CHAPTER - I

INTRODUCTION

1. 1: Overview

Juvenile delinquency refers to antisocial or illegal behavior by children or adolescents. Most legal systems prescribe specific procedures for dealing with juveniles, such as juvenile detention centers. There are a multitude of different theories on the causes of crime, most if not all of which can be applied to the causes of youth crime. Youth crime is an aspect of crime which receives great attention from the news, media and politicians. The level and types of youth crime can be used by commentators as an indicator of the general state of morality and law and order in a country, and consequently youth crime can be the source of ‘moral panics’. Theories on the causes of youth crime can be viewed as particularly important within criminology. This is firstly because crime is committed disproportionately by those aged between fifteen and twenty-five. Secondly, by definition any theories on the causes of crime will focus on youth crime, as adult criminals will have likely started offending when they were young.

A juvenile delinquent is a person who is usually under the age of 18 and commits an act that otherwise would have been charged as a crime if he were an adult. Juvenile delinquents sometimes have associated mental disorders and/or
behavioral issues such as post-traumatic stