consulted.

3.1.1 Material and Method

Advertisements by different professionals related to health in general and men's sexual health in particular appearing in daily national Urdu newspapers and evening newspapers over a period of one month were collected. The news papers included for content analysis were "Roznama Nawa-i-Waqat", "Roznama Jung", "Khabrain", "Nai Akhbaar", "Inqalaab". Content analysis of advertisements related to matters pertaining to sex suggested that in daily national newspapers 42 % of the

total health related advertisements (298) were related to men's sexual health. Fifty four percent of sexual health advertisements were by the Hakims, followed by Homeopaths (18%), Infertility Specialists (16%) and General Medical Physicians (10%). Total health related advertisements appearing in private evening newspapers were 298 and among those 76% were related to men's sexual health. Majority of sexual health advertisements were by Hakims (75%) followed by Homeopaths (30%), Medical Professionals and Infertility Specialists (15% each).

Consultation of relevant literature revealed that majority of men with sexual concerns was reporting at psychiatric clinics and sexual health clinics. Most of the literature refers Ayurvedic professionals being the most popular for sexual health problems (Avasthi, Verma, Nehra & Das, 1992; Behere & Nataraj, 1984; Bhatia & Malik, 1991; Bottero, 1991; Dash, 1974; De Silva & Dissanayake, 1989; Edwards, 1983; Malhotra & Wig, 1975; Obeyesekere, 1976, 1977; Paris, 1992; Singh, 1985; Thakkur, 1974).

Content analysis of newspaper data as well as consultation of literature suggested that Dhat Syndrome patients report to Hakims (traditional healers, comparable to Ayurvedic), Homeopaths, General Physicians, Psychiatrists, Infertility Specialists and Psychologists. These professionals were contacted for examining demographic characteristics of Dhat patients, symptom generation for developing Dhat Syndrome Symptom Checklist (DSSC) and data collection for subsequent studies.

The following selection criterion was set for inclusion of the professionals in different studies:

1. Licensed professionals i.e. those who held professional degree in their respective domain e.g. Hikmat, Homeopathy, General Medicine and Infertility.

2. Those professionals who claim to provide intervention for sexual problems and had been advertising and publicizing to attract patients with sexual concerns.

3. Had a minimum 10 years of practicing experience.

3.1.2 Participants

Seventy health professionals including Hakims, Homeopaths, General Practitioners, Psychiatrists, Psychologists, and Infertility Specialists in Lahore were approached for data collection. Fifty eight of them returned the completed record forms which made an overall response rate of 83%.

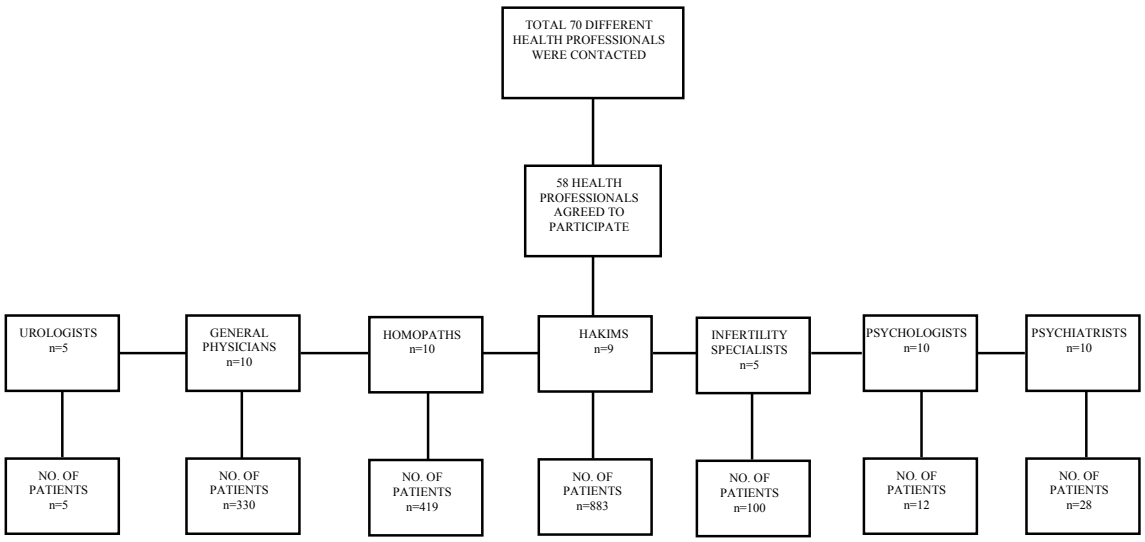

Figure 2. Flow chart indicating distribution of professionals and patients

3.1.3 Procedure

The professionals were provided with ICD-10 criteria of Dhat Syndrome (Appendix A) for inclusion of the patients in the study. In order to make an estimate of demographic characteristics of Dhat Syndrome patients, demographic information record sheet enquiring about age, marital status, monthly income, education level and duration of the onset of the problem was prepared by the researcher (Appendix B).

After fixing time with professionals, the researcher visited them to explain nature of the study and seek their consent for participation (Appendix C). They were assured by the researcher that the obtained information about their patients will be kept confidential and will be only used for the research purposes. The researcher handed over demographic information record sheets to the professionals and the professionals were requested to complete record sheets for Dhat Syndrome patients consulting them daily over a period of one month. The professionals completed record sheet and informed the researcher to collect filled in sheets from their practice / clinics.

3.1.4 Results

Total number of reported patients with Dhat Syndrome by different health professionals was 1777 over a period of one month. Data indicated that highest percentage of patients visited Hakims and Homeopaths (50% and 24% respectively) and very few cases consulted Psychologists.

Table 1

Patient' Statistics in Relation to the Health Professionals Consulted for Treatment (N=1777)

Different Health Professionals	*f*	P
Hakims	883	49.7
Homeopaths	419	23.6
Physicians	330	18.6
Psychiatrists	28	1.6
Psychologists	24	0.7
Infertility Specialists	100	5.6

P<0.000

Descriptive and non parametric analysis of demographic data showed that the patients with Dhat Syndrome ranged in ages of 12 – 65 years with the mean age of 24 years (*SD = 8.5*). Majority of the patients were single (75%), educated up to matric (67%) and had monthly income less than Rs. 3000 (56%). The results revealed that 60% of the patients had semen loss concern for the last six months and very few had semen loss anxiety for more than two years (14%).

Table 2

Demographic Characteristics of the Sample (N = 1777)

Marital Status	*F*	P
Single	1332	75
Married	387	21.8
Widowed	23	1.3
Divorced	14	0.8
Missing	21	1.2
Educational Level	*F*	P
Upto Matric	1191	67
Above Matric	549	31
Missing	36	2
Monthly Income	*F*	P
Less than Rs 3000	989	55.7
Rs 3000 – Rs12000	536	30.2
Rs 12000– Rs50000	133	7.5
Missing	119	6.7

*P***<0.001*

3.1.5 Summary of the Findings

In Pakistan, majority of the patients with semen loss concern consult Hakims (traditional healers) and Homeopaths. A typical profile of patients with Dhat Syndrome in Pakistan is a single, less educated from lower socioeconomic status class (Khan, 2005, Appendix D).

3.2 Study 2: Development of Dhat Syndrome Symptom Checklist (DSSC): Symptoms Generation

Aim of the present study was to generate a list of complaints / symptoms manifested by Dhat Syndrome patients reporting to professionals.

3.2.1 Sample

Sample comprised of fifty eight health professionals including Hakims (N = 12), Homeopaths (N =12), General Physicians (N =10), Infertility Specialists (N = 5), Psychologists (N = 10) and Psychiatrists (N = 9). Due to their prior willingness to participate in the research (study 1, page 75) and rapport been established the same professionals were included in this study for generation of symptoms.

3.2.2 Assessment Tool

Interview Schedule was used as a measure to gather information from these professionals. Interview with professionals contained open ended questions based on the ICD-10 criteria for Dhat Syndrome. Since these professionals had been part of study 1 and were familiar with ICD-10 criteria therefore it was easier for them to follow researcher questions. Researcher requested health professionals to provide a list of possible complaints the patients with Dhat Syndrome had been reporting at their practice. Researcher noted down complaints / symptoms reported by the professionals herself. It took about 8 – 10 minutes to interview each professional.

3.2.3 Procedure

Professionals were contacted through a letter explaining nature of the study (Appendix E) and requesting their cooperation. Further to sending letters, they were contacted over the phone to fix time for interview. The researcher visited clinics of the professionals in the scheduled times. Before conducting interview, the professionals were provided with ICD-10 criteria for Dhat Syndrome so that while reporting symptom manifestation they were clear about Dhat Syndrome. The professionals were requested to report symptoms manifested by the patients seen in their practice and bilingual ones were requested to report symptoms in both in Urdu (national language) and English. On average it took about half an hour to conduct one interview. Responses of the professionals were recorded by the researcher herself.

3.2.4 Results

All symptoms reported by professionals were compiled and those with slightly different terminology but the same theme were collated as one symptom. Symptoms having frequency of less than 10 % were excluded. A list of sixty six symptoms was compiled and a Yes / No response format for the presence and absence of a given symptom was adopted. The list of symptoms was in consensus with those reported in the existing literature (Avasthi, Verma, Nehra, & Das, 1992; Behere, & Nataraj, 1984, Bhatia, & Malik, 1991; Bottero, 1991; De Silva & Dissanayake, 1989; Edwards, 1983; Malhotra & Wig, 1975; Paris, 1992; Singh, 1985; Sharan, et al., 2003).

3.3 Study 3: Development of Dhat Syndrome Symptom Checklist: (DSSC): Examining Factor Structure

Main objective of study 3 was to examine factor structure of the Dhat Syndrome Symptom Checklist (DSSC).

3.3.1 Sample

Sample comprised of 873 participants and included medical students (n = 403), patients with general medical conditions (n = 403) and patients with Dhat Syndrome (n = 67). Sample comprised of diverse and heterogeneous groups for the reason that main purpose of the study was to examine factor structure of Dhat Syndrome Symptom Checklist and in order to examine factor structure large sample size was required. Moreover, inclusion of diverse groups of participants provided representation of semen loss concern in wider range of people i.e. healthy individuals (medical students), patients with general medical conditions and patients with dhat syndrome. In addition, symptom checklist developed and administered on wider range of participants would allow future researches in estimation of prevalence of Dhat Syndrome among general population.

The medical students were recruited from three major public sector medical colleges of Lahore after seeking formal permission by their respective Principals / Deans. Patients with general medical conditions were recruited from different private clinics of general physicians in Lahore. The patients with common transitory medical problems such as sneezing, fever, diarrhea, common cold were included and those with serious and chronic medical conditions were excluded. Patients with Dhat Syndrome were recruited from two major infertility centers in Lahore.

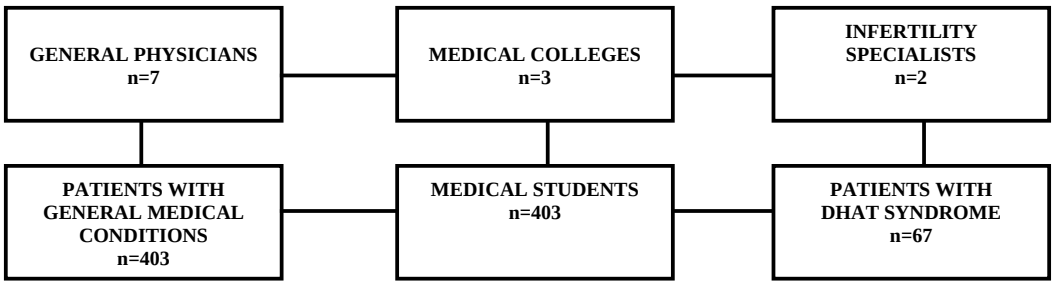

Figure 3. Distribution of the sample

3.3.2. Assessment Measure

A symptom checklist including sixty six Dhat specific symptoms (generated in study 2) and six benign symptoms (sneezing, vomiting, anemia, throat pain, sinusitis, and cough) was compiled. Benign symptoms were added to present Dhat specific symptoms in camouflaged and disguised form. This was felt necessary to put the participants at ease and to help overcome their guards and defenses while responding to a tabooed area in Pakistani culture. Thereby the symptom checklist included 72 items. In order to make checklist user friendly, symptoms were listed both in Urdu and English languages. The participant had to respond either in Yes or No for the presence or absence of a particular symptom (Appendix F).

3.3.3 Procedure

The following is detail of technical arrangements and procedure of data collection for three categories of participants.

3.3.3.1 Recruitment of Medical Students

Medical Students from three major public medical colleges attached with major teaching hospitals in Lahore were included. Principals / Deans of the medical colleges were contacted through a letter explaining nature of the study, requesting their permission to include students from their colleges and to extend help in technical arrangements (Appendix G). All three principals agreed and helped in logistics of data collection. The researcher fixed meetings with the designated teachers who took researcher to the lecture rooms of 2nd year medical students. Female students and non willing male students were requested to leave the class room. Written consent was taken from each student (Appendix H). The instructions to complete checklist were explained by the researcher in group form and the students completed checklist in the

researcher's presence. The medical students ranged in ages from 17-28 years with the mean age of 21 years (*SD = 1.59*). It took about 20 minutes to the students to complete the checklist.

3.3.3.2 Patients with General Medical Conditions

Twelve General Private Practitioners were approached through a letter explaining nature of the study, requesting their permission to assess patients from their clinical practice (Appendix I). Seven general physicians allowed data collection from their clinics. After fixing specific days of visits, the researcher visited their private clinics. General Physicians were explained that the patients with minor and transitory general medical conditions would be included in the study. The researcher was provided with a desk where the patients meeting inclusion criteria were assessed. The patients were explained nature of the study and their written consent to participate in the research was sought. Symptom checklist was completed individually by the patients. The patients' age ranged from 18-65 years with the mean age of 32 years *(SD = 10.50*). It took an average of 15 minutes per patient to complete the checklist.

3.3.3.3 Patients with Dhat Syndrome

Directors of two major Infertility clinics in Lahore were contacted to recruit patients with Dhat Syndrome from their clinics. Both directors consented and cooperated in data provision. After having finalized the logistics of data collection, the researcher collected data from their clinics. The patients ranged in age from 18-50 years with the mean age of 34 years (*SD = 6.51).* It took about four months to complete data collection from medical colleges, private clinics and fertility clinics. The patients were diagnosed by the Infertility Specialists according to ICD-10 criteria provided to them in writing by the researcher.

3.3.4 Results

To examine factor structure of Dhat Syndrome Symptoms Checklist (DSSC), principal component analysis using varimax rotation was carried out. Factor analysis was carried out on Dhat specific symptoms and benign symptoms were excluded. Initially, analysis was carried out without limiting number of factors and subsequent analyses were carried out by restricting number of factors. The five factor solution emerged as the most meaningful with eigen value greater than 1 (Figure 1 & Table 3).

The symptoms with loading of 0.35 and above were retained in a factor. In case of a symptom having required factor loading on more than one factor were retained where it theoretically made sense to the researchers. The factors emerged were named as Physical (N = 11), Somatic (N = 10), Psychological (N = 11), Sexual / Genital (N = 6), and Reduced Desire (N = 2).

Table 3

Factor Structure of Dhat Syndrome Symptom Checklist (DSSC)

Items	Factor 1 Physical	Factor 2 Somatic	Factor 3 Psychological	Factor 4 Sexual / Genital	Factor 5 Reduced Desire
General Weakness	0.58				
Backache	0.62				
Localized Aches & Pains	0.50				
Aches & Pains not Localized	0.59				
Weakness of Nerves	0.51				
Loss of Hair	0.36				
Fatigue	0.41				
Abdominal Distention	0.38				
Constipation	0.40				
Enlarged Penis	0.47				
Excessive Salivation	0.43				
Restlessness		0.35			
Excessive Sweating		0.40			

Table 3 (continued)

Factor Structure of Dhat Syndrome Symptom Checklist (DSSC)

Items	Factor 1 Physical	Factor 2 Somatic	Factor 3 Psychological	Factor 4 Sexual / Genital	Factor 5 Reduced Desire
Blurred Vision		0.44			
Poor Sleep		0.38			
Sinking of Heart		0.48			
Numbness in the Limbs		0.45			
Burning Sensation in Chest		0.59			
Acidity		0.55			
Dryness of Mouth		0.40			
Palpitations		0.50			
Fear			0.45		
Guilt			0.62		
Shyness			0.52		
Embarrassment			0.36		
Anxiety			0.36		
Loss of Confidence			0.50		
Nervousness			0.43		
Poor Memory			0.39		
Low Mood			0.44		
Suicidal Thoughts			0.36		
Not being Oneself (Depersonalization)			0.42		
Penile Discharge				0.52	
Thinness of Semen				0.35	
Penile Discharge before passing Urine				0.67	
Premature Ejaculation				0.42	
Penile Discharge after passing Urine				0.60	
Burning Sensation in Urine				0.42	
Lack of Interest in Sex					0.57
Decreased Desire for Sex					0.50

Forty symptoms contributed to resultant five factors. Reliability analysis (internal consistency) was carried out which resulted in alpha value of 0.79, 0.74, 0.77, 0.67 and 0.69 for five factors respectively (Appendix J; Khan, Kausar & Chaudhry, 2005).

3.4 Study 4: Development of Dhat Syndrome Symptom Checklist (DSSC): Modifications and Revisions

Symptom checklist comprising sixty six symptoms was generated in study two. As stated earlier the symptoms checklist was generated through different professionals seeing patients with semen loss concern. The researcher decided to revise Dhat Syndrome Symptom Checklist for the following reasons:

1. Thorough scanning and analysis of the symptom checklist revealed that professionals had included "*Modes of Semen Loss*" as symptoms in the symptoms checklist. The modes included were nocturnal emissions, nocturnal emissions without wet dreams, premature ejaculation, masturbation, heterosexual activity, homosexual activity, penile discharge, discharge before urine, discharge after urine and premature ejaculation. This decision was also led by a careful review of the literature which makes a clear cut distinction between symptoms and modes of semen loss (Avasthi, & Jhirwal, 2005; Collumbien & Hawkes, 2000; De Silva & Dissanayake, 1989; Lakhani, 2001; Malhotra & Wig, 1975; Sumathipala, Sribaddana, & Bhugra, 2004; Sharan, et al., 2003).
2. The professionals reported symptoms on the basis of their own observation and clinical experience, the patients were not consulted in the process of symptoms generation.

3. Yes / No response format could not provide an accurate estimate of the intensity / severity of symptoms. Therefore, it was decided that the response format is changed to five point rating scale to gauge the intensity of a specific symptom experienced.

The major aim of the present study thus was to revise checklist by excluding modes of semen loss and adding symptoms from the patients' verbatim.

3.4.1 Sample

Thirteen professionals from four specialties i.e. Hakims, Homeopaths, General Physician and Infertility Specialists consented to provide patients' verbatim pertaining to their presenting complaints. As indicated from the below flow chart professionals provided verbatim of 115 patients which helped revise symptom checklist.

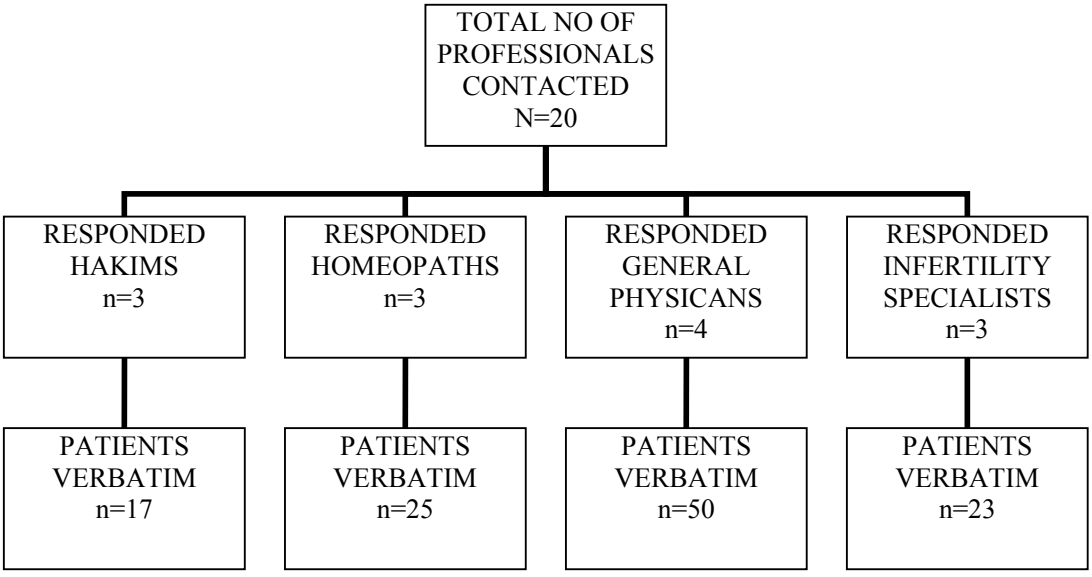

Figure 4. Flow chart showing distribution of professionals and patients

3.4.2 Assessment Measure

The professionals were provided with ICD-10 criteria for inclusion of Dhat Syndrome patients. Record forms (Appendix K) were prepared for recording verbatim of the patients for presenting complaints.

3.4.3 Procedure

Professionals were approached through letters explaining nature of the study and requesting their cooperation for provision of data (Appendix L) collected later by the researcher from the professionals' clinics. A total of 115 patients' verbatim was collected. This phase of data collection completed in one month.

3.4.4 Results

After incorporating symptoms provided by the patients, a symptom checklist comprising 65 symptoms was compiled with the following modifications (table 4).

1. Terminology for fifteen symptoms was revised per patients' verbatim.
2. Modes of semen loss were excluded.
3. New symptoms generated through patients' verbatim were added.
4. 36 symptoms were retained from the previous symptom checklist.

Table 4

Comparison of Previous Symptom Checklist with Revised Symptom Checklist

Terminology Changed	Removed (9)	Added (13)
Breathlessness (General Breathlessness)	Nocturnal Emission with Dreams	Weakness in Legs
Aches and Pain in Joints (Localized Aches and Pains)	Nocturnal Emission without Wet Dreams	Lack of Interest in Work
Aches and Pain in Joints (localized aches and pains)	Premature Ejaculation	Fear of Sexual Weakness
Bodily Aches and Pains (Aches and Pain not Localized)	Masturbation	Pain in Legs

Table 4 (continued)

Comparison of Previous Symptom Checklist with Revised Symptom Checklist

Terminology Changed	Removed (9)	Added (13)
Weakness of Nerves (Parasthasias)	Heterosexual Activity	Prominence of Genital Veins
Excessive Sleep (Hypersomnia)	Heterosexual Activity	Enlarged Testes
Shrinking of Penis (Feeling that Penis is Shrinking)	Penile Discharge before Urine	Tilted Penis
Itchy Skin (Skin Allergy)	Penile Discharge after Urine	Loss of Appetite
Impotence (Erectile Dysfunction)	Sexual Excitement	Fear of Getting Married
Gastric Disturbances (Ulcer and Regurgitation)		Worry
Decreased Desire for Sex (Decreased Libido)		Pale Complexion
Sad Mood (Depression)		Punched Cheeks
Suicidal Thoughts (Suicidal Ideation)		Shallow Eyes
Not being Oneself (Depersonalization)		
Physical Weakness (General Weakness)		

Note: terminology used in previous checklist is given in parenthesis

3.5 Study 5: Development of Dhat Syndrome Symptom Checklist (DSSC): Readability and Conceptual Clarity

Aim of the present study was to examine readability and conceptual clarity of Dhat Syndrome Symptom Checklist (DSSC) and to examine inter judge congruence to examine inter rater reliability of the scale.

3.5.1 Sample

Twenty five bilingual health professionals including Hakims, Homeopaths, General Physicians and Infertility Specialists were contacted.

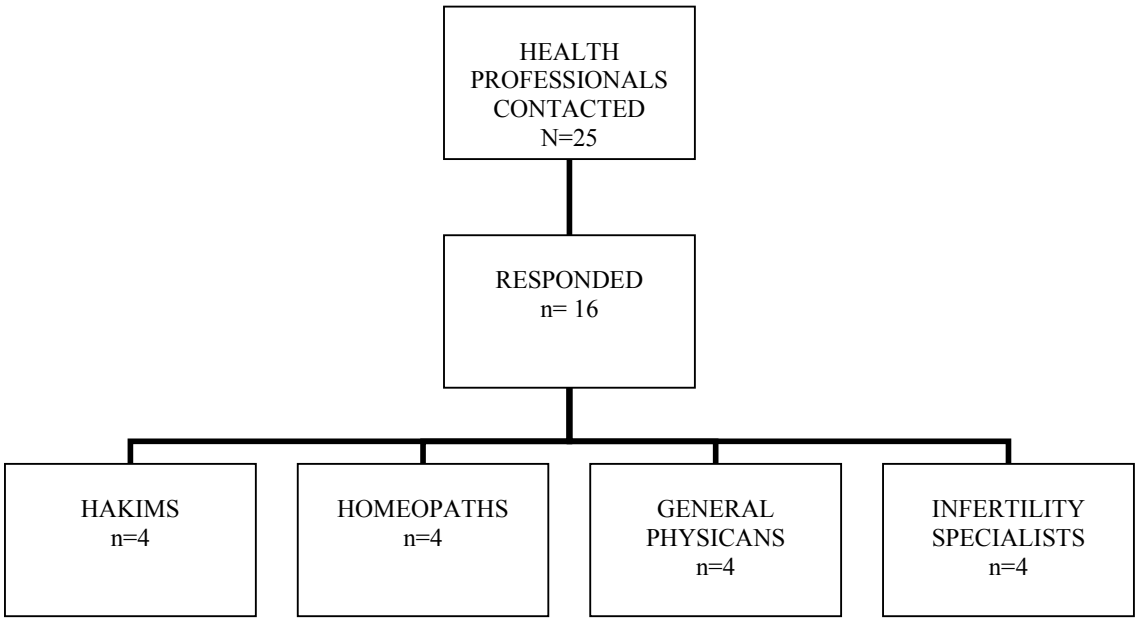

Figure 5. Distribution of professionals recruited

3.5.2 Procedure

Two sets of Dhat Syndrome Symptom Checklist (DSSC) one in Urdu and one in English were prepared for evaluation of Dhat Syndrome Symptom Checklist (DSSC)'s readability and conceptual clarity. The checklist was provided to twenty five professionals who were requested to rate each symptom on five point rating scales for readability and conceptual clarity both for English and Urdu checklists. Thereby each rater was required to provide four sets of ratings i.e. two for readability (English and Urdu checklists) and two for conceptual clarity (English and Urdu Checklists). Instructions for ratings were clearly stated on top of each Checklist (Appendix M). The professionals were approached by the researcher and sets of checklists were delivered to them. The raters informed the researcher after having rated checklists who collected completed checklists from them. Nine professionals did not complete checklists properly, thereby their data was excluded and ratings from sixteen raters qualified data analysis. Hence the response rate was 64%.

3.5.3 Results

To examine inter rater reliability; congruence analysis was carried out for each set of rating. It was decided that symptoms having inter rater congruence less than 50 would be excluded from the checklist.

Analysis showed that inter rater congruence on three symptoms was less than 50 therefore these symptoms were dropped from the checklist. These symptoms included nausea, vertigo, and not being oneself. The final Dhat Syndrome Symptom Checklist (DSSC) contained 62 symptoms.

Table 5

Inter rater Congruence on Conceptual Clarity and Readability of Symptoms

	Symptoms	Conceptual Clarity English	Conceptual Clarity Urdu	Readability English	Readability Urdu
1	Breathlessness	56	60	56.67	56.67
2	Backache	60.67	59.33	56	56.67
3	Aches & Pains in Joints	52	50.67	54.67	52
4	Bodily Aches & Pains	57.33	59.33	59.33	59.33
5	Nausea	42.67	42.67	42	45.33
6	Weakness of Nerves	54.67	50.33	54.67	54.67
7	Physical Weakness	60	62	63.33	65.33
8	Restlessness	56.67	53.33	56	54
9	Thinness of Semen	64.67	63.33	64.67	66
10	Frequent Diarrhea	52.67	49.67	50.67	49.73
11	Excessive Sweating	52	54	53.33	53.33
12	Headache	58.67	58	56.67	58.67
13	Excessive Sleep	56.67	56.67	54.67	56
14	Shrinking of Penis	52.67	50.67	55.33	53.33
15	Vertigo	47.33	46.67	44.67	46.67
16	Weakness in Legs	60	61.33	63.33	63.33
17	Lack of Interest in Work	62.67	60.67	64	62.67
18	Fear of Sexual Weakness	63.33	62.67	64	66.67
19	Pain in Legs	58.67	60	59.33	63.33
20	Itchy Skin	49.60	50.33	51.33	49.80
21	Blurred Vision	54	51.33	50.67	55.33
22	Loss of Hair	59.33	56	57.33	59.33
23	Weak Eyes	53.33	56	58.67	58
24	Impotence	61.33	60	61.33	63.33
25	Fatigue	60.67	58.67	61.33	59.33
26	Guilt	56	54	59.33	57.33
27	Shyness	60	58.67	61.33	61.33
28	Gastric Disturbances	52	52	51.33	53.33
29	Loss of Weight	62.67	66	62	66

Table 5 (continued)

Inter rater Congruence on Conceptual Clarity and Readability of Symptoms

	Symptoms	Conceptual Clarity English	Conceptual Clarity Urdu	Readability English	Readability Urdu
30	Poor Sleep	61.33	61.33	61.33	63.33
31	Lack of Interest in Sex	61.33	58	64	59.33
32	Embarrassment	56	56	57.33	59.33
33	Decreased Desire for Sex	58	54	62	56.67
34	Prominence of Genital Veins	49.67	49.83	50	50.67
35	Tremors in Hands	55.33	49.67	49.85	50
36	Concern Regarding Marriage	62.67	58	64	64
37	Concern Regarding Sex	62	59.33	66.67	62.67
38	Lack of Confidence	58.67	59.33	60.67	58
39	Nervousness	58.67	56	57.33	56.67
40	Loss of Enthusiasm	52	60	54.67	60
41	Poor Memory	52.67	50.67	51.33	53.33
42	Smallness of penis	59.33	54.67	58	55.33
43	Sad Mood	63.33	64	65.33	62
44	Heart Sinking	58	56	58.67	58.67
45	Suicidal Thoughts	56	58.67	54.67	58.67
46	Numbness in the Limbs	53.33	56.67	59.33	60
47	Not Being Oneself	43.33	44	40.67	48
48	Smallness of Testes	50.67	54.67	54	58.67
49	Excessive Salivation	52	50	52	51.33
50	Enlarged Penis	50.67	40	49.33	42.67
51	Burning Sensation in Chest	54	52	55.33	52
52	Dryness of Mouth	60	60	61.33	60
53	Enlarged Testes	51.33	50.67	49.53	49.83
54	Flushing of Face	52.67	55.33	54	55.33
55	Burning Sensation in Urine	64	64.67	63.33	64
56	Palpations	62.67	65.33	62.67	65.33
57	Tilted Penis	54.67	60	53.33	59.33
58	Loss of Appetite	62	59.33	61.33	60.67
59	Fear of Getting married	62	65.33	65.33	66.67
60	Worry	61.33	61.33	63.33	65.33
61	Pain in Testes	64	56.67	63.33	59.33
62	Pale complexion	60.67	64	64	64.67
63	Constipation	60.67	56	63.33	59.33
64	Punched Cheeks	52.67	64	54	64
65	Shallow Eyes	49.73	62	52	62

3.6 Study 6: Physical and Psychological Implications of Dhat Syndrome

Aim of the present study was to examine the Physical and Psychological Implications of Dhat Syndrome in Pakistan. Within Group Design was used and patients were assessed one point in time on different measures.

3.6.1 Sample

Sample comprised 318 patients with Dhat Syndrome and was recruited from clinics of Hakims, Homeopaths, General Physicians and Infertility Specialists. Patients meeting ICD-10 diagnostic criteria for Dhat Syndrome were included and those having history of any major psychiatric disorders such as mood disorder, psychosis and organic disorder were excluded.

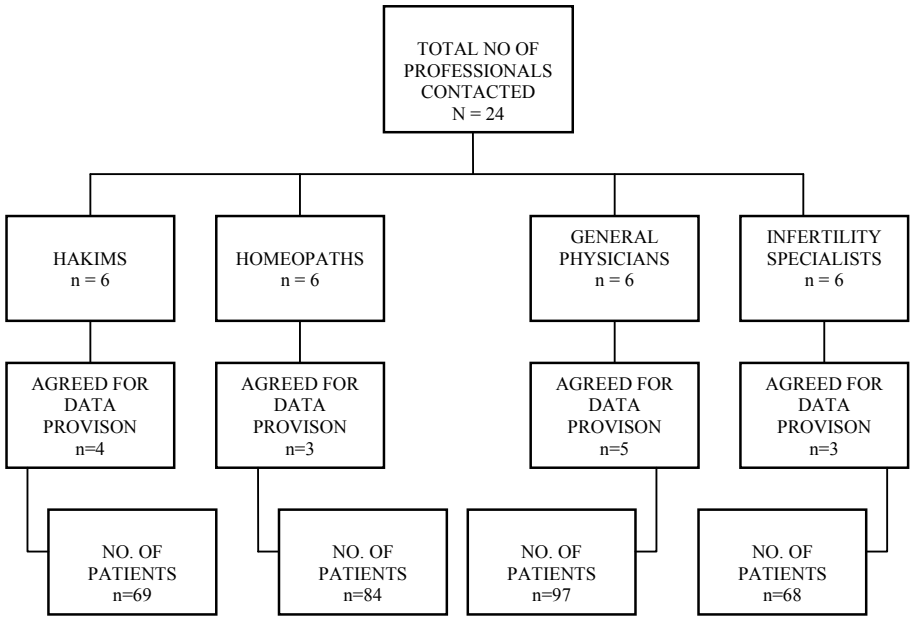

Figure 6. Distribution of sample and response rate

The above given flow chart indicates the number of patients recruited from different specialists. Majority of the cases were recruited from by General Physicians, followed by Homeopaths, Hakims and Infertility Specialists respectively. Although equal numbers of professionals from each specialty were contacted yet all of them did not agree to provide data. Most of the General Physicans agreed thereby increasing recruitment of patients from their clinics.

Demographic and other characteristics of the patients are given in table 6. Most of the participants were single (55.3%) and they ranged in age from 18-62 years

(*M = 29.53*, *SD* = 8.84). One third of the participants responded to the question regarding having extra / premarital relations and among them majority reported having such relations (75%).

Table 6

Demographic and other Characteristics of the Participants

Variables	Statistics
Recruited From	
Hakims	69 (21.7%)
Homeopaths	84 (26.4%)
General Physicians	97 (30.5%)
Infertility specialists	68 (21.4%)
Age (N = 318)	
Mean	29.53 Years
S.D.	8.84
Range	18-62 Years
Marital Status (N = 318)	
Married	123 (38.7%)
Single	176 (55.3%)
Divorced	8 (2.5%)
Separated	6 (1.9%)
Widowed	5 (1.6%)
Monthly Income (N = 240)	
Mean	6082.5 RS
S.D	3552.79 RS
Range	1000 – 16000 RS
Education (N = 316)	
Less than Primary	20 (6.3%)
Primary	32 (10.1%)
Middle	62 (19.6%)
Matric	69 (21.8%)
FA/F.Sc	54 (17.1%)
B.A / B.Sc	53 (16.7%)
M.A / M.Sc	23 (7.2%)
Other	3 (.9%)
Profession (N = 309)	
Skilled Labour	56 (18.1%)
Unskilled Labour	54 (17.5%)
Non Officials	31 (10%)
Small Business	37 (12%)
Agriculturalists	10 (3.2%)
Students	35 (11.3%)

Monthly income of the participants ranged from Rs 1000-16000 with a mean income Rs. 6082 *(SD = 3553*). Only 24 % of the participants were educated up to

graduate and masters level. Majority of them were working as labourer (skilled and unskilled), non officials and were running small business whereas only 7 % were working as professionals (e.g. teachers and officers).

3.6.2 Assessment Measures

Following measures were used to assess symptom manifestation and Physical, Psychological and Sexual Implications of Dhat Syndrome.

3.6.2.1 Semi Structured Interview Schedule

Semi Structured Interview Schedule was prepared by the researcher in consultation with the relevant existing literature (Behere, & Nataraj, 1984; Bhatia, & Malik, 1991; Bottero, 1991; DeSilva, & Dissanayake, 1989; Edwards. 1983; Malhotra, Wig, & Verma, 1977; Paris, 1992; Sharan, et al., 2003; Singh, 1985), consultation and discussion with professionals. The Semi-Structured Interview Schedule comprised questions seeking information pertaining to demographic information of the patients; patient's health status; family atmosphere. It also included Dhat related questions such as; nature of the problem; duration of the problem; cause of the problem; source of knowledge; mode of semen loss; implications of Dhat Syndrome; information regarding its treatment etc. The questionnaire also included qualitative open ended questions pertaining to the prevalent myths regarding Dhat Syndrome. Semi Structured interview Schedule prepared so was sent to seven professionals including 3 Hakims, 2 Homeopaths and 2 General Physicians for their input. Semi Structured Interview Schedule was finalized by incorporating professionals' input (Appendix N).

3.6.2.2 Dhat Syndrome Symptom Checklist (DSSC*)*

Dhat Syndrome Symptom Checklist (DSSC) was developed by the researcher as part of this research (see studies 2 - 5, pp. 82 - 95). The checklist contained 62

Symptoms to be rated on 5 point rating scale measuring intensity of a particular symptom been present ranging from "Not at All", to “A Great Deal”. The checklist contained symptoms both in Urdu and English and clear instructions to complete the checklist were listed on the top of the Dhat Syndrome Symptom Checklist (DSSC) (Appendix O).

3.6.2.3 General Health Questionnaire (GHQ 28)

General Health Questionnaire (GHQ-28, Goldberg, 1978, 1986; Goldberg, & Williams, 1988) was used to examine psychological implications of Dhat Syndrome. General Health Questionnaire (GHQ) assesses anxiety, depression, somatic complaints and social dysfunctioning. The General Health Questionnaire (GHQ) has been used to estimate psychiatric morbidity among community and non-psychiatric clinical settings (Cohen, Bird, & Baker, 1982; Goldberg, 1972; Shapiro, et al, 1985; Tennant, & Andrews, 1978). This questionnaire is easy to administer, fairly short and quite objective that it does not require the person administering it to make subjective assessments about the respondent.

General Health Questionnaire (GHQ-28 Scaled Version) was developed by Goldberg and Williams (1988) on the basis of the results of principal components analysis. General Health Questionnaire (GHQ-28) has gained immense popularity. Four sub-scales of General Health Questionnaire (GHQ-28) though represent different dimensions of symptomatology are not independent of each other.

Urdu version of General Health Questionnaire (GHQ-28) was used in the present study. General Health Questionnaire (GHQ-28) Urdu version had been translated by NFER-NELSON, UK. After receiving a sample copy of Urdu version from NFER NELSON, UK, the researcher and her supervisor realized that the available translated version of GHQ-28 had number of conceptual problems in its

translation and they suggested NFER-NELSON, UK modifications in General Health Questionnaire (GHQ-28) Urdu version. Thereby GHQ-28 title, instructions and number of statements were re-translated. Title of the GHQ-28 Urdu version was retranslated to make it conceptually comparable to the English General Health Questionnaire (GHQ-28, Appendixes P & Q). The modified Urdu version of General Health Questionnaire (GHQ-28) was sent back to the NFER-NELSON, UK which has been officially accepted vide license signed by the NFER-NELSON and the researcher (Appendix R) and is currently available with the publishers for further use and circulation (correspondence with NFER NELSON (Appendix S).

3.6.3 Procedure

Participants were approached through out - patient clinics of different health professionals of Lahore. The professionals were contacted through a letter explaining nature of the study, assuring them about confidentiality of their patients' responses and requesting their cooperation for data collection (Appendix T). Data was collected from those professionals who had clinical experience of more than ten years. Those professionals who were willing to provide data from their clinics were visited by the researcher for finalization of schedule and logistics of data collection.

The researcher visited the clinics per convenience of the professionals. Initial screening of the patients was done by the concerned professionals who referred patients meeting ICD -10 criteria to the researcher. The researcher was provided space for assessment on the premises of professionals. The patient's consent for participation in the study was taken (Appendix U) and subsequent to that individual assessment was carried out. Interview Schedule was used as a method of data collection. On average, it took an hour to complete assessment of one patient. The

researcher observed that despite the researcher being a female, patients discussed their problem with her without any hesitation. Data collection for the main study took about five months which included data collection throughout the week except for Sundays. The researcher visited professionals during mornings and evenings for data collection.

CHAPTER 4

RESULTS

Results of the present study are presented in four sections. First section presents descriptive statistics of Dhat Syndrome patients' perception of the syndrome, mode of semen loss, etiological factors and other related information. Second section of results presents principle component analysis as well as reliability analysis determining psychometric properties of Dhat Syndrome Symptom Checklist (DSSC). Third section presents inferential statistics mainly comprising MANOVA, ANOVA, t-test, correlation and regression analyses. Third section is further divided into two parts: a**.** Analysis pertaining to Dhat Syndrome manifestation and b**.** Psychological Distress in Patients.

4.1 Descriptive Statistics

Descriptive statistics was computed for patient characteristics and Dhat Syndrome related characteristics (table 7). Majority of the patients (65%) perceived themselves as moderately religious and their family atmosphere being moderately strict (54%). Almost half of them rated their parents strict and majority reported fathers being strict (78%). Premature ejaculation and nocturnal emission were the major reasons for referral (49% and 44% respectively). Masturbation and exposure to pornographic material were the major causes of Dhat Syndrome (86% and 54% respectively). Major source of information about Dhat Syndrome were friends and Hakims (83% and 49% respectively) whereas, friends (88%), video films (53%) and literature (50%) were the major sources of information about sex. Most of the participants reported that their friends also had Dhat Syndrome (84%).

Table 7

Sample Characteristics

Variables	Statistics
Degree of Religiosity (N = 317)	
Not at all Religious	31 (9.8%)
Religious to a Moderate Level	206 (65%)
Religious to a Great Deal	70 (25.2%)
Family Atmosphere during Childhood (N = 316)	
Not at all Strict	41 (13%)
Strict to a Moderate Level	170 (53.8%)
Strict to a Great Deal	105 (33.2%)
Parental Strictness (316)	
Father	105 (77.8%)
Mother	30 (22.2%)
Reason for Referral	
Premature Ejaculation (N = 317)	156 (49.2%)
Nocturnal Emission (N = 317)	141 (44.5%)
Emission (N = 317)	83 (26.2%)
Discharge before Urine (N = 317)	83 (26.2%)
Discharge after Urine (N = 317)	106 (33.4%)
The Source of Information about the Problem	
Friends	261 (83.1%)
Hakims	150 (47.8%)
Literature	108 (34.4%)
Advertisements	102 (32.5%)
Books	34 (10.8%)
Newspapers	22 (7%)
Video films	17 (5.4%)
General Physicians	19 (6.1%)
Homeopaths	15 (4.8%)
Parents	3 (1%)
Whether any Relative or Friend has Dhat Syndrome	
Yes	91 (28.6%)
Friends	68 (84%)
Relative	13 (16%)
The Source of Information about Sex	
Friends	275 (88.4%)
Video films	166 (53.4%)
Literature	156 (50.2%)
Books	91 (29.3%)
Advertisements	56 (18%)
Internet	47 (15.1%)

Table 7 (continued)

Sample Characteristics

Variables	Statistics
Newspapers	17 (5.5%)
Television	8 (2.6%)
Parents	5 (1.6%)
Relatives	5 (1.6%)

Table 8

Dhat Related Information

Variables	Statistics
Perceived causes of Dhat Syndrome	
Masturbation	272 (86.3%)
Pornographic Literature	171 (54.3%)
Heterosexual Relations	112 (35.6%)
Homosexual Relations	39 (12.4%)
Nocturnal Emission	57 (18.1%)
Diet	156 (49.7%)
Implications of Dhat Syndrome	
Effected Every Day Life	302 (95.3%)
Effected Psychologically	105 (33.1%)
Effected Physically	267 (84%)
Effected Marital life	52 (42.3%)
Dispute with Wife	55 (45%)
Fear of Separation with Wife	30 (25%)
Decreased Frequency of Intercourse with Wife	83 (70.3%)
Effected Fertility	48 (39%)
Effected Sexual Life	174 (54.7%)
Dispute with Partner	41 (41%)
Fear of Separation with Partner	38 (39.6%)
Decreased Frequency of Intercourse with Partner	71 (75%)
Fear of Sexual Weakness	300 (94.3%)
Resulted in Sexual Weakness	226 (72.3%)
Reduced Interest in Sex	145 (46.5%)
Drug Addiction before Dhat Syndrome	
Yes	77 (24.8%)
Opium	23 (29.8%)
Alcohol	7 (9%)
Tranquilizers	3 (3.89%)
Heroine	1 (1.29%)
Drug Addiction After Dhat Syndrome	57 (18.6%)

Table 8 (continued)

Dhat Related Information

Variables	Statistics
Advised for Treatment	
Friend	221 (69.5%)
Wife	66 (20.8%)
Partner	49 (15.4%)
Parents	33 (10.4%)
Relative	19 (6%)
Source of Information about the Clinic	
Friend	199 (62.6%)
Relative	49 (15.4%)
Newspapers	60 (18.9%)
Advertisement	30 (9.4%)
Treatment Sought Before	
Yes	275 (88.7%)
From Hakims	239 (86%)
From Homeopaths	107 (38.5%)
From General Physicians	98 (35.3%)
From Psychologists	3 (1.1%)
Perceived Effectiveness of a Particular Treatment	
Yes	83 (29.9%)
General Physician's Treatment	128 (41.2%)
Homeopaths	43 (13.8%)
Hakims	23 (7.4%)
Psychologists	14 (4.5%)
Whether the Treatment was Effective	
Yes	36 (33.6%)
General Physician's Treatment	47 (44.3%)
Homeopaths	5 (4.7%)
Hakims	2 (1.9%)
Psychologists	5 (4.7%)

Dhat Syndrome was reported to have adverse implications for the majority's daily life (95%), particularly for physical health (84%), psychological health (33%) and sexual functioning (55%). Most of them perceived that they had either developed sexual weakness (72%) or they feared of developing sexual weakness (94%) as a result of semen loss. In most cases there was a marked decrease in frequency of sexual intercourse (75%). Among married patients, forty two percent perceived that

Dhat Syndrome had adversely affected their marital life and the effects were varied; i.e. decreased frequency in sexual intercourse, marital disputes and infertility.

Friends and spouses / partners were the major source of advice to seek treatment and friends were the major source of information about the clinic where they consulted for treatment. A vast majority had sought treatment before (89%) and had consulted Hakims (86%). However, only 30% perceived earlier treatment as effective.

4.1.1 Manifestation of Dhat Syndrome Symptoms: Descriptive Statistics

In order to examine manifestation of symptoms by patients descriptive statistics was computed. Analysis presented in table 9 contains symptoms reported by 50% and above. The analysis shows that fear of sexual weakness and worry was reported by a vast majority followed by concerns regarding sex, physical weakness, thin semen, fatigue, weakness in legs, pain in legs, pale complexion, lack of confidence, bodily aches and pain, constipation, guilt feelings, pain in testes, weakness of nerves, fear of getting married, concern regarding marriage, shallow eyes, punched cheeks, dryness of mouth and impotence.

Table 9

Dhat Syndrome Symptoms Manifestation in Patients (arranged in descending order)

Symptoms	Response %
Fear of Sexual Weakness	83.6%
Worry	83.6%
Concern Regarding Sex	80.8%
Physical Weakness	78.0%
Thinness of Semen	78.0%
Fatigue	70.4%
Weakness in Legs	68.6%
Pain in Legs	66.0%
Pale Complexion	64.5%
Lack of Confidence	61.3%

Table 9 (continued)

Dhat Syndrome Symptoms Manifestation in Patients (arranged in descending order)

Symptoms	Response %
Constipation	60.4%
Bodily Aches & Pains	60.1%
Guilt	59.7%
Weakness of Nerves	59.4%
Pain in Testes	56.6%
Fear of Getting Married	54.7%
Concern Regarding Marriage	53.8%
Shallow Eyes	53.1%
Dryness of Mouth	50.9%
Punched Cheeks	50.3%
Impotence	50.0%

4.2 Principal Components Analysis of Revised DSSC

Dhat Syndrome Symptom Checklist (DSSC) developed in the present research (for detail see studies 2-5) was used for examining manifestation of Dhat Syndrome in the main study. In order to examine factor structure of Dhat Syndrome Symptom Checklist and estimate its reliability, Principal Component Analysis (PCA) and internal consistency analysis was performed.

Principal components analysis with varimax rotation was carried out. A series of analyses was carried out with n number of solution to limited factor number solutions. The three factor solution resulted in the most meaningful one as it produced maximally independent factors and each of which comprised a set of conceptually meaningful symptoms (see table 10). For symptoms where expected loading was on two factors, the researcher retained it in the factor where it made conceptually more sense. Following is a brief description of factors that emerged in the principle component analysis.

Table 10

Factor Structure of the "DSSC" (N =318)

DSSC SYMPTOMS	Factor Loadings		
	Physical	Psychological	Sexual / Genital
Backache	.48		
Aches and Pains in Joints	.62		
Bodily Aches and Pains	.75		
Physical Weakness	.72		
Weakness in Legs	.76		
Sexual Weakness	.74		
Pain in Legs	.79		
Weak Eyes	.43		
Fatigue	.69		
Gastric Disturbances	.47		
Loss of Weight	.67		
Excessive Salivation	.52		
Dryness of Mouth	.62		
Pain in Testes	.69		
Pale Complexion	.66		
Constipation	.62		
Punched Cheeks	.64		
Shallow Eyes	.63		
Breathlessness		.65	
Weakness of Nerves		.40	
Restlessness		.45	
Frequent Diarrhoea		.53	
Sweating		.62	
Headache		.48	
Lack of interest in Work		.45	
Poor Sleep		.44	
Tremors in Hands		.65	
Nervousness		.48	
Loss of Enthusiasm		.48	
Poor Memory		.48	
Sad Mood		.53	
Heart Sinking		.61	
Suicidal Thoughts		63	
Burning Sensation in Chest		.63	
Flushing of Face		.55	
Palpitation		.51	
Loss of Appetite		.40	
Worry		.48	
Loss of Confidence		.48	
Thinness of Semen			.51
Shrinking of Penis			.60
Impotence			.62
Shyness			.67
Guilt			.53
Lack of interest in Sex			.66
Embarrassment			.75
Decreased Desire of Sex			.74
Prominence of Genital Veins			.73

Table 10 (continued)

Factor Structure of the "DSSC" (N =318)

DSSC SYMPTOMS	Factor Loadings		
	Physical	Psychological	Sexual / Genital
Concern regarding Sex			.65
Smallness of Testes			.49
Enlarged Penis			.52
Smallness of Penis			.70
Enlarged Testes			.55
Burning Sensation in Urine			.70
Titled Penis			.64

DSSC symptoms are represented by key words

The first factor was named "Physical Symptoms" (18 symptoms, $\alpha = 0.92$), it included a cluster of Physical Symptoms (e.g. aches and pains, fatigue, weakness). The second factor was named as "Psychological Symptoms" (21 symptoms, $\alpha = 0.90$) and the symptoms included were Psychological (e.g. breathlessness, worry, sad mood, suicidal ideation). Factor three was named "Sexual Symptoms" (16 symptoms, $\alpha = 0.87$). Symptoms included in this factor were mainly of sexual nature (e.g. Impotence, decreased desire for sex, shrinking of penis). The resultant symptom checklist contained 55 symptoms. Reliability was evaluated examining internal consistency of the resulting scales using Cronbach Coefficient alpha. Internal consistency estimates produced high alpha coefficients for all subscales and ranged from 0.87 to 0.92.

4.3 Inferential Statistics

The data in this section is presented in the following order: the first part examines manifestation of Dhat Syndrome as assessed using Dhat Syndrome Symptom Checklist (DSSC); relationship of demographic and other variables with Dhat Syndrome symptoms; and significant predictors of Dhat Syndrome symptoms. Second part of results examines physical and psychological implications of Dhat Syndrome in form of anxiety, somatic complaints, social dysfunctioning and

depression; relationship of demographic and other related characteristics with physical and psychological implications; and significant predictors of physical and psychological symptoms. These two parts of results employed variety of analyses including MANOVA, One Way Analysis of Variance, t-test Analysis, Correlation and Regression Analysis.

4.3.1 Manifestation of Dhat Syndrome Symptoms

Since number of symptoms in Dhat Syndrome Symptom Checklist (DSSC) subscales varied therefore to make scores on different subscales comparable, standard scores were computed. Raw scores were converted into scaled scores using the following formula:

"Scaled Score = ((X/I)/5* 10, Where X = Total score on a particular category, I = Number of symptoms in the category, 5 = Number of response options for each symptom"

Standard scores on three sub scales were used for further analyses. Multivariate analysis of variance was performed to examine symptom manifestation. Analysis revealed that patients significantly differed in manifestation of Dhat Syndrome *($F = 519.52, p<0.001$)*. Further to Multivariate Analysis, a series of paired sample t-test analysis was conducted to examine specific differences in manifestation of different types of symptoms on Dhat Syndrome Symptom Checklist (DSSC).

Analysis showed that physical symptoms were manifested the most and sexual symptoms the least. Patients manifested physical symptoms significantly more than psychological and sexual symptoms. Psychological symptoms were manifested significantly more than sexual symptoms.

Table 11

Paired Sample t-test Comparing DSSC Symptom Scores (N = 318)

	Symptoms	*M*	*SD*	*t*	*P*
Pair 1	Physical Symptoms	55.71	28.02	9.91	0.000
	Psychological Symptoms	40.72	26.43		
Pair 2	Physical Symptoms	55.71	28.02	12.46	0.000
	Sexual Symptoms	37.29	21.31		
Pair 3	Psychological Symptoms	40.72	26.43	5.41	0.001
	Sexual Symptoms	37.29	21.31		

df = 317

4.3.1.1 Manifestation of Dhat Syndrome Symptoms in Relation to Demographic and Other Characteristics

Pearson correlation analysis was carried out to examine relationship between patient's demographic characteristics and other variables with Dhat Syndrome symptoms (table 12).

Table 12

Relationship of Demographic and other Variables with DSSC Symptoms

Variables	Physical	Psychological	Sexual
Patient Age (N = 313)	-0.14**	0.00	-0.01
Patient Income (N = 252)	-0.13*	0.06	-0.01
Patient Education (N = 311)	-0.32**	0.00	-0.00
Duration of the Problem (N = 307)	0.10	0.19**	0.18**
Intensity of the Problem (N = 312)	0.47**	0.24**	0.32**
No. of Extramarital Relations (N = 100)	-0.05	-0.15	-0.14
Family Atmosphere being Conservative (N=316)	0.06	0.02	-0.01
Effected Daily Life (N = 317)	0.20**	0.30**	0.34**
Effected Psychologically (N = 317)	0.002	0.29**	0.27**
Effected Physically (N = 318)	0.39**	0.17**	0.15**
Effected Marital Life (N = 123)	0.06	0.18**	0.20**
Effected Sexual Life (N = 318)	0.12*	0.20**	0.34**
Effected Fertility (N = 123)	0.27**	0.22**	0.23**
Resulted in Sexual Weakness (N = 312)	0.19**	0.43**	0.56**

Table 12 (continued)

Relationship of Demographic and other Variables with DSSC Symptoms

Variables	Physical	Psychological	Sexual
Fear of Sexual Weakness (N = 318)	0.49**	0.09	0.18**
Importance of Diet (N = 316)	-0.05	0.04	0.16**
Had caused Dispute with Wife (N = 130)	0.27**	0.31**	0.36**
Had caused Dispute with Partner (N = 100)	0.13	0.19	0.26**
Fear of Separation with Wife (N = 110)	0.22*	0.35**	0.39**
Lack of Interest in Sex (N = 312)	0.03	0.32**	0.44**
Decreased Frequency of Intercourse (N = 121)	0.25**	0.21*	0.26**
Concern Emission (N = 311)	0.11*	0.15*	0.25**
Concern Nocturnal Emission (N = 310)	0.19**	0.13*	0.14*
Concern Premature Ejaculation (N = 309)	-0.09	-0.00	0.06
Concern Discharge before Urine (N = 309)	0.31**	0.08	0.12*
Concern Discharge after Urine (N = 311)	0.04	0.05	-0.05

**p < 0.05, **p< 0.01*

Analysis indicated that patients' age, monthly income and education had negative relationship with physical symptoms. Duration and perceived intensity of the problem had positive relationship with Dhat Syndrome symptoms. The patients' perception of diet as important factor in causation of Dhat Syndrome showed positive relationship with sexual symptoms. Patients' perception of implications of Dhat Syndrome for patients' life i.e. Physical, Psychological, Sexual and Reproductive Health as well as its impact on marital life showed positive relationship with symptoms severity. In addition, anticipated implications of Dhat Syndrome e.g. fear of sexual weakness, fear of separation with wife also showed positive relationship with symptoms severity. Patients' concern on modes of semen loss through emission, nocturnal emission and discharge before urine had positive relationship with symptom severity.

Subsequent to correlation analysis, a series of one way analysis of variance, post hoc analysis and t-test analyses was carried out to examine manifestation of

symptoms in relation to demographic and other variables. In order to compare patients recruited from four types of specialists one way analysis of variance followed by post-hoc analysis was performed. The results are presented in tables 13 and 14.

Patients reporting at four types of specialists differed significantly in manifestation of symptoms on three subscales of Dhat Syndrome Symptom Checklist (DSSC). Post hoc analysis showed that those patients who were experiencing physical symptoms were consulting Hakims and General Physicians more compared to consulting Homeopaths and Infertility Specialists. Those experiencing psychological symptoms were consulting Hakims, Homeopaths and General Physicians more compared to Infertility Specialists. Those experiencing "Sexual Symptoms" were consulting Hakims significantly more than other consultants. Overall analysis shows that Dhat Syndrome patients prefer to consult Hakims for diverse symptoms whereas they consult General Physicians only when they experience physical symptoms.

Table 13

Manifestation of Dhat Syndrome Symptoms in Patients Consulting Different Specialists

Source	*SS*	*MS*	*df*	*F*	*P*
Physical Symptoms					
Between Group	26977.78	8992.59	3	12.72	0.000
Within Group	221986.17	706.96	314		
Psychological Symptoms					
Between Group	13015.66	4338.55	3	6.53	0.000
Within Group	208528.68	664.10	314		
Sexual Symptoms					
Between Group	13423.47	4474.49	3	10.76	0.000
Within Group	130104.14	415.66	314		

Table 14

Post hoc Analysis Indicating Precise Differences Regarding Specialists Consulted

Types of Symptoms	Comparison Variable (Speciality)		Mean Differences
Physical Symptoms	Hakims	Homeopaths	13.28**
		Infertility Specialists	15.92**
	General Physicians	Homeopaths	19.11**
		Infertility Specialists	21.75**
Psychological Symptoms	Infertility Specialists	Hakims	-16.22**
		Homeopaths	-16.15**
		General Physicians	-14.37**
Sexual Symptoms	Hakims	Homeopaths	14.21**
		Infertility Specialists	18.87**
		General Physicians	10.98**

**p < 0.05, **p< 0.01*

Manifestation of Dhat Syndrome Symptoms in relation to marital status of the patients was examined using one way analysis of variance followed by post-hoc analysis. Three groups of participants i.e. married, single and divorced / separated were compared on types of symptoms manifestation. It was found that three groups significantly differed in physical symptoms, whereas there was no significant difference in psychological and sexual symptoms (tables 15 and 16).

Table 15

Effect of Marital Status on DSSC Symptoms (One way ANOVA)

Source	*SS*	*MS*	*df*	*F*	*P*
Physical Symptoms					
Between Group	10260.33	5130.16	2	6.77	0.001
Within Group	238703.62	757.78	315		
Psychological Symptoms					
Between Group	1211.63	605.81	2	0.86	0.42
Within Group	220332.71	699.46	315		
Sexual Symptoms					
Between Group	2241.48	1120.74	2	2.49	0.08
Within Group	141286.12	449.96	315		

Table 16

Post hoc Analyses Indicating Precise Differences in Relation to Marital Status

Dependent Variable	Comparison Variable (Marital Status)		Mean Differences
Physical Symptoms	Unmarried	Married	11.90**

**p < 0.05, **p< 0.01*

Note: only significant results reported

Post hoc analysis indicated that unmarried patients manifested significantly more Physical Symptoms compared to married patients. Effect of education on manifestation of symptoms was examined using one way ANOVA followed by post hoc analysis. Results are given in tables 17 and 18. Results revealed that education had significant effect only on manifestation of physical symptoms.

Table 17

Effect of Education on DSCC Symptoms (One way ANOVA)

Source	*SS*	*MS*	*df*	*F*	*P*
Physical Symptoms					
Between Group	29277.68	4182.52	7	5.87	0.000
Within Group	219422.58	712.41	308		
Psychological Symptoms					
Between Group	6087.44	869.63	7	1.25	0.27
Within Group	214042.24	694.94	308		
Sexual Symptoms					
Between Group	1856.13	265.16	7	0.59	0.76
Within Group	137325.14	447.31	308		

Table 18

Post hoc Analyses Indicating Precise Differences in Relation to Education

Dependent Variable	Comparison variable (Education)		Mean Differences
Physical Symptoms	MA/MSc	Less than Primary	-34.09**
		Primary	-28.25**
		Middle	-29.06**

**p < 0.05, **p< 0.01*

Note: only significant results reported

Investigation in to the precise differences revealed that less educated participants were experiencing significantly more physical symptoms compared to those educated up to masters level.

Patients with different professions were compared on symptom manifestation using one way analysis of variance (tables 19 and 20). It was found that type of profession had significant effect on manifestation of physical symptoms. Post hoc analysis revealed that unskilled workers manifested significantly more physical symptoms compared to those working in professional category.

Table 19

Effect of Profession on Dhat Syndrome Symptoms (One way ANOVA)

Source	*SS*	*MS*	*df*	*F*	*P*
Physical Symptoms					
Between Group	29220.80	3652.60	8	5.17	0.000
Within Group	211637.60	705.45	300		
Psychological Symptoms					
Between Group	11755.94	1469.49	8	2.31	0.02
Within Group	190834.86	636.11	300		
Sexual Symptoms					
Between Group	8368.73	1046.09	8	2.54	0.01
Within Group	122813.85	410.74	300		

Table 20

Post hoc Analyses Indicating Precise Differences in Relation to Profession

Dependent Variable	Comparison Variable		Mean Differences
Physical Symptoms	Professional Group	Unskilled Workers	25.07*

**p < 0.05, **p< 0.01*

Note: only significant results reported

In order to compare patients from local, rural and urban background on symptom manifestation, one way analysis of variance was used (tables 21 and 22). Three groups of participants significantly differed in psychological and sexual symptoms manifestation. However, post-hoc analyses revealed significant differences

only in sexual symptoms. Patients from rural background manifested significantly more sexual symptoms compared to those from urban background.

Table 21

Effect of Locality on Dhat Syndrome Symptoms Manifestation (One way ANOVA)

Source	*SS*	*MS*	*df*	*F*	*P*
Physical Symptoms					
Between Group	281.65	140.82	2	.17	.84
Within Group	247000.66	823.33	300		
Psychological Symptoms					
Between Group	7024.59	3512.29	2	5.32	.005
Within Group	197844.12	659.48	300		
Sexual Symptoms					
Between Group	2207.86	1103.92	2	3.00	.05
Within Group	109939.17	367.69	300		

Table 22

Post hoc Analyses indicating Precise Differences in Relation to Locality

Dependent Variable	Comparison Variable		Mean Difference
Sexual Symptoms	Rural	Local	34.26**
		Urban	37.67**

**p < 0.05, **p< 0.01*

Note: only significant results reported,

A series of independent sample t-test analyses was carried out to examine symptom manifestation in relation to perceived parental strictness, patients' perception of their major problem and perceived causes of Dhat Syndrome (table 23).

It was found that those patients who perceived their parents strict reported more physical symptoms. However, there was no difference on other two subscales of Dhat Syndrome Symptom Checklist (DSSC).

Table 23

Comparison of Patients having Strict Parents with those having Non Strict Parents on DSSC Symptoms

Dhat Syndrome Sub Scales	Parental Strictness				*t*	*P*
	Strict n = 150		Not Strict n = 166			
	M	*SD*	*M*	*SD*	*t*	
Physical Symptoms	59.21	26.43	52.99	29.03	-1.98	0.04
Psychological Symptoms	43.09	28.32	38.81	24.53	-1.44	0.15
Sexual Symptoms	36.96	18.97	37.74	23.36	0.32	0.74

df = 315

4.3.1.2 Manifestation of Symptoms in Relation to Modes of Semen Loss

A set of t-test analysis was performed to compare symptom manifestation in relation to the mode of semen loss i.e. “emission, nocturnal emission, premature ejaculation, discharge before urine and discharge after urine” (tables 24 -28).

Table 24

Symptoms Manifestation in Relation to Emissions as a Mode of Semen Loss

Dhat Syndrome Subscales	“Emissions”				*t*	*P*
	Absent n = 234		Present n = 83			
	M	*S.D*	*M*	*S.D*		
Physical Symptoms	53.65	27.99	61.60	27.59	-2.23	0.02
Psychological Symptoms	39.07	27.89	45.10	21.39	-1.79	0.07
Sexual Symptoms	34.76	19.24	43.93	24.91	-3.43	0.001

df = 316

Table 25

Symptoms Manifestation in Relation to Nocturnal Emissions as a Mode of Semen Loss

Dhat Syndrome Subscales	"Nocturnal Emissions"				*t*	*P*
	Absent n = 176		Present n = 141			
	M	*SD*	*M*	*SD*		
Physical Symptoms	52.78	29.35	59.42	26.00	-2.10	0.03
Psychological Symptoms	38.65	27.23	43.14	25.31	-1.50	0.13
Sexual Symptoms	34.72	18.22	40.21	24.17	-2.30	0.02

df = 316

Table 26

Symptoms Manifestation in Relation to Premature Ejaculation as a Mode of Semen Loss

Dhat Syndrome Subscales	"Premature Ejaculation"				*t*	*P*
	Absent n =161		Present n = 156			
	M	*SD*	*M*	*SD*		
Physical Symptoms	51.67	26.80	59.67	28.76	2.56	0.01
Psychological Symptoms	40.05	23.02	41.27	29.63	-41	0.68
Sexual Symptoms	35.14	19.10	39.25	23.08	-1.72	0.08

df = 316

Table 27

Symptoms Manifestation in Relation to Discharge before Urine as a Mode of Semen Loss

Dhat Syndrome Subscales	"Discharge Before Urine"				*t*	*P*
	Absent n =234		Present n = 83			
	M	*SD*	*M*	*SD*		
Physical Symptoms	52.76	28.77	64.13	24.19	-3.21	0.001
Psychological Symptoms	38.31	26.16	47.25	26.29	-2.01	0.008
Sexual Symptoms	34.96	20.79	43.36	21.32	-3.13	0.002

df = 316

Table 28

Symptoms Manifestation in Relation to Discharge after Urine as a Mode of Semen Loss

Dhat Syndrome Subscales	"Discharge After Urine"				*t*	*P*
	Absent n =211		Present n = 106			
	M	*SD*	*M*	*SD*		
Physical Symptoms	51.85	27.64	63.47	27.41	-3.54	0.000
Psychological Symptoms	39.13	27.56	43.67	23.90	-1.44	0.15
Sexual Symptoms	36.72	22.22	38.08	19.14	-0.53	0.59

df = 316

Patients reporting "emissions", "nocturnal emissions" and "discharge before urine" as modes of semen loss manifested significantly more physical, psychological and sexual symptoms compared to those who did not. Those who reported premature ejaculation as a mode of semen loss showed significantly more Psychological Symptoms compared to those who did not. Patients perceiving discharge after urine as mode of semen loss reported significantly more physical symptoms.

4.3.1.3 Manifestation of Dhat symptoms in Relation to Perceived Causes of Dhat Syndrome

A set of independent sample t-test Analysis was carried out to examine symptoms manifestation in relation to perceived causes of Dhat Syndrome. Results are presented in tables 29-33.

Table 29

Symptoms Manifestation in Relation to Nocturnal Emissions as a Perceived Cause

Dhat Syndrome Subscales	"Nocturnal Emissions"				*t*	*P*
	Absent n =258		Present n =57			
	M	*SD*	*M*	*SD*		
Physical Symptoms	50.96	27.54	56.41	30.38	1.59	0.11
Psychological Symptoms	39.23	24.76	47.20	32.71	-2.06	0.03
Sexual Symptoms	35.48	18.50	44.03	29.19	-2.80	0.005

df = 314

Table 30

Symptoms Manifestation in Relation to Masturbation as a Perceived Cause

Dhat Syndrome Subscales	"Masturbation"				*t*	*P*
	Absent n =43		Present n =272			
	M	*SD*	*M*	*SD*		
Physical Symptoms	37.30	27.56	58.69	27.14	4.79	0.000
Psychological Symptoms	40.88	25.94	48.01	34.70	1.12	0.26
Sexual Symptoms	38.98	27.89	36.73	19.81	0.65	0.51

df = 311

Table 31

Symptoms Manifestation in Relation to Homosexuality as a Perceived Cause

Dhat Syndrome Subscales	"Homosexuality"				*t*	*P*
	Absent n =203		Present n = 112			
	M	*SD*	*M*	*SD*		
Physical Symptoms	53.40	29.18	60.08	25.71	-2.02	0.04
Psychological Symptoms	42.10	30.19	38.08	17.82	1.28	0.19
Sexual Symptoms	36.37	22.08	38.19	19.12	-0.74	0.45

df = 314

Table 32

Symptoms Manifestation in Relation to Heterosexuality as a Perceived Cause

Dhat Syndrome Subscales	"Heterosexuality"				*t*	*P*
	Absent n =276		Present n = 39			
	M	*SD*	*M*	*SD*		
Physical Symptoms	55.29	28.59	59.21	24.71	-0.81	0.41
Psychological Symptoms	39.56	26.80	48.49	23.08	-1.97	0.04
Sexual Symptoms	35.90	20.60	45.06	22.75	-2.56	0.01

df = 315

Table 33

Symptoms Manifestation in Relation to Exposure to Pornographic Literature as Cause

Dhat Syndrome Subscales	"Pornographic Literature"				*t*	*P*
	Absent n =145		Present n = 171			
	M	*SD*	*M*	*SD*		
Physical Symptoms	50.65	29.66	60.09	26.10	-3.00	0.003
Psychological Symptoms	40.39	31.84	40.91	21.07	0.17	0.86
Sexual Symptoms	35.71	23.77	38.16	18.45	-1.02	0.31

df = 315

Analysis pertaining to perceived causes of Dhat Syndrome indicated that patients perceiving nocturnal emission as a cause of Dhat Syndrome reported significantly more psychological and sexual symptoms. On the other hand, those who perceived masturbation, heterosexual relations and exposure to pornographic literature as causes of Dhat Syndrome reported significantly more physical symptoms.

Homosexual relations as perceived cause of Dhat Syndrome were associated with psychological and sexual symptoms.

4.3.1.4 Predictors of Dhat Syndrome Symptoms

A set of stepwise multiple regression analysis was carried out to examine significant predictors of Dhat Syndrome symptoms. Demographic characteristic of the patients, their concerns, disease related variables, perceived implications of Dhat Syndrome for patient's life were entered in regression equations as predictors of Dhat Syndrome. Stepwise method was employed and separate analyses were carried out for three subscales of Dhat Syndrome Symptom Checklist (DSSC). The results are given in tables 34 - 36.

First set of analysis was pertaining to "Physical Symptoms" and it worked out in eight steps revealing eight significant predictors of physical symptoms. Fear of sexual weakness emerged as the strongest predictor of physical symptoms in patients and alone accounted for unique variance of 46 % *($\Delta R^2 = 0.20, p < 0.000$).* Among demographic variables patients' education emerged as predictor of physical symptoms in the second step. Other significant predictors included patients' concern about discharge before urine, perceived effect of Dhat Syndrome on physical and sexual health of the patient, intensity of the problem, information about sex and diet as a causal factor of Dhat Syndrome.

Table 34

Stepwise Regression Analysis for Demographic Characteristics and Other Variables as Predictors of DSSC Physical Symptoms

Predictors	R^2	ΔR^2	R^2 *Change*	*F*	*F Change*	β	*t*
1.Fear of Sexual Weakness	.21	.20		62.62**		.46	7.91***
2.Fear of Sexual Weakness	.29	.28	.07	47.30**	25.4***	.41	7.36***
Education						-.28	-5.04***
3.Fear of Sexual Weakness	.33	.32	.04	38.70**	15.57**	.39	7.15***
Education						-.27	-4.96***
Concern Discharge before Urine						.21	3.94***
4.Fear of Sexual Weakness	.36	.35	.03	33.21**	11.48**	.33	5.82***
Education						-.24	-4.56***
Concern Discharge before Urine						.18	3.49***
Effected Physically						.19	3.39***
5.Fear of Sexual Weakness	.39	.37	.02	29.30**	9.19**	.24	4.00***
Education						-.22	-4.13***
Concern Discharge before Urine						.16	3.15***
Effected Physically						.17	3.13**
Intensity of Problem						.18	3.03**
6.Fear of Sexual Weakness	.41	.39	.01	26.4**	7.52**	.22	3.66***
Education						-.27	-4.90***
Concern Discharge before Urine						.15	2.90**
Effected Physically						.19	3.38**
Intensity of Problem						.21	3.43**
Information about Sex						.15	2.72**
7.Fear of Sexual Weakness	.42	.40	.01	24.14**	6.61**	.17	2.73**
Education						-.30	-5.37***
Concern Discharge before Urine						.15	3.04**
Effected Physically						.21	3.77***
Intensity of Problem						.18	3.06**
Information about Sex						.16	2.90**
Resulted in Sexual Weakness						.14	2.57**

Table 34 (continued)

Stepwise Regression Analysis for Demographic Characteristics and Other Variables as Predictors of DSSC Physical Symptoms

Predictors	R^2	ΔR^2	R^2 Change	F	F Change	β	t
8.Fear of Sexual Weakness	.43	.41	.01	21.92**	4.42*	.18	2.85**
Education						-.31	-5.51***
Concern Discharge before Urine						.16	3.17**
Effected Physically						.21	3.89***
Intensity of Problem						.19	3.15**
Information about Sex						.14	2.64**
Resulted in Sexual Weakness						.14	2.58**
Diet as a Cause						-.10	-2.02*

**p<0.05, **p<0.0i, ***p<0.001*

The analysis pertaining to "Psychological Symptoms" as an outcome variable worked out in six steps employing that six variables emerged as significant predictors of psychological symptoms accounting for substantial variance *($\Delta R^2 = 0.34$, $p < 0.000$).* Sexual weakness emerged as a major predictor accounting for unique variance of 43% *($\Delta R^2 = 0.18$, $p < 0.000$)* for psychological symptoms.

Table 35

Stepwise Regression Analysis for Demographic Characteristics and Other Variables as Predictors of DSSC Psychological Symptoms

Predictors	R^2	ΔR^2	R^2 Change	F	F Change	β	t
1.Sexual Weakness	.18	.18		53.10***		.43	7.28***
2.Sexual Weakness	.24	.24	.06	38.56***	19.75***	.36	
Effected Psychologically						.26	6.25***
							4.44***
3.Sexual Weakness	.28	.27	.03	30.67***	11.67***	.37	6.45***
Effected Psychologically						.25	4.50**
Effected Physically						.18	3.38***
4.Sexual Weakness	.31	.30	.02	26.34***	9.81**	.37	6.69***
Effected Psychologically						.22	3.87***
Effected Physically						.21	3.83***

Table 35 (continued)

Stepwise Regression Analysis for Demographic Characteristics and Other Variables as Predictors of DSSC Psychological Symptoms

Predictors	R^2	ΔR^2	R^2 Change	F	F Change	β	t
Information About Sex						.17	3.13**
5.Sexual Weakness	.33	.31	.01	22.51***	5.25*	.32	5.32***
Effected Psychologically						.20	3.61***
Effected Physically						.22	4.06***
Information About Sex						.16	2.99**
Lack of Interest in Sex						.13	2.29*
6.Sexual Weakness	.34	.32	.01	19.85***	4.73*	.33	5.54***
Effected Psychologically						.19	3.338**
Effected Physically						.20	3.80***
Information About Sex						.16	2.96**
Lack of Interest in Sex						.13	2.22*
Concern Emission						.11	2.17*

**p<0.05, **p<0.0i, ***p<0.001*

It was revealed that perceived effects of Dhat Syndrome on different aspects of patient's life, the extent of information regarding sex and patients' concern about semen loss through emission emerged as significant predictors of psychological symptoms.

The regression analysis carried out for Dhat Syndrome Symptom Checklist (DSSC) sexual symptom sub scale as an outcome variable, worked out in six steps. The patients' perception that Dhat Syndrome had resulted in "Sexual Weakness" emerged as major predictor accounting for unique variance of 56% *(ΔR^2= 0.31, p < 0.000).* Altogether six variables emerged as significant predictors of "Sexual Symptoms" accounting for enormous amount of variance *(ΔR^2 = .48, p < 0.000).*

Table 36

Stepwise Regression Analysis for Demographic Characteristics and Other Variables as Predictors of DSSC Sexual Symptoms

Predictors	R^2	ΔR^2	*R2 Change*	*F*	*F Change*	β	*t*
1.Sexual Weakness	.31	.31		108.73***		.56	102.42***
2.Sexual Weakness	.37	.36	.05	68.05***	18.95***	.57	11.03**
Concern Emission						.22	4.35***
3.Sexual Weakness	.41	.40	.04	53.44***	15.62***	.52	10.00***
Concern Emission						.20	3.96***
Effected Psychologically						.20	3.95***
4.Sexual Weakness	.43	.42	.02	44.26***	10.23**	.45	8.15***
Concern Emission						.19	3.95***
Effected Psychologically						.18	3.60***
Lack of Interest in Sex						.17	3.20**
5.Sexual Weakness	.46	.45	.03	39.96***	13.29***	.49	8.95***
Concern Emission						.16	3.29***
Effected Psychologically						.16	3.20**
Lack of Interest in Sex						.22	4.07***
Patient Age						-.19	-3.64***
6.Sexual Weakness	.48	.47	.02	35.92***	8.85**	.48	8.80***
Concern Emission						.15	3.10**
Effected Psychologically						.16	3.30**
Lack of Interest in Sex						.23	4.29***
Patient Age						-.16	-3.02**
Effected Physically						.14	2.97**

**p<0.05, **p<0.0i, ***p<0.001*

Implications of Dhat Syndrome for Sexual, Psychological and Physical Health as well as patients' concerns about semen loss through emission and patient age were among the significant predictors of "Sexual Symptoms" in patients.

4.3.2 Physical and Psychological implications of Dhat Syndrome

Based upon the caseness criterion of General Health Questionnaire (GHQ-28) (Goldberg & Williams, 1988), the patients were divided in two groups i.e. those who scored above caseness score were considered as being anxious or depressed. This

criterion allowed demarcating the absence and presence of psychological distress in patients. It was revealed that significantly more participants fell above caseness scores on anxiety and somatic complaints. However, on social dysfunctioning and depression significantly less number of patients were above the caseness scores (table 37).

Table 37

Anxiety, Depression, Somatic Complaints and Social Dysfunctioning in Patients on the basis of GHQ-28 Caseness

GHQ Variables	*f*	*P*	*χ2*	*p*
Anxiety				
Absent	108	27	32.71	.001
Present	210	73		
Depression				
Absent	266	83.6	144.01	.001
Present	52	16.4		
Somatic Complaints				
Absent	87	34	65.20	.001
Present	231	66		
Social Dysfunction				
Absent	198	62	19.13	.001
Present	120	38		

Multivariate analysis of variance was performed to examine physical and psychological implications of Dhat Syndrome as measured using General Health Questionnaire (GHQ-28). Analysis revealed that patients significantly differed in the experience of Anxiety, Depression, Somatic Complaints and Social Dysfunctioning *($F = 815.66, p<0.001$)*. Further to multivariate analysis, a series of paired sample t-test analysis was conducted to examine specific differences in the General Health Questionnaire (GHQ-28) subscales scores (table 38).

Table 38
Paired Sample Test Comparing Scores on GHQ-28 Subscales (N = 318)

GHQ Subscales	*M*	*SD*	*t*	*P*
Pair 1				
Somatic Complaints	11.52	4.43	5.05	0.001
Anxiety	10.49	5.25		
Pair 2				
Somatic Complaints	11.52	4.43	3.14	0.001
Social Dysfunction	10.79	3.73		
Pair 3				
Somatic Complaints	11.52	4.43	26.0	0.001
Depression	3.66	4.89		
Pair 4				
Anxiety	10.49	5.25	-1.10	0.26
Social Dysfunction	10.79	3.73		
Pair 5				
Anxiety	10.49	5.25	21.64	0.001
Depression	3.66	4.89		
Pair 6				
Social Dysfunction	10.79	3.73	24.89	0.001
Depression	3.66	4.89		

df = 317

Analysis revealed that patients experienced Somatic complaints the most and depression the least. Severity of Somatic complaints was significantly more compared to that of social dysfunctioning, anxiety and depression. Patients experienced significantly more anxiety compared to social dysfunctioning and depression. However, there was no significant difference in severity of anxiety and social dysfunctioning.

4.3.2.1 Physical and Psychological Implications in Relation to Demographic Characteristics and other Variables

This section provides information regarding physical and psychological implications in relation to patients' and disease related characteristics. Relationship between demographic characteristics and physical and psychological symptoms is explored using correlation analysis (table 39).

The analysis revealed that there was significant negative relationship of patients' age and education with physical and psychological symptoms. Young patients were experiencing more somatic complaints and social dysfunctioning whereas less educated patients experienced more anxiety and somatic complaints. Duration of disease had a significant positive relationship with depression, social dysfunctioning and somatic complaints. Degree of religiosity had negative relationship with somatic complaints and social dysfunctioning.

Table 39

Relationship of Physical and Psychological Symptoms with Demographic and other related Characteristics

Variables	Somatic Complaints	Anxiety	Social Dysfunctioning	Depression
Patient Age (N = 313)	-0.17**	-0.05	-0.18**	-0.05
Patient Income (N = 258)	-0.08	0.00	-0.02	-0.02
Patient Education (N = 316)	-0.22**	-0.16**	-0.10	-0.05
Duration of Problem (N = 307)	0.14*	0.09	0.11*	0.17**
No of Extramarital Relations (N = 30)	-0.28	-0.36*	-0.23	-0.14
Diet (N = 314)	0.11	0.05	-0.09	0.18**
Degree of Religiosity (N = 317)	-0.11*	-0.07	-0.18*	-0.10
Effected Daily Life (N = 317)	0.28*	0.32**	0.17**	0.37**
Effected Psychologically (N = 318)	0.12*	0.16**	0.07	0.33**
Effected Physically (N = 318)	0.38**	0.26**	0.21**	0.18**
Effected Sex life (N = 318)	0.06	0.21**	0.01	0.27**
Fear of Sexual Weakness (N = 318)	0.41**	0.36**	0.22**	0.13**
Lack of Interest in Sex (N = 312)	0.09	0.11*	0.01	0.35**
Resulted in Sexual Weakness (N =312)	0.22**	0.28**	0.03	0.42**
Dispute with Wife (N = 130)	0.39**	0.34**	0.27**	0.37**
Dispute with Partner (N = 100)	0.25*	0.22*	0.14	0.25*
Fear of Separation with Wife (N=119)	0.34**	0.22*	0.18*	0.13
Frequency of Intercourse (N=121)	0.31**	0.26**	0.24**	0.32**
Concern Emission (N = 312)	0.18	0.06	0.06	0.22**
Concern Nocturnal Emission (N=313)	0.22**	0.18**	0.18**	0.21**

Table 39 (continued)

Relationship of Physical and Psychological Symptoms with Demographic and other related Characteristics

Variables	Somatic Complaints	Anxiety	Social Dysfunctioning	Depression
Concern Premature Ejaculation (N=312)	0.13*	0.03	0.07	0.07
Concern Discharge before Urine (N=312)	0.30**	0.26**	0.17**	0.06
Concern Discharge after Urine (N=312)	0.03	0.04	0.03	0.05
DSSC Physical Symptoms (N=318)	0.70**	0.62**	0.43**	0.24**
DSSC Psychological Symptoms N=318)	0.44**	0.53**	0.40**	0.62**
DSSC Sexual Symptoms (N = 318)	0.39**	0.43**	0.23**	0.66**

**p <0.01, **p <0.001*

There was positive relationship in the perceived effects of Dhat Syndrome on patients' life with psychological and physical symptoms they experienced. More the patients were concerned about semen loss through different modes i.e. emission, nocturnal emission, premature ejaculation, discharge before urine, more psychological symptoms they experienced. Moreover patients' higher scores on Dhat Syndrome Symptom Checklist (DSSC subscales) showed positive relationship with physical and psychological symptoms.

A series of one way analysis of variance followed by post hoc analysis were performed. The first set of analysis was carried out to examine difference in Physical and Psychological implications of dhat syndrome in relation to consultation with different professionals. Patients significantly differed in somatic complaints and depression in relation to the type of professional they were consulting (table 40).

Table 40

Physical and Psychological Implications in Relation to the Type of Recruitment Speciality

Source	*SS*	*MS*	*df*	*F*	*P*
Anxiety					
Between Group	152.96	50.99	4	1.86	0.13
Within Group	8584.50	27.33	314		
Somatic Complaints					
Between Group	243.99	81.33	4	4.25	0.001
Within Group	6003.35	19.11	314		
Depression					
Between Group	1102.63	367.54	4	17.74	0.000
Within Group	6504.68	20.71	314		
Social Dysfunction					
Between Group	31.74	10.58	4	0.75	0.52
Within Group	4398.55	14.00	314		

Table 41

Post hoc Analyses Indicating Precise Differences in Physical and Psychological Symptoms in Relation to the Recruitment Speciality

GHQ Sub scales	Comparison Variable (Speciality)		Mean Differences
Somatic Complaints	General Physician	Homeopaths	2.07*
Depression	Homeopaths	Infertility Specialists	2.48*
	Hakims	General Physicians	3.67*
		Infertility Specialists	5.47*
		Homeopaths	2.98*

$p<0.05$

Those experiencing somatic complaints were consulting medical professional significantly more compared to the ones recruited from Homeopaths. On the other hand, those recruited from Homeopathic clinics were experiencing significantly more depression compared to those consulting Infertility Specialists. Patients consulting Hakims (the traditional medicine practitioners) were experiencing more depression compared to those recruited from other professionals.

Marital status showed significant effect on physical and psychological symptoms. Post-hoc analysis revealed that unmarried patients were significantly more anxious, were experiencing more somatic complaints and social dysfunctioning compared to their married counterparts. However, three groups of patients did not differ significantly in depression (tables 42-43).

Table 42

Physical and Psychological Implications in Relation to Marital Status

Source	*SS*	*MS*	*df*	*F*	*P*
Anxiety					
Between Group	232.80	118.40	2	4.31	0.01
Within Group	8504.66	26.99	315		
Somatic Complaints					
Between Group	378.74	189.32	2	10.16	0.001
Within Group	5868.59	18.83	315		
Depression					
Between Group	133.69	66.84	2	2.81	0.06
Within Group	7473.62	23.72	315		
Social Dysfunction					
Between Group	359.20	179.80	2	13.89	0.001
Within Group	4430.30	12.92	315		

Table 43

Post hoc Analyses Indicating Precise Differences in Physical and Psychological Symptoms in Relation to Marital Status

Dependent Variable	Comparison Variable (Marital Status)		Mean Differences
Anxiety	Unmarried	Married	1.77*
Somatic Complaints	Unmarried	Married	2.28*
Social Dysfunction	Unmarried	Married	2.19*

$p<0.05$
Note: only significant results reported

A series of independent sample t-test analysis was carried out to compare psychological distress in patients in relation to degree of religiosity. It was found that the patients who considered themselves religious were experiencing significantly less

depression, reported less somatic complaints and social dysfunctioning compared to those who were less religious.

Table 44

Physical and Psychological Symptoms in Relation to Religiosity

GHQ Subscales	Religiosity				*t*	*P*
	Less Religious n = 96		Religious n = 221			
	M	*SD*	*M*	*SD*		
Anxiety	11.15	4.63	10.19	5.49	1.50	0.13
Somatic Complaints	12.45	3.84	11.11	4.63	2.48	0.01
Depression	4.71	5.36	3.21	4.62	2.52	0.01
Social Dysfunctioning	11.59	4.11	10.45	3.52	2.50	0.01

df = 315

4.3.2.2 Predictors of Psychological Symptoms

A set of multiple regression analysis was carried out by entering patients' demographic characteristics, disease related characteristics, patients' perception about modes of semen loss and Dhat Syndrome subscales scores as predictors of Physical and Psychological symptoms. Stepwise regression analysis was employed and separate sets of analyses were carried out for four subscales of General Health Questionnaire (GHQ-28).

In first set of analysis, variables were regressed against anxiety. Analysis worked out in four steps with four significant predictors of anxiety. Dhat Syndrome Symptom Checklist (DSSC) physical and psychological symptoms emerged as strong predictors of anxiety *($\Delta R^2 = 0.46, P < 0.000$)*. In addition, perceived effect of Dhat Syndrome on daily life and patients' concern about semen loss due to discharge before urine emerged significant predictors of anxiety *($\Delta R^2 = 0.49, P < 0.000$).*

Table 45

Stepwise Regression Analysis for Demographic Characteristics, Other Variables and Dhat Syndrome Symptoms as Predictors of Anxiety

Predictors	R^2	ΔR^2	R^2 Change	*F*	*F Change*	β	*t*
1.DSSC Physical	.37	.37		140.46***		.61	11.85***
2. DSSC Physical	.46	.45	.08	99.25***	36.64***	.44	8.12***
DSSC Psychological						.33	6.05**
3. DSSC Physical	.48	.48	.02	73.46***	12.28**	.43	8.12***
DSSC Psychological						.29	5.26***
Effected Daily Life						.17	3.50**
4. DSSC Physical	.50	.49	.01	58.23***	6.91**	.39	6.98***
DSSC Psychological						.31	5.68***
Effected Daily Life						.16	3.47**
Concern Discharge Before Urine						.12	2.63**

**p<0.05, **p<0.0i, ***p<0.001*

When variables were entered in regression equation as predictors of depression, seven significant predictors emerged in seven steps. Dhat Syndrome Symptom Checklist (DSSC) sexual and Dhat Syndrome Symptom Checklist (DSSC) psychological symptoms were two major predictors of depression in patients *(ΔR^2 = 0.50, $p < 0.000$).* In addition, perceived psychological effect of Dhat Syndrome on patient, Dhat Syndrome Symptom Checklist (DSCC) physical symptoms, extent of information about sex and concern about nocturnal emission predicted depression in patients *($\Delta R^2 = 0.55$, $p < 0.000$).*

Table 46

Stepwise Regression Analysis for Demographic Characteristics, Other Variables and Dhat Syndrome Symptoms Predictors of Depression

Predictors	R^2	ΔR^2	R^2 Change	F	F Change	β	t
1. DSSC Sexual	.47	.47		213.94***		.69	14.62***
2. DSSC Sexual	.50	.49	.02	118.21***	12.22**	.50	7.02
DSSC Psychological						.24	3.49**
3. DSSC Sexual	.52	.51	.01	84.51***	9.00**	.47	6.63***
DSSC Psychological						.22	3.12**
Effected Psychologically						.14	3.00**
4. DSSC Sexual	.53	.52	.01	66.46***	6.40**	.49	6.97***
DSSC Psychological						.27	3.75***
Effected Psychologically						.13	2.69**
DSSC Physical						-.13	-2.53**
5. DSSC Sexual	.55	.54	.01	56.17***	7.50**	.47	6.77***
DSSC Psychological						.31	4.28***
Effected Psychologically						.14	3.06**
DSSC Physical						-.14	-2.85**
Information about Sex						-.12	-2.74**
6. DSSC Sexual	.56	.54	.01	48.76***	5.81**	.46	6.67***
DSSC Psychological						.32	4.43**
Effected Psychologically						.14	2.98**
DSSC Physical						-.16	-3.20**
Information about Sex						-.12	-2.78**
Concern Nocturnal Emission						.10	2.14**
7. DSSC Sexual	.57	.55	.01	43.51***	5.83**	.44	6.35***
DSSC Psychological						.31	4.39***
Effected Psychologically						.11	2.41**
DSSC Physical						-.17	-3.37**
Information about Sex						-.11	-2.48*
Concern Nocturnal Emission						.11	2.64*
Effected Daily life						.11	2.41*

**p<0.05, **p<0.0i, ***p<0.001*

Regression analysis pertaining to "Somatic Complaints" as an outcome variable was completed in six steps with six significant predictors. Dhat Syndrome Symptom Checklist (DSSC) physical and Dhat Syndrome Symptom Checklist (DSSC) sexual symptoms were stronger predictors of somatic complaints alone accounting for substantial amount of variance *($\Delta R^2 = 0.50, p < 0.000$).*

Dhat Syndrome Symptom Checklist (DSSC) physical and sexual symptoms along with patients' concern with semen loss (through emission, nocturnal emission and discharge before urine) and effect on patients' daily life were significantly predictors of somatic complaints in patients. These variables altogether accounted for enormous amount of variance *($\Delta R^2 = 0.54, p < 0.000$).*

Table 47

Stepwise Regression Analysis for Demographic Characteristics, Other Variables and Dhat Syndrome Symptoms as Predictors of Somatic Complaints

Predictors	R^2	ΔR^2	R^2 Change	*F*	*F* Change	β	*t*
1. DSSC Physical	.47	.47		213.13***		.69	14.59***
2. DSSC Physical	.50	.50	.02	11854***	13.01***	.61	11.94**
DSSC Sexual						.18	3.60***
3. DSSC Physical	.52	.51	.01	84.13***	8.09**	.56	10.83***
DSSC Sexual						.19	3.87***
Concern Discharge before Urine						.13	2.84**
4. DSSC Physical	.53	.52	.01	65.94***	5.95**	.55	10.54***
DSSC Sexual						.18	3.74***
Concern Discharge before Urine						.13	2.85**
Concern Nocturnal Emission						.11	2.44*
5. DSSC Physical	.54	.53	.01	54.91***	5.58**	.54	10.52***
DSSC Sexual						.15	2.97**
Concern Discharge before Urine						.13	2.84**
Concern Nocturnal Emission						.12	2.65**
Effected Daily Life						.11	2.36*

Table 47 (continued)

Stepwise Regression Analysis for Demographic Characteristics, Other Variables and Dhat Syndrome Symptoms as Predictors of Somatic Complaints

Predictors	R^2	ΔR^2	R^2 Change	F	F Change	β	t
6. DSSC Physical	.55	.54	.01	47.41***	5.06*	.54	10.50***
DSSC Sexual						.13	2.59*
Concern Discharge before Urine						.14	3.19**
Concern Nocturnal Emission						.09	2.14*
Effected Daily Life						.12	2.60**
Concern Emission						.10	2.25*

**p<0.05, **p<0.0i, ***p<0.001*

Regression analysis regarding "Social Dysfunctioning", worked out in two steps with two significant predictors. Dhat Syndrome Symptom Checklist (DSSC) psychological and physical symptoms emerged as significant predictors of patient social dysfunctioning accounting for significant amount of variance *($\Delta R^2 = 0.21$, $p < 0.05$).*

Table 48

Stepwise Regression Analysis for Demographic Characteristics, Other Variables and Dhat Syndrome Symptoms as Predictors of Social Dysfunctioning

Predictors	R^2	ΔR^2	R^2 Change	F	F change	β	t
1.DSSC Psychological	.17	.16		47.94***		.41	6.92***
2.DSSC Psychological	.22	.21	.05	33.72***	16.34***	.28	4.24***
DSSC Physical						.26	4.04***

**p<0.05, **p<0.0i, ***p<0.001*

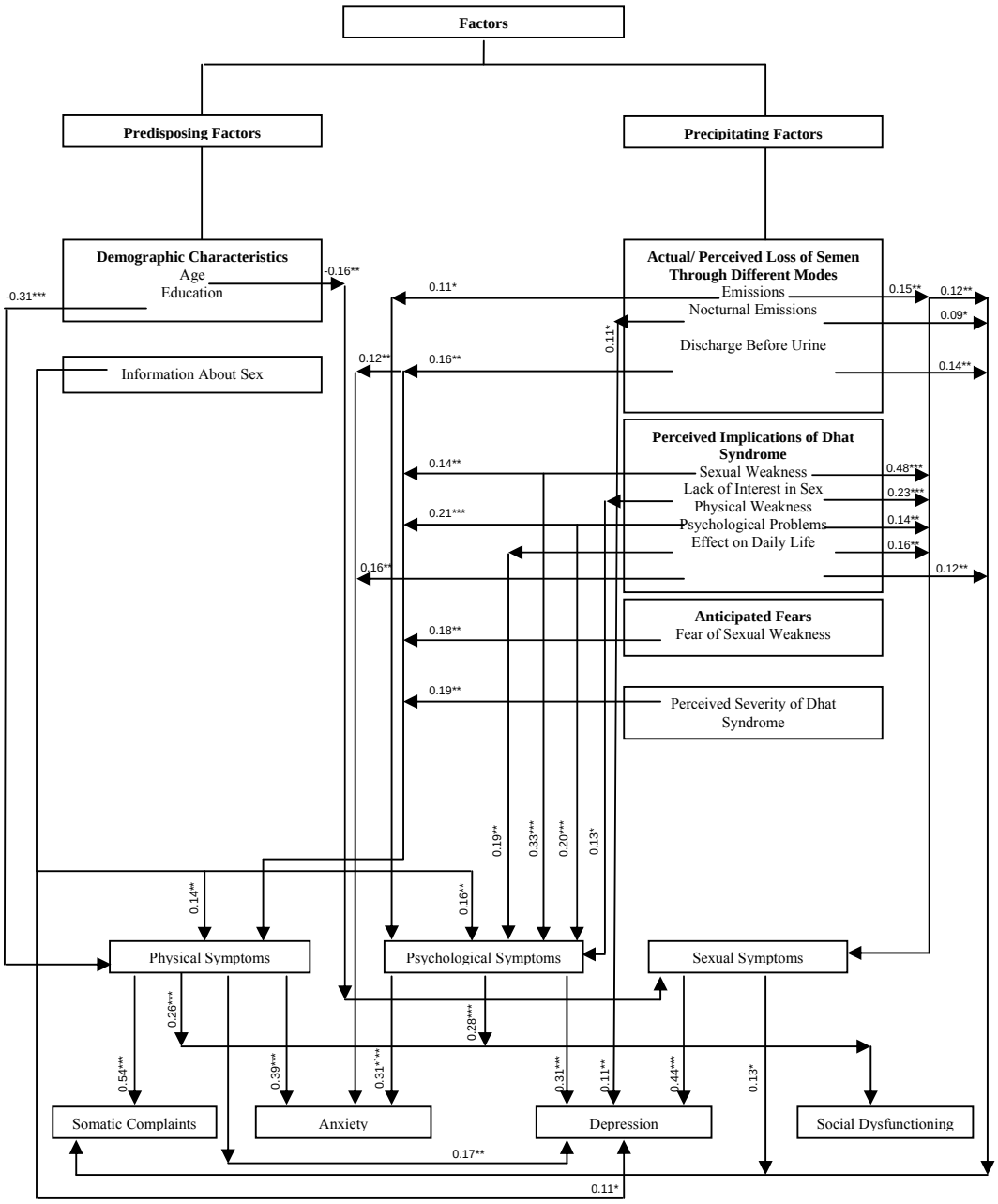

Figure 7. Psychological Model of Dhat Syndrome based on Statistical Analysis

4.3.3 Psychological Model of Dhat Syndrome based on Statistical Analysis

Psychological model of Dhat Syndrome based on existing literature was proposed by the researcher in introduction section (Figure 1 & Pg. 52). The model included predisposing factors and precipitating factors as potential determinants of Dhat Syndrome symptoms. Predisposing factors included demographic characteristics of the patient, information about sex, parental attitude and degree of religiosity. Precipitating factors included actual / perceived loss of semen loss through different modes of semen loss, actual / perceived implications of Dhat Syndrome for the patient and perceived severity of Dhat Syndrome. Predisposing and precipitating factors in addition to Dhat Syndrome Symptoms i.e. Physical, Psychological, and Sexual symptoms were hypothesized to determine psychological distress in patients (Pg.52).

The model was tested using Path analysis employing hierarchal stepwise regression analyses. In the first step, precipitating factors and predisposing factors were entered in hierarchical regression equation with Dhat Syndrome Symptoms as outcome variables. Three sets of separate analyses were carried out for Physical, Psychological and Sexual Symptoms. In second set of analysis, predisposing factors, precipitating factors and Dhat Syndrome Symptoms were entered in regression equations with somatic complaints, anxiety, depression and social dysfunction as outcome variables. Four sets of separate analyses were carried out for outcome variables.

Figure 7 (Pg.135) is graphic presentation of resultant model indicating significant predictors of Dhat Syndrome Symptoms and Psychological distress. The values shown are the beta weights showing the amount of variance accounted for by a particular variable for a specific outcome variable. Among predisposing factors, age,

education and information about sex determined Dhat Syndrome Symptoms. Loss of semen through emissions, nocturnal emissions, discharge before urine; perceived implications of Dhat Syndrome in form of sexual & physical weakness, lack of interest in sex, psychological problems, anticipated fear of sexual weakness and severity of Dhat Syndrome were important determinants of Dhat Syndrome Symptoms.

Psychological distress (somatic complaints, anxiety, depression and social dysfunction) were partially determined by predisposing factors, precipitating factors and Dhat Syndrome symptoms. Somatic complaints in patients were determined by actual / perceived loss of semen loss, perceived effect of Dhat Syndrome on patients' daily life, Dhat Syndrome physical and sexual symptoms. Anxiety in patients was predicted by perceived loss of semen, and Dhat Syndrome physical and psychological symptoms. Lack of information about sex, perceived loss of semen, Dhat Syndrome physical, psychological and sexual symptoms were antecedents of depression in patients. Dhat Syndrome physical symptoms were the only predictor of social dysfunction in patients. Dhat Syndrome physical and sexual symptoms thus were major determinants of psychological distress in Dhat Syndrome patients.

4.3.4 Summary of the Findings

Major findings of the present research are as follows:

1. Majority of Dhat Syndrome patients were consulting Hakims and Homeopaths. Specific analyses revealed that patients experiencing physical and sexual symptoms were consulting Hakims and those experiencing psychological symptoms were consulting Hakims, Homeopaths and General Physicians. Moreover, patients manifesting somatic complaints were consulting General Physicians.
2. Friends were the major source of information about sex, Dhat Syndrome and its treatment.
3. Demographic profile of Dhat Syndrome patient in Pakistan emerged to be a young, single and less educated from lower socioeconomic class.
4. Modes of semen loss (reasons for referral) in case of majority were emission, nocturnal emission, discharge before urine and discharge after urine.
5. Perceived causes of Dhat Syndrome by majority were masturbation, exposure to pornographic literature and diet.
6. Dhat Syndrome was perceived to have negative implications for patient's life in general and for their physical, psychological and sexual health in particular.
7. A vast majority of patients had either developed sexual weakness or had fear of developing it as a result of semen loss.
8. Major manifestation of Dhat Syndrome was in form of physical and psychological symptoms. Physical symptoms were manifested the most and sexual symptoms the least.
9. Single and less educated patients manifested significantly more physical symptoms compared to their married and educated counterparts.

10. Patients from rural background manifested significantly more sexual symptoms compared to those from urban background.
11. Those patients who perceived their parents strict manifested more physical symptoms.
12. Sexual weakness, patient education, discharge before urine, perceived effects of Dhat Syndrome on physical and sexual health, perceived severity of the problem, lack of information about sex and diet were significant predictors of "Physical Symptoms of Dhat" in patients.
13. Sexual weakness, perceived effects of Dhat Syndrome on different aspects of patients' life, lack of information about and emission as mode of semen loss emerged as significant predictors of "Psychological Symptoms of Dhat" in patients.
14. Sexual weakness, perceived effects of Dhat Syndrome on physical, psychological and sexual health, emission as mode of semen loss and patient age were significant predictors of "Sexual Symptoms of Dhat" in patients.
15. Majority of Dhat Syndrome patients fell above caseness scores on somatic complaints and anxiety.
16. Patients reported somatic complaints and anxiety the most and depression the least.
17. Single patients were experiencing significantly more anxiety, somatic complaints and social dysfunctioning compared to their married counterparts.
18. Patients' age showed negative relationship with somatic complaints and anxiety and education had negative relationship with somatic complaints and social dysfunctioning.

19. Those patients who considered themselves religious reported less somatic complaints, social dysfunctioning and depression.
20. Duration of disease had positive relationship with somatic complaints, anxiety and depression in Dhat Syndrome patients.
21. There was positive relationship between perceived effects of Dhat Syndrome on patients' life and somatic complaints, anxiety and depression.
22. Patients scoring higher on Dhat Syndrome Symptom Checklist (DSSC) subscales reported more somatic complaints, anxiety, social dysfunctioning and depression.
23. Dhat Syndrome Symptom Checklist (DSSC) physical and sexual symptoms, different modes of semen loss (emission, nocturnal emission and discharge before urine) and perceived implications of semen loss for patients' daily life emerged as significant predictors of somatic complaints in patients.
24. Anxiety in patients was predicted by Dhat Syndrome Symptom Checklist (DSSC) physical and psychological symptoms, perceived implications of Dhat Syndrome for their daily life and discharge before urine as a mode of semen loss.
25. Dhat Syndrome Symptom Checklist (DSSC) sexual, psychological, physical symptoms, perceived psychological effect of Dhat Syndrome on patient, lack of information about sex and nocturnal emission as mode of semen loss predicted depression in patients.
26. Dhat Syndrome Symptom Checklist (DSSC) psychological and Dhat Syndrome Symptom Checklist (DSSC) physical symptoms emerged as significant predictors of social dysfunctioning in patients.

CHAPTER 5

DISCUSION, LIMITATIONS, IMPLICATIONS AND CONCLUSIONS

The present research was pioneering in investigating an important issue pertaining to male sexual health which is a tabooed and neglected area in Pakistan. The study had manifold aims: a. Construction of an indigenous Dhat Syndrome symptoms checklist; b. To examine demographic characteristics of Dhat Syndrome patients; c. To examine most common modes of semen loss d. To examine manifestation of Dhat Syndrome and e. To examine physical and psychological implications of Dhat Syndrome for the patients. A number of studies were carried out and hypotheses were formulated to achieve the said aims. Descriptive and Inferential Statistics were employed to test the hypotheses.

In discussion section, major emphasis is on the findings pertaining to the main study which focused on psychological and physical implications of Dhat Syndrome in Pakistan. Findings are discussed in the light of existing literature as well in the cultural context. This section also encompasses main conclusions drawn from different studies, implications of the findings in Pakistani context, limitations of the study as well as suggestions and recommendations for future research.

5.1 Discussion

Prior to discussion, it is important to point out that while comparing findings from the present study with those of earlier research, one needs to be aware of the major differences in the present study and previous researches. First major difference is the type of samples being recruited in earlier research. The present study included Dhat Syndrome patients using ICD-10 criteria, and excluded those with psychiatric

and organic co morbidity. Patients in the present study were recruited from diverse professional settings where Dhat Syndrome patients in Pakistan were more likely to report and they were identified through a pilot study. Whereas most of the previous researches were carried out either in psychiatric outpatient clinics, sexual clinics or on general public. Earlier research did not have Dhat Syndrome as the primary consideration for recruitment of participants. Semen loss concern was one among the other sexual or psychiatric disorders. Therefore, two sets of sample are not comparable. Moreover, most of the earlier research is carried out on non-Muslim population, whereas the present study was carried out on Muslim population. The present study therefore is unique in many ways: a. It identified professionals where potential patients with semen loss concern would report; b. Recruited patients from diverse settings; c. Included patients with semen loss concern and patients were identified using ICD-10 criteria and d. Excluded patients with any other pre morbid or co morbid psychiatric and organic condition.

In the following section, major findings of the study are discussed in the light of existing literature as well as in the context of sociocultural scenario of Pakistan. In order to make it more comprehensible discussion is divided into different subsections.

5.1.1 Consultation with Professionals

The first main finding of the present study is that majority of Dhat Syndrome patients were consulting Hakims and Homeopaths indicating that majority was seeking treatment outside the allopathic system of medicine. Hikmat and Homeopathic treatments are traditional healing systems in Pakistan where Hikmat is synonymous to Ayurvedic medicine in India. Ayurvedic specialists promote herbal

and dietary treatment (Dash, 1974, Nichter, 1981a) and so do Hakims in Pakistan (Qarshi, n.d.).

This finding is in line with earlier research in which majority of the patients were reported to seek Ayurvedic treatment for semen loss and it was reported as the most preferred treatment (Dash, 1974; De Silva, & Dissayanake, 1989; Verma, et al., 2000, 2001). Research on treatment seeking patterns among men for sexual health problems has revealed that allopathic treatment was most preferred for many of the sexual health problems such as masturbation, "*Garmi"* (heat), pus discharge, burning sensation in urine. Ayurvedic treatment has been preferred and believed to be effective for many problems such as early ejaculation, quality and quantity of semen, wet dreams, erectile problems and sexual weakness (Verma, et al., 2000, 2001).

One plausible explanation for consulting Hakims and Homeopaths is that myths about sexuality particularly semen loss are widely spread by quacks and so called sex specialists (Mishra, 1963) who have been endorsing semen loss being harmful for health for the last hundred of years (Brahmbhatt, 1998). In the Indian subcontinent, semen loss is considered dangerous and harmful for sexual and physical health (Bhugra & Buchman, 1989; Raguram, Jadhav, & Weiss, 1994; Singh, 1985; Sharma, & Das, 1977; Wig, 1960) and this belied is generated mostly by Homeopaths and Ayurvedic healers and Hakims through advertisements pasted on walls of inner city, in national newspapers and magazines (Bruhmbhatt, 1998; Khan, 2005). Since traditional healers reinforce fears and beliefs, henceforth tendency to consult these professionals is enhanced (Wig, 1998).

It can also be argued that culture has an important role in shaping illness behaviors and the cultural beliefs which are carried over the years are instrumental in reinforcing such behaviors (Ranjith, & Mohan, 2006). Significance of semen

preservation for physical and sexual health has been emphasized in various cultures (Raguram, Jadhav & Weiss, 1994). Immense emphasis has been laid on semen in folk literature (Carstairs, 1956), in Indian mythology and Ayurvedic medicine (Bhugra, & Buchanan, 1989; Kar, & Verma, 1978; Nakra, Wig, & Verma, 1977; Zimmermann, 1988). Similar beliefs are held in Sri Lanka and Unani (Greek) medicine (Kakar, 1982; Obeyesekere, 1976). All these factors could have been probable explanations for Dhat Syndrome patients consulting more with traditional healers.

These findings are substantiated by another set of analysis pertaining to consultation of a particular professional in relation to the types of Dhat Syndrome symptoms experienced by the patients in present study. Data from the present study indicated that patients experiencing more physical and sexual symptoms were consulting Hakims and those experiencing psychological symptoms were consulting Hakims, Homeopaths as well as General Physicians. This analysis also revealed Hakims being the most preferred for the treatment of diverse symptoms. Though there are no specific studies to precisely support above findings, earlier research provides partial support to these findings. De Silva and Dissanayake (1989) reported Ayurvedic medicine being the most preferred treatment for semen loss and very few of the participants in their study consulted allopathic practitioners. Similarly 42% men in Verma, Rangaiyan, Singh, Sharma and Pelto, (2001)'s study considered Ayurvedic treatment effective for semen loss and only 1/5 reported allopathic treatment for wet dreams. An earlier research in Pakistan (Khan, 2005) also revealed that majority of patients with semen loss concern had been consulting Hakims and Homeopaths.

Data pertaining to Physical and Psychological symptoms assessed using General Health Questionnaire (GHQ 28) revealed that patients with somatic complaints were consulting General Physicians and those experiencing depression

were consulting Hakims and Homeopaths. Consultation with General Physicians regarding somatic complaints is understandable as somatic and physical complaints could be interpreted as medical problem. Moreover in Pakistan, there is a general tendency among people to consult medical professionals for most health related problems and somatic and physical symptoms gain due attention by the family in particular and society in general. Thereby in case of somatic symptoms, the patient and relatives ensure that the patient receives medical attention. In an earlier research by Clyne (1964) patients were reported to consult medical professionals for general weakness as well as impotency. One can argue that Clyne's study was conducted in UK where access to medical professionals is easier and psychosexual problems are equally acknowledged.

Consultation with Hakims and Homeopaths as compared to medical professionals (General Physicians and Infertility Specialists) in case of depression illustrates that Dhat Syndrome patients preferred traditional healers over medical professionals for psychological problems. This is in line with common sense and trend in Pakistan where General Physicians and Infertility Specialists are consulted for medical problems of specific nature. As discussed in earlier section, Hakims and Homeopaths claim to offer treatment for diverse problems which could have increased likelihood of consultation with these professionals. Moreover, considering the majority of patients being from lower socioeconomic status, Hakims and Homeopaths could be more affordable. Depression in this part of the world is still not considered a disease as its manifestation is not exclusively somatic.

The previous research also lends support to our findings. De Seliva and Dissayanke (1989) found that majority of their patients had been consulting Ayurvedic healers and Homeopaths and very few were consulting allopathic

practitioners. Their study though did not carry out specific analysis pertaining to consultation of traditional healers for specific types of symptoms. In a study by Bhatia and Malik (1991), patients reported that Dhat Syndrome had caused physical and mental illness and more than half of them believed in tonics for its intervention. Similarly many other studies have reported manifestation of Dhat Syndrome in somatic complaints, anxiety and depression, however there is no specific information pertaining to specificity of professionals being consulted in relation to symptom manifestation (Bhatia, 1999; Bhatia, Choudhry, & Shome, 1996; Chadda, 1995; Chadda & Ahuja, 1990; Singh, 1985). This is also noteworthy that most of previous studies have been conducted at psychiatric out patients or psychosexual clinics where the patients were either presenting with psychosexual disorders or with semen loss concern. In Trollope-Kumar (2001)'s study majority of Dhat Syndrome patients were consulting medical professionals for physical complaints and some of them were consulting Ayurvedic professionals for treatment of semen loss. In an earlier exploratory research in Pakistan by Khan (2005, for detail also see study 1 and Appendix D) on Dhat Syndrome patients also revealed that majority of the patients were consulting Hakims and Homeopaths. However, detailed analysis regarding consultation was not provided.

In the present study, majority of the patients reported to seek sex related, Dhat related and treatment related information from friends, posters, advertisements, magazines and Hakims and Homeopaths. Friends, literature and traditional healers being the major sources of information could be explained in the context of Pakistani culture. Pakistan is a Muslim country with conservative and repressive views about sex and there is no provision of formal sex education. Family members feel inhibited about dissemination of information regarding sex. Friends and Hakims were the major

source of information about sex, Dhat Syndrome and its treatment for the patients with Dhat Syndrome.

Considering Pakistani conservative society where sex is considered a tabooed area, inhibitions about seeking information from family members is not an unexpected finding. Patients could have felt more comfortable in seeking information from their peer. Moreover, traditional healers such as Hakims emphasize sexual strength and propagate sexual weakness as death. Advertisements are pasted on street walls, printed in newspapers and pamphlets which highlight the significance of semen, thereby attracting those with semen loss concern. These findings are in line with the findings by De Silva and Dissanayake (1989), Brahambhatt (1998) and Wig (1998) who found Ayurvedic practitioners as the major source of information about sex, semen loss and its intervention. These results are also in consensus with those by Mishra (1963) who reported people with semen loss concern consulting special clinics for Dhat treatment. Further support for our findings is provided by Behere and Nataraj (1984) and Bhatia and Malik (1991) whose participants also reported friends being the major source of information about Dhat and its treatment.

The said sources of information could have perpetuated Dhat Syndrome patients' beliefs and misconceptions about sexual health and increased the likelihood of patients' consultation with traditional healers (Behere, & Nataraj, 1984; Bhatia, & Malik, 1991).

5.1.2 Demographic Characteristics of Dhat Syndrome Patients

Data from present research suggested a demographic profile of Dhat Syndrome patient in Pakistan as a young, unmarried, less educated, from lower socioeconomic class and rural background. This profile is similar to the one

suggested by earlier research (Ranjith, & Mohan, 2006). Malhotra and Wig (1975) found that Dhat Syndrome was more prevalent in young men from lower socioeconomic class with conservative background. A typical profile of Dhat Syndrome patients emerged from earlier research is a young man, either unmarried or recently married, less educated (Behere, & Nataraj, 1984; Bhatia, & Malik, 1991; Khan, 2005), from rural background with traditional beliefs (Wig, 1998).

It can be argued that among young people, various sexual concerns are evoked as they are either entering or have entered manhood. Ayurvedic and traditional healers highlight significance of sexual health and attribute poor physical and sexual health to semen loss which makes young people anxious and worried about semen loss. There is a burgeoning research evidence to support the finding regarding Dhat Syndrome being common in younger age group (Bashayak, & Thapa, 1985; Behere, & Nataraj, 1984; Bhatia, & Malik, 1991; Bhatia, Chaudhry, & Shome, 1997; Bhugra, & Buchanan, 1989; De Silva, & Dissayaneke, 1989; Malhotra, & Wig, 1975; Morrone, et al., 2002; Khan, 2005; Nakra, Wig, & Verma, 1978; Singh, 1985; Verma, et al., 2000; 2001; Zimmermann, 1988). In Pakistan, great emphasis is placed on masculinity and manhood and a young man who is about to get married or is recently married could be under considerable pressure due to social expectations about sexual performance. In addition, being from rural background and conservative families, where views about sex are rigid, and sharing and seeking information about sex is not approved, young men with sexual concerns turn to friends, literature and traditional healers who further reinforce and endorse their anxiety about semen loss (Behere, & Nataraj, 1984; Bhatia, & Malik, 1991; Carstairs, 1973).

The present study revealed that majority of the patients with Dhat Syndrome was unmarried. Earlier research provides mixed findings pertaining to the marital

status of the patients with Dhat Syndrome. For example, Behere and Nataraj (1984) and Singh (1985)'s findings are inconsistent with findings of the present study as majority of their participants were married. Yet in another study married and unmarried patients were equal in number (Chadda, & Ahuja, 1990). However, our finding are in consensus with Bhatia and Malik (1991) and Dhikav and colleagues (2007)' findings who also reported Dhat Syndrome being more common among unmarried young men. One could explain this finding from Pakistani sociocultural perspective. There have been various myths and misconceptions around semen loss which are common in the subcontinent and have been propagated for several years.

5.1.3 Modes of Semen Loss

In the present study, majority of the patients reported various modes of semen loss including premature ejaculation, nocturnal emission, discharge before and after urine being the most common. The modes of semen loss in fact were also the main causes of referral for treatment. These results are consistent with the findings from earlier research in which premature ejaculation and nocturnal emissions have been reported as the major modes of semen loss (Bhatia, & Malik, 1991; Bhatia, Choudhry, & Shome, 1996; Dewaraja, & Sasaki, 1991a; Dwivedi, 1979; Malhotra, & Wig, 1977; Perme, et al., 2005; Singh, et al., 1987; Verma, et al., 2001; Wig, 1975). Moreover, there is substantial empirical evidence suggesting nocturnal emission and discharge (dhat) in urine as major problems perceived to cause physical and sexual weakness (Behere, & Nataraj, 1984; Bhatia, et al., 1992; Chadda, & Ahuja, 1990; De Silva, & Dissayanake, 1989; Morrone, et al., 2002; Trollope-Kumar, 2001).

5.1.4 Perceived Causes of Dhat Syndrome

Masturbation, exposure to pornographic literature and diet were perceived as the major causes of dhat syndrome by majority of Dhat Syndrome patients in the present study. Masturbation was reported as the common practice among them and they had been indulged in this practice for a longer period of time. Masturbation is condemned in Islam and overindulgence in masturbation could have induced guilt in patients (Ali, & Nanwatvi, 1398; Mududi, 1979). Masturbation as a major perceived cause of Dhat Syndrome has also been reported by a number of researches (Bhatia, & Malik, 1991; Bhatia, Chaudhry, & Shome, 1997; Chadda, & Ahuja, 1990; Dewaraja, & Sasaki, 1991a; Dwivedi, 1979; Kulanyagam, 1979; Lakhani, Gandhi, & Collumbien, 2001; Morrone, et al., 2002; Nakra, Wig, & Verma, 1978; Perme, et al., 2005; Verma, et al., 2000).

Exposure to pornographic material as a perceived cause of semen loss could be for the reason that exposure to such material could have increased sexual excitement thereby resulting in discharge. Alter (1997) argued that problems related to sexuality are commonly prevalent in boys from lower middle class who read sex related literature as it appeals to them particularly when they suffer from semen loss and other sex related problems. Moreover, a conservative culture where discussion on matters related to sex and information pertaining to sex is restricted, reading such material is not a strange finding.

Diet was also perceived as one of the most common causes of Dhat Syndrome. Diet is given immense importance in this part of the world and myths pertaining to diet are reinforced by traditional healers. These findings are supported by Bhatia and Malik (1991), De Silva and Dissayanake (1989), Malhotra and Wig (1975), and Verma and colleagues' (2000) studies. Findings from studies carried out in India, Sri

Lanka and Pakistan indicate similarity in beliefs, myths and misconceptions about Dhat Syndrome held in the Indian subcontinent. For several years Ayurvedic medicine has emphasized proper diet for maintenance of quality and quantity of semen and particularly heating diet e.g. fish, pepper and eggs are considered to be associated with semen depletion (Bottero, 1991). The concept of hot – cold food is indigenous to Indian subcontinent (Pool, 1987, cited in Bottero, 1991) and similar concept of hot-cold food exists in Hikmat (traditional medicine in Pakistan) which prescribes herbal treatment and abstinence from specific food as prevention as well as treatment (Qarshi, n.d.).

5.1.5 Perceived Implications of Dhat Syndrome

Exploration of perceived implications of Dhat Syndrome was one of the major aims of the present study. Analysis revealed that patients perceived Dhat Syndrome having serious implications for their physical, psychological and sexual health. The patients attributed various physical, psychological and sexual problems to semen loss. Significance of semen for men's healthy functioning and its loss being dangerous for physical, psychological and sexual health has been emphasized by Indian mythology and traditional healers for several years (Money, Prakasam, & Joshi, 1991). Moreover, such beliefs are reinforced through literature, friends and social expectations about sexual performance. There is substantial empirical evidence from earlier research on perception of semen loss having debilitating effects (Bhatia, 1999; Bhatia, & Malik, 1991; Bhatia, et al., 1992; Bhatia, Chaudhry, & Shome, 1997; Carstairs, 1956; Chadda, & Ahuja, 1990; Chaturvedi, 1988; Dewaraja, & Sasaki, 1991a; Dhikav, et al., 2007; Malhotra, & Wig, 1975; Morrone et al., 2002; Nakra,

Wig, & Verma, 1978; Ranjith, Mohan, & Chandarsekaram, 2005; Singh, 1985; Verma, et al., 2000; 2001; Wen, & Wang, 1980).

In the present study a vast majority either reported to have developed sexual weakness or had fear of developing sexual weakness as a result of semen loss. This indicates the perceived significance of semen for sexual performance. In Pakistan sexual weakness is also known as "*Mardana Kamzori*" and is considered synonymous to death. It is associated with impotency and is a matter of stigma and shame for the afflicted. In marital life, implications of sexual weakness are far too serious and it may lead to separation and divorces among couples. Health quakes and so called traditional healers strengthen such fears through advertisement and literature. Sample of the present study comprised mainly young and unmarried males and fear of sexual weakness among them is not a strange finding. Sexual weakness or fear of sexual weakness has been attributed to semen loss by Dhat Syndrome patients in earlier researches (Bhatia, & Malik, 1991; Behere, & Nataraj, 1984; Chadda, & Ahuja, 1990; De Silva, & Dissayanake 1989; Dwivedi, 1979; Nakra, Wig, & Verma, 1978; Verma, et al., 2000).

5.1.6 Manifestation of Dhat Syndrome

Patients completed Dhat Syndrome Symptom Checklist (DSSC) which helped assess manifestation of Dhat Syndrome in Pakistan. The main finding in this context is that indigenous symptom checklist was developed and it revealed three categories of symptoms i.e. physical, psychological and sexual. Each category contained a host of symptoms which corresponded well with existing literature.

Dhat Syndrome patients participating in the present study manifested physical symptoms the most and sexual symptoms the least. Considering Dhat Syndrome a sex related problem, one would expect patients to report more sexual symptoms but on the

contrary they reported more physical symptoms. Other researchers have also reported Dhat Syndrome patients reporting host of physical symptoms such as physical weakness, ache and pains, abdominal distress etc (Bhatia, et al., 1992; Carstairs, 1973; Chadda, & Ahuja, 1990; De Silva, & Dissanayake, 1989; Dwivedi, 1979; Morrone, et al., 2002; Nakra, Wig, & Verma, 1978; Paris, 1992; Perme, et al., 2005; Singh, 1985).

Most of researches on Dhat Syndrome have been conducted in India and Sri Lanka. Pakistan is a Muslim country with conservative, rigid and repressive attitude towards sex. In Pakistan physical diseases and conditions receive due attention and acknowledgment whereas sexual and psychological symptoms do not receive due recognition. Presentation of Dhat Syndrome in physical form therefore is not an unexpected finding. It is reiterated that Pakistan is a Muslim country where open discussion on the topic is prohibited. There is no formal sex education and problems pertaining to sex are likely to be misinterpreted and presented in form of physical complaints.

Furthermore, empirical evidence suggests that in conservative and repressive societies, psychopathologies are manifested in somatic form. Somatization is considered as important idiom through which people communicate their distress (Edwards, 1983). Research on Dhat Syndrome has also revealed that Dhat Syndrome has been manifested in hypochondriacal form (Bottero, 1991).

5.1.6.1 Symptoms Manifestation in Relation to Demographic and Family Characteristics

Marital status and education of the patients showed effect on symptoms manifestation. Unmarried and less educated patients manifested more physical symptoms. It could be for the reason that unmarried and less educated patients could have perceived Dhat Syndrome's debilitating effects on their physical health thereby

experiencing more physical symptoms. As discussed earlier, young and uneducated people in Pakistan are more vulnerable to develop concerns relating to semen loss. Several years ago, Carstairs (1961) in his exploratory study with less educated patients from rural background found them holding belief about semen loss having harmful implications for their physical health. Likewise, participants in Nakra, Wig and Verma (1978)'s study whose majority was from rural background and educated up to high school held strong conviction that semen loss was detrimental to their physical and psychological health. In Paris (1992) and Bhatia and Malik (1991)' studies, respondents attributed physical symptoms to semen loss. In line with this finding are those by Singh (1985) whose sample being illiterate in majority manifested physical symptoms as well as depressed mood. Physical symptoms as major manifestation by young and uneducated patients were also reported by Chadda and Ahuja (1990). Verma and colleagues (2000, 2001) had majority of illiterate patients reporting variety of physical symptoms.

Finding pertaining to physical symptoms manifested significantly more by single men compared to married men are reinforced by the findings from earlier researches (Bashayak, & Thapa, 1985; Collumbien, et al., 1998; Collumbien, Das, & Bohidar, 2001). In her subsequent survey, Collumbien, et al., (2001) found single young men attributing their physical symptoms to semen loss. In a small scaled study, Morrone and colleagues (2002) had young patients presenting with diffused somatic complaints as a result of semen loss through masturbation.

In the present study, patients from rural background manifested significantly more sexual symptoms compared to those from urban background. This finding is similar to those by Carstairs (1956) and Nakra, Wig and Verma (1978) whose sample was mainly from rural background with rigid views about sex and they were

preoccupied with nocturnal emissions and masturbation. Sexual symptoms were reported among majority of the men from Mumbai slum area and a very high proportion of them had been seeking treatment for sexual problems (Verma, et al., 2000, 2001). Similarly, Lakhani, Gandhi and Collumbien (2001) in a study found that 22 of 50 men among their sample were from rural background and their major concern was sexual problems such as sexual weakness, semen loss, erectile dysfunction, shrinking of penis and infertility.

Another important finding of the present study was effect of perceived parental strictness on manifestation of symptoms. The patients who perceived their parents strict reported significantly more physical symptoms. However, there was no significant effect of parental strictness on sexual and psychological symptoms. Though there is no direct empirical evidence in the context of Dhat Syndrome supporting or refuting this particular finding, it can be argued that having strict parents would present physical symptoms to seek their attention. Moreover, it has been documented that parental strictness and suppressive attitude is associated with various somatic symptoms in Asian culture (Carstairs, 1973).

5.1.6.2 Symptoms Manifestation in Relation to Modes of Semen Loss

Analyses pertaining to modes of semen loss and symptoms manifestation revealed differential relationship among modes of semen loss and symptoms manifestation. Those patients who reported emissions and nocturnal emissions as modes of semen loss, reported more physical and sexual symptoms. Discharge before urine was associated with all types of symptoms, whereas discharge after urine and premature ejaculation were associated with physical symptoms.

Previous research on Dhat Syndrome has not looked into precise association of modes of semen loss with the types of symptoms manifested. However, the generic empirical findings are consistent with our findings. For instance, Carstairs (1956) in his preliminary work on Dhat Syndrome found patients reporting nocturnal emissions as the most frequent mode and manifesting physical, sexual and psychological symptoms. Nakra and colleagues (1998) in their research reported passing of semen through nocturnal emissions being associated with sexual problems such as erectile dysfunction. Wen and Wang (1980) conducted a study in which one third of their patients reported nocturnal emission and manifested host of physical and psychological symptoms.

Similarly in Behere and Nataraj (1984)'s research, majority of the patients viewed semen loss resulting either through whitish discharge in urine or through nocturnal emission or combination of both. Patients in their study complained a host of physical, sexual and psychological symptoms. Bhatia and colleagues (Bhatia, & Malik, 1991; Bhatia, Chaudhry, & Shome, 1996) in their studies found premature ejaculation as the commonest mode and psychological symptoms particularly anxiety and depression among patients with semen loss and impotence.

Research conducted by Deepak Charitable Trust (DCT, 1997) also indicated nocturnal emission as the major problem associated with sexual health concerns. Verma and associates (Verma et al., 2000) in their study on male sexual health problems concluded that premature ejaculation and nocturnal emission had serious implications for physical and sexual health hence generating concerns among men. Similarly Collumbien and colleagues (1998, 2000, 2001) found most of young men in her study complaining of nocturnal emissions and reporting physical symptoms.

Semen is considered valuable and its loss through different modes raises tremendous concerns and results in physical, sexual and psychological symptoms (Singh, 1985). In a study by Trollope - Kumar (2001), men consulting medical professionals attributed their physical symptoms to nocturnal emissions. In a research by Perme and colleagues (2005), patients complaining of nocturnal emission and other sexual complaints reported physical and psychological symptoms.

Sri Lankan researchers (De Silva, & Dissayanake, 1989) also reported similar findings. Nocturnal emissions and discharge through urine were the commonest modes of semen loss and four types of symptoms including somatic, psychological, sexual and genital were manifested by their sample. In a study by Chadda and Ahuja (1990) patients complained about passing Dhat with urine and more than 80% complained of somatic complaints including body weakness, aches and pain and half of them manifested psychological complaints.

Dhat Syndrome patients complaining of discharge before and after urine were included in Dhikav and associates' (2007) study. Depressive symptoms were most commonly reported by the participants of their study. Morrone and colleagues (2002) explored implications of semen loss for the patients complaining of semen loss through nocturnal emissions and passing of Dhat in urine. Their findings revealed semen loss having multifaceted implications i.e. somatic, psychological, social, cultural and religious.

5.1.6.3 Predictors of Dhat Syndrome Symptoms

In order to examine significant predictors of physical, psychological and sexual symptoms a series of stepwise regression analyses was carried out. Analysis pertaining to physical symptoms revealed that sexual weakness, patient education,

discharge before urine, perceived effects of Dhat Syndrome on physical and sexual health, severity of Dhat Syndrome, lack of knowledge about sex and diet emerged as significant predictors. It implies that the patients who were less educated, lacked knowledge of sex, perceived Dhat Syndrome having adverse impact on physical and sexual health, who perceived discharge before urine and diet being the causes of semen loss manifested more physical symptoms.

There is no direct empirical evidence to support findings from regression analysis as previous researches only used descriptive statistics and did not employ inferential statistics; therefore findings from the present study are not comparable to previous research. However, findings based on descriptive analysis of previous research, shows consistency with our findings (Bhatia, Chaudhry, & Shome, 1997; Bhatia, & Malik, 1991; Carstairs, 1956, 1961; Chadda, & Ahuja, 1990; De Silva, & Dissayanake, 1989; Dewaraja, & Sasaki, 1991a; Malhotra, & Wig, 1975; Nakra, Wig, & Verma, 1998; Paris, 1991; Perme, et al., 2005; Singh, Sharma, & Pelto, 2000; Verma, et al., 1998; Wen, & Wang, 1980).

Another set of regression analysis revealed that psychological symptoms in patients were predicted by sexual weakness, perceived negative impact of Dhat Syndrome for patients' life, lack of knowledge about sex and nocturnal emissions. As discussed earlier, none of the previous researches have employed advanced statistical procedures making comparison of the findings difficult. However, earlier research provides indirect support for these findings. Researches have revealed that psychological symptoms such as anxiety and depression among less educated patients and those who perceived Dhat Syndrome having negative impact on various aspects of the patient's life (Behere, & Nataraj, 1984; Bhatia, 1999; Bhatia, & Malik, 1991; Bhatia, Chaudhry, & Shome, 1997; Carstairs, 1957; Chadda, & Ahuja, 1990;

Chaturvedi, 1988; De Silva, & Dissaynake, 1989; Dewarja & Sasaki, 1991a; Dhikav, & Aggarwal, 2007; Morrone et al., 2002; Patel, & Oanman, 1999; Singh, 1985; Wen, & Wang, 1980).

Sexual symptoms in patients were predicted by patients' age and sexual weakness. The younger patients who had experienced sexual weakness reported more sexual symptoms. There is substantial empirical evidence to support findings pertaining to age (Bhatia, & Malik, 1991; Bhatia, Chaudhry, & Shome, 1996; Behere, & Nataraj, 1984; Chadda, & Ahuja, 1990; De Silva, & Dissaynake, 1989; Dewaraja, & Sasaki, 1991a; Dwivedi, 1979; Kulanayagan, 1979; Nakra, Wig, & Verma, 1978; Singh, 1985; Verma et al., 2000, 2001).

5.1.7 Physical and Psychological Implications of Dhat Syndrome

In the present study Dhat Syndrome patients were assessed using General Health Questionnaire (GHQ-28) for examining psychosocial implications of Dhat Syndrome. caseness scores for subscales of General Health Questionnaire (GHQ-28) were computed in order to examine presence of somatic complaints, anxiety, social dysfunctioning and depression in patients. Analysis revealed that majority of the patients was experiencing somatic complaints and anxiety. Earlier research has not used formal assessment measures and has not systematically investigated physical and psychological implications of Dhat Syndrome. Researches have though reported presence of anxiety and depression among patients with sexual concerns. Carstairs (1956, 1973) and Bhatia and Malik (1991) reported Dhat Syndrome patients being anxious with predominately physical symptoms. In Wen and Wang (1980)'s study, patients considered Dhat Syndrome as sexual neurosis and one fourth of their patients experienced anxiety along with somatization. Similarly in Bhere and Natraj (1984)'s

study, 38% patients reported anxiety and 46% reported somatic complaints. Singh (1985) in his study ruled out patients with psychiatric disorders yet his findings revealed that majority of the patients reported somatic complaints (74%) and more than half reported anxiety.

Semen has been considered as one of the most precious body fluids and its significance for normal functioning has been highlighted by Indian mythology and indigenous healers who reinforce beliefs about semen conservation. It is therefore understandable that loss of semen would produce anxiety among patients with Dhat Syndrome. Dhat Syndrome has also been referred to as neurosis of the East (Wig, 1994, 1998). De Silva and Dissayanake (1989) in their study on semen loss concern categorized symptoms reported by patients in four types and two of the categories included psychological symptoms mainly comprising of anxiety and somatic complaints.

In Chadda and Ahuja (1990)'s study, 80% of the patients reported somatic complaints and more than half reported anxiety and attributed their symptoms to semen loss. Lakhani, Gandhi and Collumbien (2001) reported majority of the participants in their study experiencing anxiety about sexual performance and impotence. Perme, Ranjith, Mohan and Chandraskaran (2005) carried out detailed formal assessment using Somatization Screening Index, Illness Behaviour Questionnaire, Somato Sensory Amplification Scale, Whitely index and Revised Chader Fatigue scale. Results suggested that patients with Dhat Syndrome scored higher on hypochondriacal beliefs and somatic complaints.

In the present study, comparison of symptoms on four subscales indicated that patients reported somatic complaints the most and depression the least. Anxiety was reported significantly more than social dysfunctioning and depression. There are no

researches which have examined differential physical and psychosocial implications of Dhat Syndrome; however there is empirical evidence suggesting somatic symptoms and anxiety being more prevalent among those concerned about semen loss (Behere, & Nataraj, 1984; Bhatia, 1999; Bhatia, & Malik, 1990; Bhatia, Chaudhry, & Shome, 1997; Chadda, & Ahuja, 1990; De Silva, & Dissayanake, 1989; Singh, 1985). In Perme and colleagues (2005)' comparative study, Dhat Syndrome patients scored higher on hypochondriacal beliefs compared to control group. Researchers have also reported mixed symptoms of anxiety and depression (Bhatia, 1999; Bhatia, Choudhry, & Shome, 1997) and have identified somatic, social, psychological, cultural and religious implications of Dhat Syndrome for the patients (Morrone, et al., 2002).

5.1.7.1 Physical and Psychological Symptoms in Relation to Demographic and Other Characteristics

Correlation analysis examining relationship of physical and psychological symptoms with demographic characteristics and other variables revealed interesting findings. Patients' age and education showed significant relationship with psychological symptoms. Younger patients reported more somatic complaints and social dysfunctioning. Less educated patients experienced more somatic complaints, anxiety and depression. It can be employed from these findings that Dhat Syndrome has serious psychosocial implications for younger and less educated patients.

Though previous research has not directly examined relationship of demographic characteristics with psychosocial symptoms, however profile of Dhat Syndrome patient proposed by previous research lends indirect support for this finding. Carstairs (1961) in his research reported young and less educated people

with semen loss being more psychologically affected. Similarly Nakra, Wig and Verma (1978)'s patients with same profile reported harmful effects of Dhat.

Semen loss is considered loss of some thing very precious and may result in a sense of grief. Singh (1985) in his study found majority of Dhat Syndrome patients were less educated young men and they reported depression and anxiety along with other complaints. There are several studies on less educated and young Dhat Syndrome patients experiencing psychological symptoms (Bhatia, & Malik, 1991; Bhatia, Sandeep, & Shome, 1996; Bhere, & Nataraj, 1984; Chadda, 1995; Chadda, & Ahuja, 1990; De Silva, & Dissanayake, 1989; Edwards, 1983; Kulanayagam, 1979; Lakhani, Gandhi, & Collumbien, 2001; Malhotra, & Wig, 1975). In a comparative study, Perme and colleagues (Perme, Ranjith, Moham, & Chandrasakaran, 2005) reported patients with Dhat Syndrome experiencing significantly more somatization and anxiety compared to control group. Young and less educated patients have been reported presenting with defused somatic symptoms (Morrone, et al., 2002) and depression (Dhikav, et al., 2007).

Another significant finding was that single patients were experiencing significantly more anxiety, somatic complaints and social dysfunctioning as compared to their married counterparts. Findings are in line with those of Kaulanayagam (1979), De Silva and Dissayanake (1989), Chadda and Ahuja (1990) who reported anxiety being prevalent among single men with semen loss. In Bhatia and Malik (1991)'s study majority of their participants were unmarried who were experiencing anxiety and physical symptoms. Several other studies have reported anxiety being more common among unmarried Dhat Syndrome patients (Bhatia, Choudhry, & Shome, 1997; Bashayak, & Thapa, 1985; Collumbien, et al., 1998; Lakhani, Gandhi, & Collumbien, 2001; Verma, et al., 2000). These studies however did not compare

single patients with married patients; therefore our findings are not directly comparable to the earlier research.

One plausible explanation for prevalence of significantly more symptoms among single patients compared to their married counterparts can be provided in the context of Pakistani culture, where extreme emphasis is placed on sexual performance, sexual strength and fertility. A typical profile of Dhat Syndrome patient in Pakistan as emerged from the present study is a young, single, less educated man from lower socio economic class. Understandably semen loss which has been associated with numerous misconceptions and myths such as impotency would be a matter of grave concern for single men who are about to get married. On the other hand, for married men who presumably have been settled in their marital lives semen loss could have posed less threat.

In the present study, religiosity showed negative relationship with somatic complaints anxiety and social dysfunctioning. This finding can be explained in the light of research which highlights importance of religion as a buffer against stress and people turn to religion in the moment of crisis. Moreover, faith in religion has been reported to have therapeutic effect and brings comfort to the person. This study is unique in the sense that it looked into relationship of religiosity with symptoms manifestation in the context of Dhat Syndrome. Previous researches examining patients' perception of Dhat Syndrome have found that masturbation and semen loss are perceived as sinful acts and hence induce guilt in them (e.g. Lakhani, Gandhi, & Collumbien, 2001). Morrone and associates (2002) in their study highlighted variety of implications of Dhat Syndrome, for the patients including cultural and religious.

5.1.7.2 Physical and Psychological Symptoms in Relation to Perceived Implications of Dhat Syndrome

Perceived implications of Dhat Syndrome showed relationship with Physical and psychological symptoms. The patients who feared developing sexual weakness manifested more somatic complaints, anxiety, social dysfunctioning and depression. Sexual worries have been reported to result in somatization and depression (Wen, & Wang, 1980). These findings are also substantiated by De Silva and Dissayanake (1989) in Srilanka who also emphasized that men sexual potency is valued immensely and considered an asset for masculinity. This also holds true for culture like Pakistan where men's sexual health is of prime importance.

Earlier research has revealed presence of anxiety, somatic symptoms and depression in patients with semen loss concern (Bhatia, & Malik, 1991; Chadda, 1995) though these studies have not established direct link of symptoms with fear of sexual weakness. In Verma, Rangaujan, Singh, Sharma and Pelto (2000)'s study, the participants were extremely concerned about "*Kamjori"* (sexual weakness) and it was the most worrisome and depressing for them. Sexual performance (Lakhani, Gandhi, & Collumbien, 2001) and anticipated harmful effects of semen loss in form of sexual weakness have been reported as a major reason of concern among men (Collumbien, 2001). Keeping in view Pakistani context where sexual weakness can have severe implications for marital and social functioning, presence of anxiety, depression and social dysfunctioning in patients is not an unexpected finding. Fear of sexual weakness and worry of losing sexual strength could have generated fear of impotence and infertility thereby resulting in psychosocial symptoms in them.

There was positive relationship between Dhat Syndrome symptoms manifestation and psychological symptoms in patients. It can be employed from this

finding that severity and extent of Dhat Syndrome had serious psychological and physical implications for the patients. Carstairs (1961) and De Silva and Dissayanake (1989) though did not carry out formal assessment for psychological symptoms but reported patients with semen loss concern being psychologically distressed. Several studies have reported Dhat Syndrome being associated with anxiety and depression (Bhattia, 1999; Bhatia, Choudhry, & Shome, 1996; Bhatia, & Malik, 1991; Behere, & Nataraj, 1984; Chadda, 1995; Chadda, & Ahuja, 1990; Nakra, Wig, & Verma, 1978; Singh, 1985; Wen, & Wang, 1980). In a recent small scaled study, Dhikav and co researchers (Dhikav, et al., 2007) also reinforced our findings.

It is important to point out here that most of the earlier studies were carried out on patients reporting at psychiatric settings, whereas the present study was distinct in the sense that it recruited Dhat Syndrome patients from non psychiatric settings. It is reiterated that none of the previous researches have employed inferential statistical analyses; therefore the present study has referred to findings from descriptive statistics from previous researches. Although in cross sectional research like the present one, it is not possible to establish cause and effect relationship, however it can be argued that intensity and extent of Dhat Syndrome symptoms could have been associated with Physical and Psychosocial symptoms in Dhat Syndrome patients.

5.1.7.3 Predictors of Psychological Symptoms

Separate sets of regression analysis were carried out to examine predictors of psychosocial symptoms in Dhat Syndrome patients. Analysis pertaining to somatic complaints as an outcome variable indicated that Dhat Syndrome Symptom Checklist (DSSC) physical and sexual symptoms along with perceived implications of Dhat Syndrome of patients' life and different modes of semen loss (emission, nocturnal

emission and discharge before urine) emerged as significant predictors of somatic complaints. The previous research has not examined predictors of somatic complaints in Dhat Syndrome patients, yet there is substantial empirical evidence suggesting physical and somatic complaints in patients which they attribute to semen loss resulting through various modes (Behere, & Natraj, 1984; De Silva, & Dissayanake, 1989; Malhotra, & Wig, 1975: Nakra, Wig, & Verma, 1978; Singh, 1985).

Analysis examining predictors of anxiety revealed that Dhat Syndrome Symptom Checklist (DSSC), physical and psychological symptoms , perceived implications of Dhat Syndrome for the patients' life and discharge before urine emerged as significant predictors of anxiety. Though there are several studies which have highlighted implications of Dhat Syndrome for the patients and have referred to different modes of semen loss, however findings from previous research are reported in isolation and are too simplistic (Bhatia, & Malik, 1991; Behere, & Nataraj, 1984; Carstairs, 1961; Chadda, & Ahuja, 1990; De Silva, & Dissayanake, 1989; Paris, 1991, 1992). It is understandable that severity and extent of Dhat Syndrome and its perceived impact on the patients' life could have raised anxiety among patients. In the present study though majority of patients reported premature ejaculation, nocturnal emissions and discharge after urine as the most common modes of semen loss, discharge before urine was source of concern and anxiety among them.

Depression among patients was predicted by Dhat Syndrome Symptom Checklist (DSSC), sexual, physical and psychological symptoms, perceived psychological implications of Dhat Syndrome for patients' life, lack of information about sex and nocturnal emissions. Sexual symptoms emerged as the strongest predictor of depression. Though Dhat Syndrome has alternately been referred to as semen loss anxiety, patients do report depression as well. None of the existing

research has looked into predictors of depression among Dhat Syndrome patients. However, depression has been reported among Dhat Syndrome patients by number of researches (Bhatia, & Malik, 1991, Bhatia, Choudhry, & Shome, 1996; De Silva, & Dissayanake, 1989; Dhikav, et al., 2007; Mumford, 1996; Singh, 1985).

Dhat Syndrome has been perceived as harmful for physical and sexual health and this notion has been propagated by traditional healers and quacks in particular, who offer remedies for sexual problems (Kakar, 1982; Kleinman, 1980). Moreover, sexual strength and sexual performance have been emphasized in Pakistani culture. On the other hand, sexual weakness and other sex related problems are considered to have serious implications for marital life. Thereby perceived negative outcome of Dhat Syndrome could have made them depressed.

Another important predictor of depression among Dhat Syndrome patients was lack of information about sex. Pakistan is a conservative country where taboos are linked to sex and there is no formal sex education. Furthermore, taboo nature of the subject prevents discussion with others thus missing an opportunity for normalizing the experience, hence prohibiting catharsis. Moreover, taking advantage of the situation, various myths regarding semen loss are reinforced by media through hoardings, advertisements pasted on walls and published in newspapers by self-acclaimed sex specialists in towns and cities (Ranjith, & Mohan, 2006). Thereby it is understandable that patient would feel distressed as a result of severity and extent of symptoms, lack of information and loss of semen due to nocturnal emission.

Another set of regression analysis was carried out for social dysfunctioning as an outcome variable. Dhat Syndrome Symptom Checklist (DSSC) physical and psychological symptoms emerged to be the significant predictors of social dysfunctioning. Most of the earlier researchers have focused their attention on

depression, anxiety and physical symptoms and have ignored social implications of Dhat Syndrome. However, researchers have referred to Dhat Syndrome patients' lack of interest in their lives, daily functioning and problems in marital lives (Clyne, 1964; De Silva, & Dissayanake, 1989; Morrone, et al., 2002). Emphasis on family and marital life in Pakistan could be an explanation for this finding. In Pakistan, marital life and sexual performance in this context is highly valued. Sexual problems resulting in sexual weakness is considered a stigma and may result in separation and divorce. Associated symptoms with Dhat Syndrome could have raised concerns in patients about probable harmful outcome thereby leading to social dysfunctioning.

5.2 Limitations of the Study

Every research has its limitations and it is important that the researcher is aware of the limitations so that caution is exercised while interpreting the findings. The present research has the following limitations. However it is important to state here that some limitations in this research were inherent due to the very nature of the topic under study.

1. Identification of the potential health professionals dealing with Dhat Syndrome patients was done through survey of advertisements by professionals appearing in newspapers (one month) and pasted on walls. The professionals identified so were approached for different studies conducted in this research. This procedure could have excluded medical professionals whom Dhat Syndrome patients (e.g. urologists, dermatologists) consult but they do not publicize through advertisements.
2. Since this was a pioneering research in a very sensitive and tabooed area therefore the researcher had to rely on the consent by heads of institutes,

professionals for provision of data and eventually the men with Dhat Syndrome for their willingness to participate in the study. For one study, most of the heads of academic institutions refused to allow their students participate in this research. The universities claim to be the seat of knowledge and ideally should facilitate research, ironically universities heads did not even allow researcher to collect data. Principles of medical colleges allowed data collection from medical students. Sample size for various studies could have been increased given the general attitude towards sexual health was positive and more time was available to the researcher. Moreover, despite having patients from the periphery and rural areas, the sample was recruited from Lahore. In order to increase generalizabiltiy of the findings one needs to collect data from different provinces of Pakistan.

3. In the study "construction and development of Dhat Syndrome Symptom Checklist (DSSC)", researcher intended to recruit young men from general population. However as stated earlier, the heads of universities did not allow data collection. Therefore, the researcher recruited diverse sample including medical students, patients with general medical conditions and patients reporting at infertility centers with Dhat complaints.
4. For the main study, for ruling out psychiatric co morbidity the researcher (who herself is a chartered clinical psychologist) used informal method and depended on her clinical insight. The researcher was cautious of the fact that for those consulting for Dhat complaints, carrying out formal assessment such as Mini Mental State Examination (MMSE) could have caused discomfort and uneasiness to them.

5. Though majority of the participants openly discussed their problems with the researcher and seemingly responded well to the questionnaires and assessment measures. However, the factors such as: a. area of research being tabooed; the researcher being a female; interview schedule being the method of data collection, could some how have caused inhibitions to the respondents.
6. The main study had cross-sectional design and the issue of causality of the relationship between manifestation of Dhat Syndrome symptoms and psychosocial implications can not be resolved. The cross-sectional and correlational data allows no assertion about causality and does not provide information on how manifestation of Dhat Syndrome and its psychological implications unfold over time. One could easily argue that psychological symptoms were antecedent rather than consequence of Dhat Syndrome. Longitudinal studies in this area will be important for having a clear picture of implications of Dhat Syndrome.

5.3 Implications of the Findings and Suggestions for Future Research

Despite the above stated limitations, the present research has important implications. Of central importance is the uniqueness of this research for many reasons: a: The first systematic effort to explore different aspects of Dhat Syndrome; b. To develop first ever symptom checklist for assessment of manifestation of Dhat Syndrome; c. The first research carried out on a sensitive and tabooed area in a Muslim country. This research therefore has manifold implications.

1. This research has uniquely contributed by developing Dhat Syndrome Symptom Checklist (DSSC), a symptom checklist for assessing manifestation of Dhat Syndrome. This checklist would benefit researchers, clinicians and

health professionals dealing with patients with Dhat Syndrome. Dhat Syndrome Symptom Checklist (DSSC) may allow researchers clarify and examine cross cultural similarities and differences in manifestations of Dhat Syndrome. Moreover, it would help examine whether phenomenon of Dhat Syndrome is confined to a certain culture or has much wider existence beyond certain geographical boundaries.

2. Dhat Syndrome Symptom Checklist (DSSC) is developed both in Urdu and English languages, therefore it would have wider application. Dearth for reliable measures has been realized by the researchers (Kulhara & Avasthi, 1995) and Dhat Syndrome Symptom Checklist (DSSC) is first systematic effort towards developing such measure.
3. Major implication is its contribution in the understanding of disease phenomenon. It has lent support to the existing body of knowledge. The present research provides empirical evidence and substantiates existing notions promoted by Ayurvedic medicine about semen loss.
4. Findings from the present study revealed that young men seek sex related and treatment related information from peers, indigenous healers and literature. These channels of information may mislead and perpetuate myths and misconceptions in them. Moreover, worry in young men is generated through advertisements appearing in national newspapers, advertisements pasted on walls by quack, literature. It warrants the need for formal comprehensive sex education program and counseling services which would deal with various myths and misconceptions pertaining to sexual health.
5. In Pakistan young, single, less educated man from lower strata seem to be more vulnerable and prone to developing sexual concerns particularly semen

loss anxiety. The implication hence is to develop or devise sex education packages for young less educated men and impart education in an informal manner. There is also important that community based counseling services be initiated which may serve as sex clinics for these people. Since Pakistan is a Muslim country where the term "sex clinic" may not be acceptable, therefore community based counseling services may serve the purpose. Concept of multispeciality clinics with emphasis on sexuality at all major public medical hospitals and tertiary care centers should be established to minimize sex quackery.

6. Proper training of counselors and training of other staff in these centers can help improve such problems. The major implication of this study is to discourage quackery. Dissemination of scientific knowledge and information to public through media is also required.
7. Misconceptions about sex and semen loss need to be rectified. These young men need proper counseling / sex education to get rid of these myths which due to ignorance are prevailing from generation to generation.
8. Accurate information about semen formation and its loss is not available to young boys and further more due to sex being a tabooed area in our culture they are left with no choice except for seeking information from unauthentic sources and as a result they are confused and misled. The findings of this research imply strongly that openness in communication and supportive environment should be created to break the taboos and overcome myths and misconceptions. Teachers and health care professionals can be trained to discuss issues like semen loss and masturbation in a matter of fact manner.

9. Traditional healers who are currently actively involved in consultation provision for sexual concerns need to be involved in sex education programs as they can be effective agents in providing scientific and factual information about sex.
10. Sex education also needs to address issues such as masturbation, nocturnal emissions which are also major reasons of psychological and physical distress in young men. Counseling is advisable for handling guilt around masturbation. Moreover, psychological, marital, sexual and physical implications of Dhat Syndrome need to be dealt with. Special consideration and due acknowledgment should be given to religious and cultural background while developing and implementing sex education programs.
11. The findings of this research can be extended and elaborated by examining various sexual concerns both in men and women. Dhat in females has been reported in literature however, it remains unexplored area and this study paves the way for further research.

5.4 Conclusions

This was pioneering research on Dhat Syndrome in Pakistan and it was designed with various objectives: a) To develop Dhat Syndrome Symptom Checklist (DSSC); b: To explore the potential professionals where Dhat Syndrome patients would report; c: To examine demographic characteristics of Dhat Syndrome patients in Pakistan; d: To examine manifestation of Dhat Syndrome symptoms in Pakistan; e: To investigate physical and psychological implications of Dhat Syndrome for the patient.

Dhat Syndrome Symptom Checklist (DSSC) comprising three major categories of symptoms (physical, psychological and sexual) was developed. Inter rater reliability and internal consistency analysis revealed that Dhat Syndrome Symptom Checklist (DSSC) was highly reliable. Demographic profile of a Dhat Syndrome patient in Pakistan emerged to be a man who is young, single, less educated and from lower socioeconomic class. Hakims were the most preferred professionals consulted for treatment. Dhat Syndrome patients manifested physical symptoms the most followed by psychological and sexual symptoms. Various factors emerged as significant predictors of different types of symptoms of Dhat Syndrome. Dhat Syndrome had psychological implications for the patients and they reported experiencing somatic complaints and anxiety the most. Dhat Syndrome symptoms and its perceived impact on patients' life emerged as strong predictors of psychological symptoms in the patients.

The findings therefore highlight the importance of exploring sexual health concerns in Pakistan which at present is tabooed and neglected area. The findings highlight the extent and gravity of implications of Dhat Syndrome for patients' personal, marital and sexual life which in turn results in physical and psychological symptoms in patients. This study also highlights the significance of provision of formal sex education and counseling so that sexual concerns of young men are dealt with in a constructive manner. This would also save the young and less educated men to get trapped by the quacks that propagate myths and misconceptions related to sex and exploit the patients.

The present study paves the way for future research in an area of immense significance. Epidemiological research is required to examine prevalence and incidence of Dhat Syndrome in Pakistan. Researchers should also focus attention to

exploring implications of "*Leukorrea"* (a condition similar to Dhat Syndrome) for women in Pakistan. Cross validation studies are required to demonstrate the validity of the findings from this research. Moreover, longitudinal and follow up researches are important for establishing the credibility and challenging the concepts prevailing in relation to semen loss. An important implication from the present research is that Dhat Syndrome manifests itself mainly in physical form and it has serious implications for psychosocial functioning of young less educated men from lower socio economic class, thereby warrants the need for psychological interventions for those afflicted.

REFERENCES

Aggrawal, N., Dhikav, V., & Anand, K.S. (2006). Depression Characteristics in Dhat Syndrome. *Journal Sexual Medicine* (Submitted for publication).

Akhtar, S. (1988). Four Culture Bound Psychiatric Syndromes in India. *International Journal of Social Psychiatry*, *34*, 70-74.

Alexander, B. (2006). Do Culture Influences Affect your Sex Life? Retrieved February 12, 2008, from http://www.msnb.msn.com/id/12970326/

Al-Hilali, M. T. D, & Khan, M. M. (1996). *The Noble Quran (English Translation, Revised Eds.)* pp. 288, 432, 729. Riyadh, Saudi Arabia: Dar-u-Salam Pb.

Ali, K, and Nanwatvi, M.A. S. (1398). *Muslim Book of Marriage in Dar-ul-Mukhtar* (Urdu Trans. Vol II), p. 473. Karachi: H.M. Saeed Co.

Alter, J. (1997). Seminal Truth: A Modern Science of Male Celibacy in North India. *Medical Anthropology Quarterly* (New Series), *11(3),* 275-298.

American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). Washington, DC: APA.

American Psychiatric Association. (1988). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., Revised). Washington, DC: APA.

American Psychiatric Association (1994) *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: APA.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.TR). Washington, DC: APA.

Andrew, T. A., & Cheng, A. (2001). Case Definition and Culture: Are People all the Same? *British Journal of Psychiatry, 179,* 1-3.

Arieti, S., & Meth, J. (1959). Rare, Unclassifiable, Collective and Exotic Syndromes. In S. Arieti (Ed.). *American Handbook of Psychiatry,* (pp. 546 -563). New York: Basic Books.

Avasthi, A., & Banerjee, S. T. (2002). Guide Book on Sex Education*. Marital and Psychosexual Clinic.* Department of Psychiatry, PGIMER, Chandigarh India.

Avasthi, A., & Gupta, N. (2002). Standardized Management of Single Males with Sexual Disorders. *Manual, Marital and Psychosexual Clinic,* Department of Psychiatry, PGIMER, Chandigarh, India.

Avasthi, A., & Jhirwal, O. P. (2005). The Concept and Epidemiology of Dhat Syndrome. *Journal of Pakistan Psychiatric Society*, 2(1), 6-8.

Avasthi A., & Nehra, R. (2001). Sexual Disorders: A Review of Indian Research. In R. S. Murthy (Ed.). *Mental Health in India (1995-2000): People's Action for Mental Health* (pp. 42-53). Bangalore.

Avasthi, A. K., Verma, V. K., Nehra, R., & Das, K. (1992). Construction and Standardization of a Sex Knowledge and Attitude Questionnaire (SKAQ) in Simple Hindi for North Indian population. *Indian Journal of Psychiatry, 34 (1),* 24-27.

Baasher, T. A. (1963). The Influence of Culture on Psychiatric Manifestations. *Transcultural Psychiatric Research, 15*, 51-52.

Baker, C. D.,& De Silva, P. (1988). The Relationship between Male Sexual Dysfunction and Belief in Zilbergeld's Myths: An Empirical Investigation. *Sexual and Marital Therapy, 3,* 229-238.

Balu, R. S. (2004). Dhat Syndrome - Culture Related Specific Syndrome. Retrieved April 13, 2008 from *The British Journal of Psychiatry* website: http://bjp.rcpsych.org/cgi/eletters/184/3/200

Bang, A., & Bang, R. (1989). High Prevalence of Gynecological Diseases in Rural Indian Women. *The Lancet*, *1*, 85-88.

Bang, R., & Bang, A. (1996). Women's Perception of White Vaginal Discharge. Ethnographic Data from Rural Maharashtra. In Gittelsohn, J., Bentley, M. E., Pelto, P.J., et al (eds.) Listening to Women talk about their Health: *Issues & Evidence from India. 8*: 67-72. New Delhi. Ford Foundation.

Barsky, A. J., & Borus, J. F. (1999). Functional Somatic Syndromes. *Annals of International Medicine*, *130,* 910 - 921.

Barsky, A. J., & Klerman, G. L. (1983). Overview: Hypochondriasis, Bodily Complaints and Somatic Styles. *American Journal of Psychiatry, 140,* 273-283.

Barsky A. J.,Wyshak, G., & Klerman, G. C. (1990). The Somatosensory Amplification Scale and its Relationship to Hypochondriasis. *Journal of Psychiatric Research, 24,* 323-334.

Bashayak, S., & Thapa, S. (1985). Some Reproductive Health Concerns among Adolescent Males in Sri Lanka. *Sri Lanka: Family Planning Association.*

Beard, G. M. (1905). *A Practical Treatise on Nervous Exhaustion*. New York, NY: E. B. Treat.

Becker, A. E., Kleinman, A. (2000). Anthropology and Psychiatry. In B. J. Sadock., & V.A. Sadock (Eds.). *Comprehensive Text Book of Psychiatry* (pp. 463-476). Philadelphia, Lippincott: Williams & Wilkins.

Behere, P. B., & Nataraj, G. S. (1984). Dhat Syndrome: The Phenomenology of a Culture Bound Sex Neurosis of the Orient. *Indian Journal of Psychiatry, 26*, 76-78.

Bhatia, M. S. (1996). Psychosexual Disorders. *In Essentials in Psychiatry* (2nd ed.), pp. 295-311. New Dehli: CBS Publishers & Distributors.

Bhatia, M. S. (1999). An Analysis of 60 Cases of Culture Bound Syndromes. *Indian Journal of Medical Science, 53(4)*, 149-52.

Bhatia, M, S., Bohra, N., & Malik, S. C. (1989). Dhat Syndrome - A useful clinical entity. *Indian Journal of Dermatology, 3,* 32-41.

Bhatia, M. S., Choudhry, S., & Shome, S. (1997). Dhat Syndrome –Is it a Syndrome of Dhat only? *Journal of Mental Health and Human Behavior, 2,* 17-22.

Bhatia, M. S., & Malik, S.C. (1991). Dhat Syndrome - A Useful Diagnostic Entity in Indian Culture. *British Journal of Psychiatry, 159*, 691- 695.

Bhatia, M. S., Thakkur, K. N., Chadda, R. K., & Shome, S. (1992). Koro in Dhat Syndrome. *Indian Journal of Social Psychiatry, 8* (3-4), 74-75.

Bhugra, D. (1992). Psychiatry in Ancient Texts: A Review. *History of Psychiatry, 3,* 167-186.

Bhugra, D. (1993). Influence of Culture on Presentation and Management of Patients. In D. Bhugra, & J. Leff (Eds.). *Principals of Social Psychiatry* (pp. 67-87). Oxford: Blackwell.

Bhugra, D. (2000). Disturbances in Objects of Desire: Cross Cultural Issues. *Sexual and Relationship Therapy, 15(1)*, 67-78.

Bhugra, D., & Bhui, K. (1998) Transcultural Psychiatry: Do Problems Persist in the Second Generation. *Hospital Medicine*. *59*, 126-129.

Bhugra,D.,& Buchanan, A. (1989). Impotence in Ancient Indian Texts: Implications for Modern Diagnosis. *Sexual and Marital Therapy, 4*, *(1)*: 87-92.

Bhugra, D., & Cordle, C. (1989). Sexual Dysfunction in Asian Couples. *British Medical Journal, 292,* 111-112.

Bhugra, D., & De Silva, P. (1996). Uniforms: Fact, Fashion, Fantasy and Fetish. *Sexual and Marital Therapy, 11*, *(4)*: 393-406.

Bhugra, D., & Jacob, K. S. (1977). Culture Bound Syndromes. In D. Bhugra., & A. Munro (Eds.). *Troublesome Disguises* (pp. 296-334). Oxford: Blackwell.

Brelvi, A. R. (1921). *Fatawa Rizwia* (Urdu Trans. *Vol X*). Lahore: Raza Foundation, Jamia Nazamia Rizwia.

Bottero, A. (1991). Consumption by Semen Loss in India and Elsewhere. *Culture, Medicine and Psychiatry, 15 (3),* 303-320.

Brahmbhatt, R. (1998). *Therapy of Common Sexual Problem: A Hand Book*. Mumbai: Family Planning Association of India.

Caplan, P. (1987). Celibacy as a Solution? Mahatma Gandhi and Brahmacharya. In P. Caplan (Eds.). *The Cultural Construction of Sexuality* (pp. 271-295). London: Rutledge.

Carstairs, G. M. (1956). Hinjra and Jiryan: Two derivatives of Hindu Attitudes of Sexuality. *British Journal of Medical Psychology, 29,* 128-138.

Carstairs, G. M. (1961). *The Twice Born*. Bloomington: Indiana University Press.

Carstairs, G. M. (1973). Psychiatric Problems in Developing Countries. *British Journal of Psychiatry, 123,* 271-277.

Cassidy, C. M. (1982). Protein – Energy Malnutrition as a Culture Bound Syndrome. *Culture, Medicine and Psychiatry, 6*, 325-345.

Chadda, R. K. (1995). Dhat Syndrome: Is it a Distinct Clinical Entity? A Study of Illness Behaviour Characteristics. *Acta Psychiatrica Scandinavica*, *91*, 136-139.

Chadda, R. K., & Ahuja, N. (1990). Dhat Syndrome: A Sex Neurosis of the Indian Subcontinent. *British Journal of Psychiatry*, *156*, 577-579.

Chaturvedi, S. (1988). Psychiatric Syndrome Related to Leukorrhea in Indian Women. *Journal of Psychosomatic Obstetrics Gynecology, 8,* 67-72.

Chaturvedi, S., Bhandari, S., Beena, M. B., et al. (1996). Screening for Abnormal Illness Behaviour. *Psychopathology, 2,* 325-230.

Chaturvedi, S., Chandra, P., Sudarshan, C., & Issac, M. K. (1993a). A Popular Hidden Illness among Women related to Vaginal Discharge. *Indian Journal Social Psychiatry, 11,* 69-72.

Chaturvedi, S., Chandra, P. S., Issac, M. K., & Sudarshan, C. Y. (1993b). Somatization Misattributed to non-pathological Vaginal Discharge. *Journal of Psychosomatic Research, 37*, 575-579.

Cheng, A. T. A. (1989). Symptomtology of Minor Psychiatric Morbidity: A cross Cultural Comparison. *Psychological Medicine, 19,* 697-708.

Cheng A. T. A. (2001). Case Definitions and Culture: Are People all the Same? *British Journal of Psychiatry, 179*, 1-3.

Cheng, S. T. (1996). A Critical Review of Chinese Koro. *Culture, Medicine and Psychiatry, 20 (1),* 67-82.

Clyne, M. B. (1964). Indian Patients. *Practitioner, 193*, 195-199.

Cohen, S. A., Bird, J., & Baker, J. (1982). Psychiatry for Interest: A Study of Needs. *Journal of Operational Psychiatry, 13*, 100-105.

Collumbien, M., Bohidar, N., Das, R., Das, B., & Pelto, P. J. (1998). Male Sexual Health Concerns in Orissa: An Emic Perspective. *AIMS Research Centre, Bhubaneshwar, Orissa.*

Collumbien, M., Das, B., & Bohidar, N. (2001). Male Sexual Debut in Orissa, India: Context, Partners and Differentials. *Asia-Pacific Population Journal, 16(2),* 211-224.

Collumbien, M., Das, B., Bohidar, N., & Pelto, P. (2000). Male Sexual Behaviour in Orissa. *Ford Foundation Workshop on Reproductive Health in India*. New Evidence and Issues, India.

Collumbien, M., & Hawkes, S. (2000). Missing Men's Message: Does the Reproductive Health Approach Respond to Men's Sexual Health Needs? *Culture Health and Sexuality, 2 (2):*135-150.

Daniels, R. (1997). *The War Written: Gaining Victory in the Battle for Sexual Purity*. Wheaton, Illinois: Crossway Books.

Dash, B. (1974). *Ayurvedic Treatment of Common Diseases*. New Delhi: Shiv Narain Printers.

De Silva, P. (1994). Psychological Treatment of Sexual Problems. *International Review of Psychiatry, 6,* 163-173.

De Silva, P., & Dissanayake, S. (1989). The Loss of Semen Syndrome in Sri Lanka: A Clinical Study. *Sexual & Marital Therapy, 4(2),* 195-204.

Deepak Charitable Trust. (1998). Situation Assessment of The Sexual Behaviour in the Nandnagar Area. Vadodara: Author.

Dewaraja, R., & Sasaki, Y. (1991a). Semen Loss Syndrome: A Comparison between Sri Lanka and Japan. *American Journal of Psychotherapy, 45*, 14-20.

Dewaraja, R., & Sasaki, Y. (1991b). Koro with Depression in Nepal. *Transcultural Psychiatric Research Review, 32(1)*, 87-90.

Dhikav, V., & Aggarwal, N. (in press). Is Dhat Syndrome a Culturally appropriate Manifestation of Depression. *Medical Hypothesis*.

Dhikav, V., Aggarwal, N., Gupta, S., Jadhavi, R., & Singh, K. (2007). Depression in Dhat Syndrome. *International Society for Sexual Medicine. 5(4):*841-844.

Dolphin, L. (1995). Masturbation and Bible. Thessalonians. *5*, 23-24.

Dwivedi, K. N. (1979). Psychosexual Attitudes of Resident Students in an Indian University. *British Journal of Sexual Medicine, 6(49*), 34-40.

Edwards, J. W. (1976). The Concern for Health in Sexual Matters in the Old Society and New Society in China. *Journal of Sex Research, 12,* 88-103.

Edwards J. W. (1983). Semen anxiety in South Asian cultures: Cultural and Transcultural significance. *Medical Anthropology, 7(3),* 51-67.

Engelhardt, H. T. (1974). The Diseases of Masturbation: Values and Concepts of Disease. *Bulletin of the History of Medicine, 48*, 234 -248.

Erickson, E. H. (1969). *Gandhi's Truth*. New York, NY: Norton.

Fox, R. (1989). *Gandhian Utopia: Experiments with Culture*. Boston: Beacon Press.

Freud, S. (1898). Sexuality in the Theory of Neurosis. *Standard Edition,* III, 263-285.

Freud, S. (1905). Three Essays on the Theory of Sexuality. *Standard Edition,* VII, 125-245.

Freud, S. (1912). Contributions to a Discussion on Masturbation. *Standard Edition*, XII, 243-254.

Galen. (1963). *On the Passion and Error of the Soul* (P. W. Hawkins Trans.). Columbus, OH: Ohio State University.

Gandhi, M. K. (1948). *Key to Health*. Ahmadabad: Navjivan Publishing House.

Gandhi, M. K. (1957). *Self Restrained versus Self Indulgence* (p. 20). Ahmedabad, India: Navjivan Publishing House.

Gandhi, M. K. (1964). *The Law of Continence*. In A.T. l Aingorn (Ed.). Bombay: Bharatyia Vidya Bhavan.

Gandhi, N., & Mahatme, S. (1989). A Psychiatrist's Approach to Dhat Syndrome. *Indian Practitioner, 42,* 533-536.

Gangadhar, D. A. (1984). *Mahatma Gandhi's Philosophy of Brahmacharya*. Banglore: Christian Institute for the Study of Religion and Society.

Good, B. J. (1977). The Heart of What's the Matter: The Semantics of Illness in Iran. *Culture, Medicine and Psychiatry, 1,* 25-58.

Gernon, M., & Tazeem, M. (1996). Men's Perception of Illnesses of Nether Areas. Working Paper, SAlRTHI, Gujarat.

Goldberg, D. P. (1972). The Detection of Psychiatric Illness by Questionnaire. *Monograph 21 of Maudsley*. London: Oxford University Press.

Goldberg, D. P. (1978). *Manual of General Health Questionnaire*. Windsor: NFER-NELSON.

Goldberg, D. P. (1986). Use of General Health Questionnaire in Clinical Work. *British Medical Journal, 293*, 1188-1189.

Goldberg, D. P., & Williams, P. (1988). *A User Guide to General Health Questionnaire*. Windsor: NFER-NELSON.

Gudy Kunst, W. B., Tiny-Tomy, S., & Chua, E. (1988). *Culture and Interpersonal Communication*. California, CA: Sage Publications.

Haslam, M. T. (1980). Medicine and the Orient: Shen- k'uei syndrome. *British Journal of Sexual Medicine*, *7*, 31-36.

Hay, J. (1992). Are Non-Western Beliefs False? (Letter). *British Journal of Psychiatry, 160*, 870 - 871.

Hawkes, S. (1998). Why Include Men? Establishing Sexual Health Clinics for Men in Rural Bangladesh. *Health Policy and Planning. 13(2):*1-9.

Helman, C. G. (1990). *Culture, Health and Illness: An Introduction for Health Professional*. London: Wright.

Hippocrates, (1988). *Diseases II*. (P. Potter. Trans). Cambridge, Mass: Harvard University Press.

Hughes, C. C. (1985a). Culture Bound or Construct Bound: the Syndromes and *DSM-III*. In C. Simons., & R. Hughes (Eds.), *The CBSs: Folk Illness of Psychiatric and Anthropologist Interest* (pp. 3-24). Dordrecht, Netherlands: Reidel.

Hughes, C. C. (1985b). Glossary of Culture Bound or Folk Psychiatric Syndromes. In R. C. Simons & C. C. Hughes (Eds.). *Culture Bound Syndromes: Folk Illness of Psychiatric and Anthropologist Interest.* (pp. 465 - 505). Dordrecht, Netherlands: Reidel.

Hughes, C. C. (1996). The CBSs and Psychiatric Diagnosis. In J. Mezzich, A Kleinman, H. Fabrega, & D. Parron. (Eds.). *Culture and Psychiatric Diagnosis: A DSM-IV Perspective* (pp. 49-62). Washington, DC: American Psychiatric Association.

Hughes, C. C. & Wintrob, R. M. (1995). Culture Bound Syndromes and the Cultural Context of Clinical Psychiatry. In J. M. Oldham, & M. Riba (Eds.). *Review of Psychiatry* (pp. 565-597). Washington, DC: *American* Psychiatric Association.

Jadhav, S. (1999). The Cultural Experience of Depression amongst White Britons in London. Doctoral Dissertation, University of London.

Jadhav, S. (2004). Dhat Syndrome: A Re-Evaluation. *Psychiatry, 3:8*, 14-16 .

Jilek, W. G. (2000). Culturally Related Syndromes. In M.G. Gelder., J. J. Lopez-Iber., & N. Andrerson (Eds.), *New Oxford Textbook of Psychiatry* (*1)* (pp. 1061-66). Oxford: Oxford University Press.

John, W. (1996). The Path of Holiness: A Guide for Sinness. Illinois: Downers Grove.

Joshi, S. K. (1965). Syndrome of Dhat in the Male in Maharshtra. *Medicine Journal, 12 (9). 695-698.*

Kakar, S. (1982). *Shamans, Mystics and Doctors: A Psychological Inquiry into India and its Healing Traditions.* New Delhi, Oxford University Press.

Kakar, S. (1996). *The Indian Psyche.* New Delhi: Viking Penguin.

Kaplan, H., (1983). The Evaluation of Sexual Disorders. The Urologic Evaluation of Ejaculatory Disorders. New York, NY: Brunner / Mazel.

Kapur, R. L. (1979). The Role of Traditional Healers in Mental Health Care in Rural India. *Social Science and Medicine*, *136*, 27-31.

Kapur, R. L. (1987). Commentary. *Culture, Medicine and Psychiatry*, *11*, 43-48.

Kar, G. C., & Verma, V. (1978). Sexual Problems of Male Mental Patients. *Indian Journal of Psychiatry, 20*, 305-370.

Khan, N. (2005). Dhat Syndrome in Relation to Demographic Characteristics. *Indian Journal of Psychiatry*, *45*, 54-57.

Khan, N., Kausar, R., & Chaudhry, H. R. (2005). Factor Structure of Dhat Syndrome Symptom Checklist (DSSC). *Conference Proceedings, Applied and Community Psychology: Trends and Directions* (Vol 2), pp. 596 -600. New Delhi: Sarup & Sarup.

Khare, R. S., & Rao, M. S. A. (1986). *Food, Society and Culture: Aspects in South Asian Food Systems,* Durham NC: Carolina Academic Press.

Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual Behavior in the Human Male.* Philadelphia: W. B. Saunders Company Ltd.

Kirmayer, L. J. (1984). Culture, Affect and Somatization. *Transcultural Pyschiatirc Research Review, 21,* 159-188.

Kirmayer, L. J. (1989). Cultural Variations in the Response to Psychiatric Disorders and Emotional Distress. *Social Science and Medicine, 29(3),* 327-339.

Kirmayer, L. J. (1991). The Places and Culture in Psychiatry Nosolgy: Taijin Kyofusho and DSM-III-R. *Journal of Nervous and Mental Disorders, 179*, 19 – 29.

Kirmayer, L. J. (1994). Is the Concept of Mental Disorder Culturally Relative? In S. A. Kirk., & S. Einbinder (Eds.), *Controversial Issues in Mental Health* (pp. 1-20). Boston: Allyn & Bacon.

Kirmayer, L. J. (2001). Cultural Variations in the Clinical Presentation of Depression and Anxiety: Implications for Diagnosis and Treatment. *Journal of Clinical Psychiatry, 62 (Suppl. 13),* 22-28.

Kirmayer, L. J., Smith, A. & Dao, T. H. T. (1998). Somatization and Psychologization: Understanding Cultural Idioms of Distress. In S. Okpaku (Ed.), *Clinical Methods in Transcultural Psychiatry*, Washington, DC: American Psychiatric Association.

Kirmayer, L. J., & Young, A. (1998). Culture and Somatization: Clinical, Epidemiological, and Ethnographic Perspectives. *Psychosomatic Medicine, 60(4),* 420-430.

Kirmayer, L. J., Young, A., & Robbins, J. M. (1994). Symptom Attribution in Cultural Perspective. *Canadian Journal of Psychiatry, 39(10)*, 584-595.

Kleinman, A. (1977). Culture, Depression and the New Cross Cultural Psychiatry. *Social Science and Medicine, 11*, 3-11.

Kleinman, A. (1980). Patients and Healers in the Context of Culture. An Exploration of the Borderland between Anthropology, *Medicine and Psychiatry. Comparative Studies of Health Systems and Medical Care. (3),*.208. Berkeley: University of California Press.

Kleinman, A. (1982). Neurasthenia and Depression. *Culture, Medicine and Psychiatry*, *6,* 117-190.

Kleinman, A. (1987). Anthropology and Psychiatry: The Role of Cross Cultural Research in Illness. *British Journal of Psychiatry, 151*, 447-454.

Kleinman, A. (1988). *The Illness Narratives*, (p. 23). New York: Basic Books.

Kleinman, A., & Good, B. (1985). Culture & Depression. In A. Kleinman & B. Good, (Eds.), *Culture and Depression*. Berkeley: University of California press.

Kulanyagam, R. (1979). Semen Losing Syndrome. *Journal of Psychiatric Association of Thailand, 24*, 152-158.

Kulhara, P., Avasthi A. (1995). Sexual Dysfunction in the Indian Subcontinent. *International Review Psychiatry, 95(7),* 231-239.

Kumar, S., Aggarwal, A., and Trivedi, J. K. (1983). Neurosis and Sexual Behavior in Men. *Indian Journal of Psychiatry*, *25*, 190-197.

Kumar, P. (1990). Trichomoniasis and Candidiases in Consorts of Females with Vaginal Discharge. *Indian Journal of Sexually Transmitted Diseases, 11,* 54-56.

Lakhani, A., (2001). National Consultation on Men's Health and Semen Loss Concern. *Deepak Charitable Trust*, UNAIDS Center, New Delhi.

Lakhani, A., Gandhi, K., & Collumbien, M. (2001). Addressing semen loss concerns: towards culturally opposite HIV/AIDS interventions in Gujrat. *India Reproductive Health Matters, 9*, 49-59.

Lambert, H. (1998). Methods and Meanings in Anthropological, Epidemiological and Clinical Encounters: The Case of Sexually Transmitted Disease and Human Immune Deficiency views Control and Prevention in India. *Tropical Medicine International Health. 3*, 1002-1010.

Landman, L. T. (Ed.). (1994). *Listening to Women talk about their Health Issues and Evidence from India.* New Delhi: The Ford Foundation.

Lee, S. & Wong, K. C. (1995). Rethinking Neuroasthenia: The Illness Concepts of Shenjing Shuaruo among Chinese Undergraduates in China. *Culture, Medicine and Psychiatry, 19*, 91-111.

Leff, J. (1973). Culture and Differentiation of Emotional States. British *Journal of Psychiatry, 123*, 299-306.

Leff, J. (1988). *Psychiatry around the Globe: A Transcultural View*. London: Gaskell.

Leff, J. (1990a). The New Cross cultural Psychiatry. *British Journal of Psychiatry, 156,* 305-307.

Leff, J. (1990b). Correspondence. *British Journal of Psychiatry, 157*, 296.

Lehamn, H. E. (1975). Unusual Psychiatric Disorders and Atypical Psychosis. In A. M. Freedman., H. I Kaplan., & B. J. Sadock, (Eds.). *Comprehensive Text Book of Psychiatry* (p. 1731). Baltimore: Williams and Wilkins.

Levine, R. E., & Gan, A. C. (1995). Culture Bound Syndromes. *Psychiatric Clinics of North America, 18,* 523-536.

Lipowsky, Z. J. (1988). Somatization: The Concept and its Clinical Application. *American Journal of Psychiatry, 145,* 1358-1368.

Lipsedge, M., & Littlewood, R. (1979). Transcultural Psychiatry. In K. Granville-Grossman (Ed.), *Recent Advances in Clinical Psychiatry (3).* Edinburgh: Churchill Livingstone.

Littlewood, R. (1990). From Categories to Context: A Decade of the New Cross Cultural Psychiatry. *British Journal of Psychiatry, 156*, 308-327.

Littlewood, R. (1992). DSM IV and Culture: Is Classification Internationally Valid? *Psychiatric Bulletin*, *16*: 257-261.

Littlewood, R. (1996). Cultural Comments on Culture Bound Syndromes. In A. Mezzich., H. Kleinman, Fabrega, et al (eds.), *Culture and Psychiatric Diagnosis: A DSM–IV Perspective*, (pp. 309-312). Washington, DC: APA.

Littlewood, R., & Lipsedge, M. (1985). Culture Bound Syndromes. In K. Granville-Grossman (Ed.), *Recent Advances in Clinical Psychiatry* (pp. 105 -142). Edinburgh: Churchill Livingstone.

Malhotra, H. K. (1972). *A Study of the Concept of Mental Illness in the General Public*. M.D Thesis, Postgraduate Institute of Medical Education and Research. Chandigarh. India.

Malhotra H. K., & Wig, N. N. (1975). Dhat Syndrome: A Culture Bound Sex Neurosis of the Orient. *Archives of Sexual Behavior, 4*, 519-528.

Meth, J. M., (1974). Exotic Psychiatric Syndromes. In S. Arieti, & E. B. Brody (Eds.). *American Hand Book of Psychiatry, 3*, 723-739. New York: Basic Books, Inc.

Mishra, R. S. (1963). *The Text Book of Yoga Psychology*. New York, NY: Julian Press.

Mishra, L., Singh, B. B., & Dagenais, S., (2001). Ayurvedic: A Historical Perspective and Principals of the Traditional Health Care System in India. *Alternative Therapy Health Medicine, 7(2):*36-42.

Modudi, S. S. A.,(1979). *Tafhim ul Quran* (*Vol 3*.). Lahore: Tarjaman ul Quran, Maktaba-e-Tamir e Insaniat. Lahore.

Money, J., Prakasam, K., & Joshi, V. (1991). Semen Conservation Doctrine from Ancient Ayurvedic to Modern Sexological Theory. *American Journal f Psychotherapy, 45(1),* 9-14.

Morrone, A., Nosotti,L., Tumiati, Mc., Cianconi, P., Casadei, F., & Franco, G. (2002). Dhat Syndrome: An Analysis of 18 cases. *Paper presented in 11th Congress of the European Academy of Dermatology & Venerology.* Prague, Czech.

Mumford, D. B. (1996). The Dhat Syndrome: A Culturally Determined Symptom of Depression? *Acta Psychiatrica Scandinavica, 94(3)*, 163-167.

Murphy, H. B. M. (1976). Notes for a Theory of Latah. In W. Lebra. (Eds.). *Culture Bound Syndromes* (pp. 3 - 21). Honolulu: University of Hawaii Press.

Murphy, H. B. M. (1977). Transcultural Psychiatry should begin at Home. *Psychological Medicine, 7,* 369-371.

Murphy, H. B. M. (1982). *Comparative Psychiatry*, New York: Springer, Verlag.

Nag, M. (1996). *Sexual Behavior and AIDS in India* (p. 176). New Delhi: Vikas Publishing House.

Nakra, B. R. S., Wig, N. N., & Verma, V. K. (1977). A Study of Male Potency Disorders. *Indian Journal of Psychiatry, 19,* 13-18.

Nakra, B. R. S., Wig, N. N., & Verma, V. K. (1978). Sexual Behavior in the Adult North Indian Male: A Study of 150 patients of Male Potency Disorders. *Indian Journal of Psychiatry, 20,* 178-182.

Neki, J. S. (1972a). *The Ascetic Syndrome.* New Delhi: All India Institute of Medical Sciences.

Neki, J. S. (1972b). Pattern of Neurosis in Developing Communities and Relevance of Western Psychotherapy in their Treatment. Paper presented at WFMH workshop on Mental Health Sciences in the Developing Countries, Edinburgh, UK.

Neki, J. S. (1973). Psychiatry in South East Asia. *British Journal of Psychiatry, 123*, 257-269.

Nichter, J. S. (1981a). Negotiation of the Illness Experience: Ayurvedic Therapy and the Psychosocial Dimensions of Illness. *Culture, Medicine and Psychiatry, 5,* 5-24.

Nichter, M. (1981b). Idioms of Distress: Alternatives in the Expression of Psychosocial Distress: A Case Study from South India. *Culture, Medicine and Psychiatry*, *5.* 379- 408.

Obeyesekere, G. (1976). The Impact of Ayurvedic ideas on the Culture and the Individual in Sri-Lanka. In C. Leslie (Ed.). *Asian Medical Systems* (pp. 201 - 226). Berkeley, CA: University of California Press.

Obeyesekere G. (1977). The Theory and Practice of Psychological Medicine in the Ayurvedic Tradition. *Culture Medicine and Psychiatry, 1,* 155-181.

Obeyesekere, G. (1985). Depression, Buddhism and Work of Culture in Sri Lanka. In A. Kleinman., & B. Good (Eds.). *Culture and Depression* (pp. 134-152.). Berkeley: University of California Press.

Paris, A. (1991). Dhat Syndrome: A Review. *Transcultural Psychiatric Review, 29*, 109-118.

Paris, A. (1992). Dhat: The Semen Loss Anxiety Syndrome. *Transcultural Psychiatric Research Review, 29(2),* 109-118.

Parmer, M. C., Mishra, A., & Vankar, G. K. (2001). Sexual Knowledge and Attitudes among Dhat Syndrome Patients: A Controlled Study. Poster Presentation. *Indian Journal of Psychiatry*, *43*. (supplement), 86.

Patel, B., Nadkani, R., & Dhavale, H. S. (1996). Sexual Misconceptions of Semen. *Indian Journal of Behavioral Sceinces. (6)*, 17-22.

Patel, V., & Oomman, N. M. (1999). Mental Health Matters too: Gynecological Symptoms and Depression in South Asia. *Reproductive Health Matters, 7*, 30 - 38.

Pelto P. J. (1994). Focused Ethnographic Studies on Sexual Behaviour and AIDS / Sexually Transmitted Diseases. *The Indian Journal of Social Work. 55 (4)*, 589 - 601.

Pelto, P. J., & Pelto, G. H. (1997). Studying Knowledge, Culture and Behaviour in Applied Medical Anthropology. *Medical Anthropology Quarterly, 11,* 147-163.

Perme, B., Ranjith, G., Mohan, R., & Chandrasekaran, R. (2005). Dhat (Semen Loss) Syndrome: A Functional Somatic Syndrome of the Indian subcontinent? *General Hospital Psychiatry, 27,* 215 -217.

Pfeiffer, W. M. (1994). *Transkulturelle Psychiatry (2nd Ed.)* Thieme: Stuttgart.

Prince, R. H., (1960). The Brain - Fag Syndrome in Nigerian Students. *Journal of Mental Science*, *106*, 559 -570.

Prince, R. H. (1985). The Concept of Culture–Bound Syndromes: Anorexia Nervosa and Brain –Fag. *Social Science and Medicine. 21*:197-203.

Prince, R. H. (1992). Koro and the Fox Spirit on Hainan Island (China). *Transcultural Psychiatric Research Review, 29(2)*, 119-132.

Prince, R. H., & Tecneng- Laroche, F. (1987). Culture Bound Syndrome and International Disease Classification. *Culture Medicine and Psychiatry, 11*, 1-47.

Qarshi, M. H. (n.d.) *Sulk Murvareed*: Treatment of Sexual Disorders. Lahore: Maktaba-e-Danial.

Raguram, R., Jadhav, S., & Weiss, M. (1994). Historical Perspectives on Dhat Syndrome. *NIMHANS Journal, 12(2)*, 117-124.

Rajesh, G., Jacob, K.S., and Bhugra, D., (2004). Form – Content and Dichotomy in Psychopathology. Author's Reply. *British Journal of Psychiatry, 185 (6),* 520-521.

Ramasubban, R. (1999). HIV/AIDS in India: Gulf between Rhetoric and Reality. In S. Pachauri (Ed.). *Implementing a Reproductive Health Agenda in India, the Beginning (*pp. 357-386). New Delhi: Population Council.

Ranjith G., & Mohan, R. (2004). Dhat Syndrome: A Functional Somatic Syndrome. *British Journal of Psychiatry, 185*, 77.

Ranjith, G., & Mohan, R. (2006). Dhat Syndrome as a Functional Somatic Syndrome: Developing a Sociosomatic Model. *Psychiatry, 69*, 142-150.

Rao, T. S. S. (2000). Approaches to Common Sexual Problems in Medical practice, Sumana, Mandya.

Rao, T. S. S. (2004). Some Thoughts on Sexualities and Research in India. (Editorial). *46 (1),* 3-4.

Roland, A. (1988). *In Search of Self in India and Japan*. Princeton, N. J: Princeton University Press.

Samhita, C. (2001). *Chowkhamba Sanskrit Studies* (Vol. 5). In R. Sharma, & B. Dash (Eds.).Volume XCIV. 2nd Edition. Varanasi, India. Chowkhanbe Sanskrit, Series Office.

Saraswati, S. Y. (1982). *Brahamcharya Raksha, Hi Jiwan Hai.* Alwar: Ramji Lal Sharma.

Sethi B. B. (1978). Culture Bound Symptoms in India. *Indian Journal of Psychiatry, 20*, 295-296.

Shankar, B. R., and Gilligan, D. (2004). Correspondence. *The British Journal of Psychiatry*, *185*, 261-262.

Shapiro, S., Skinner, E., Kramer, M., Steinwachs, D., & Regier, D. (1985). Measuring Need for Mental Health Services in a General Population. *Medical Care, 23*, 1033-43.

Sharan, P. S., Avasthi, A., Gupta, N., Mohanty, M., Gill, S., & Jain, A. (2003). Development of Dhat Syndrome Interview Schedule (DSIS) for Indian male population. *Abstract Supplement of Indian Journal of Psychiatry*. *45,* 88.

Sharma, R.K., & Das, B. (1977). *Cahrak Samhita (Vol.2*) p. 58. Varanasi, India: Chowkhamba Sanskrit Series..

Simons, R. C. (1987). Commentary. *Culture, Medicine and Psychiatry*, *11*, 21-28.

Simons, R. C., & Hughes, C. (1993). The Culture bound syndrome. In A. Gaw (Ed.). *Culture, Ethnicity and Mental Illness* (pp. 75–99). Washington, DC: APA.

Singh, G. (1985). Dhat Syndrome Revisited. *Indian Journal of Psychiatry, 27*, 119-221.

Singh, G., Avasthi, A., & Pravin, D. (2001). Dhat Syndrome in a Female: A Case Report. *Indian Journal of Psychiatry, 43(4):* 345 - 348.

Singh, R. A., Malhotra, S., Avasthi, A., & Prasad, D. (1987). Sexual Knowledge and Attitudes of Medical and Non Medical students. *Indian Journal of Social Psychiatry, 3 (1-2),* 126-136.

Singh, S. P. (1992). Is Dhat Culture Bound? (Letter). *British Journal of Psychiatry, 160*, 280-281.

Sivananda, S. (1984). *Brahamacharya Hi. Jiwan Hai*. Allahabad; Adhunik Prakashan Graha.

Sumathipala, A., Siribaddana, S. H., & Bhugra, D. (2004). Culture-Bound Syndromes: the Story of Dhat Syndrome. *British Journal of Psychiatry*, *184*, 200-209.

Sushruta Samhita. (1983). *Vaidyar Yadavji Tri Kamji*. Bombay: Acharya Sagar Press.

Swartz, L. (1985). Anorexia Nervosa or Culture Bound Syndrome. *Social Science Medicine*, *20*, 725-730.

Tan, E. S. (1969). The Symptomatology of Anxiety in Malaysia. *Australia and New Zealand Journal of Psychiatry, 3,* 271-276.

Tan, E. S. (1980). Culture Bound Syndromes. In A. Keinman & T.Y. Lin (Eds.). *Normal and Abnormal Behaviors in Chinese Culture* (pp. 371-386). Dordrecht, Netherlands: Reidel.

Tan, E. S. (1981). Culture Bound Syndrome among Overseas Chinese. In A Kleinman, T. Y. Lin (Eds.) *Normal and abnormal behavior in Chinese culture*. Dordrecht, Netherlands: Reidel.

Tennant, C., & Andrew, G. (1978). The Pathogenic Quality of Life Event Stress in Neurotic Impairment. *Archive of General Psychiatry, 35*, 859-863.

Thakkur, G.G., (1974). *Introduction to Ayurvedia: the Science of Life (Revised ed.*). New York: ASI Publishers.

Tissot, S. A. (1974). A Treatise on the Disease Produced by Onanism. In C. Rosenberg., C. Smith-Rosenberg (Eds.). *The Secret vice Episode some Arguments against Masturbation* (pp. 26–105). New York, NY: ARNO Press.

Tiwari, S. C., Katiyar, M., & Sethi, B. B. (1986). Culture and Mental disorders. An Overview. *Journal of Social Psychiatry, 2*, 403-425.

Trollope-Kumar, K. (1999). Symptoms of Reproductive-Tract Infection - Not all that they seem to be. *Lancet, 354*, 1745-1746.

Trollope–Kumar, K. (2001). Cultural and Biomedical Meanings of the Complaint of Leukorrhea in South Asian Women. *Tropical Medical International Health, 6*(4): 260–266.

Tseng, W. S. (1973). The Development of Psychiatric Concepts in Traditional Chinese Medicine. *Archives of General Psychiatry*, *29*, 569-575.

Tseng, W. S. (2001). *Handbook of Cultural Psychiatry*. San Diego: Academic Press.

Tseng, W. S., & McDermott, J. F. Jr. (1981). *Culture, Mind and Therapy: An Introduction to Cultural Psychiatry*. New York: Brunner/Mazel.

Varma, V.K., Avasthi, A., (1990). *Sexual Myths and Attitudes in India*. In Stefanis et al. (Eds.) Psychiatry: A World Perspective (Vol. 4), pp. 227-233. England: Elsevier.

Verma R. K., Pelto P. J., Rangaiyan G., et al, (2000). Treatment Seeking for Sexual Health Problems by Men in a Mumbai Slum Community. Paper Presented at the Workshop on Reproductive Health in India: New Evidence and Issues, Pune, India.

Verma, R. K., Rangaiyan, K. G., Singh, R., Sharma, S., & Pelto, P. J. (2001). A Study of Male Sexual Health Problems in a Mumbai Slum Population. *Culture, Health and Sexuality*. *3*: 339-552.

Verma, R. K., Sharma, S., Rangaiyan, K. G., Singh, R., & Pelto, P. J. (2003). Beliefs concerning sexual health problems and treatment seeking among men in a Indian slum community. *Culture, Health and Sexuality, 5(3),* 265-276.

Weiss, M. G., (1986). History of Psychiatry in India: Towards a Culturally and Historiographically Informed Study of Indigenous Traditions. *Samiksa*, *4*, 519-528.

Weiss, M. G., & Kleinman, A. K. (1988). *Depression in Cross Cultural Perspective: Developing a Culturally Informed Model*. In P. Darsen, N.Sartorius & J. Berry (Eds). *Psychology Culture and Health. Towards Applications (*pp. 179-206). Beverly Hills, CA, Sage.

Weiss, M. G., Ranguram, R., & Channabasavanna, S. M. (1995). Cultural Dimensions of Psychiatric Diagnosis: Comparing DSM-III-R and Illness Explanatory Models in South Asia. *British Journal of Psychiatry, 166,* 353-539.

Wen, T. K. (1998). Folk Belief, Illness Behavior and Mental Health in Taiwan. *Chang Gung Medical Journal, 21(1),* 1-12.

Wen, T. K., & Wang, C. L. (1980). Shen-k'uei Syndrome: A Culture-Specific Sexual Neurosis in Taiwan. In A. Kleinman & T.-Y. Lin (Eds.). *Normal and Abnormal Behaviour in Chinese Culture* (pp. 357 – 369). Dordrecht, Netherlands: Reidel.

Westermeyer, J. (1979). Folk Concept of Mental Disorder among the Lao. Continuities with Similar Concept in other Culture and in Psychiatry. *Culture, Medicine and Psychiatry, 3 (3*), 301-317.

Westermeyer, J. (1987). Cultural Factors in Clinical Assessment. *Journal of Consulting and Clinical Psychology, 55,* 471.

Westermeyer, J. (1989). Psychiatric Epidemiology across Cultures: Current Issues and Trends. *Transcultural Psychiatric Research Review, 26 (5),* 5-25.

Westermeyer, J., & Janca, A. (1997). Language, Culture and Psychopathology: Conceptual and Methodological Issues. *Transcultural Psychiatry, 34 (3),* 291-311.

Wig, N. N. (1960). Problem of Mental Health in India. *Journal of Clinical and Social Psychiatry, 17*, 48-53.

Wig, N. N. (1983). DSM-III: A Perspective from the Third World. In Spitizer, R.L., Williams, J.B.W and Skodal, A.E. (Eds.). *International Perspective on DSM-III*. Washington, DC. APA.

Wig, N. N. (1984). Psychiatric Research in India. In A. De Souza., & D. A. De Souza (Eds.). *Psychiatry in India* (pp. 703-732). Bombay: Bhalani Book Depot.

Wig, N. N. (1994). An Overview of Cross-Cultural and National Issues in Psychiatric Classification. In J. E. Mezzich, Y. Honda & M. C. Kastrup (Eds.). *Psychiatric Diagnosis: A World Perspective* (pp. 3-10). New York: Springer.

Wig, N. N. (1998). Dhat Syndrome, in R. Brahmbhatt (Ed.). *Therapy of Common Sexual Problems: A Hand Book*. Mumbai, Family Planning Association of India.

Wintrob, R. M. (1996). Cultural Comment on Culture Bound Syndromes. In J. E. Mezzich., A. Kleinman, H. Fabrega, et al. (Eds.). *Culture and Psychiatric Diagnosis: A DSM–IV Perspective* (pp. 313-320). Washington, DC: APA.

World Health Organization. (1979). *International Classification of Diseases and Related Health Problems* (ICD-9), Geneva: WHO.

World Health Organization. (1993). *International Classification of Diseases and Related Health Problems* (ICD-10), Geneva: WHO.

Yap. P. M. (1951). Mental Diseases Peculiar to Certain Cultures: A Survey of Comparative Psychiatry. *Journal of Mental Sciences*, *97*, 313.

Yap. P. M. (1952). The Latah Reaction: Its Pathodynamics and Nasological Position. *Journal of Mental Sciences, 98,* 515.

Yap, P. M. (1964). Suk-Yeon or Koro, A Culture Bound Depersonalization Syndrome. *Bulletin of Hong Kong Chinese Medical Association, 16 (1)*, 31-47.

Yap, P. M. (1965). Koro, A Culture-Bound Depersonalization Syndrome. *British Journal of Psychiatry, 111*, 45-50.

Yap P. M. (1967). Classification of the Culture-Bound Reactive Syndromes. *Australia New Zealand Journal of Psychiatry, 1,* 172-179.

Yap, P. M. (1969). The Culture Bound Syndromes. In W. Cahil., & T. Y. Lin. (Eds.). *Mental Health Research in Asia and the Pacific* (pp. 33-53). Honolulu: East West Centre Press.

Zimmarmann, F. (1988). *The Jungle and the Aroma of Meats. An Ecological Theme in Hindu Medicine*. Berkeley: The University of California Press.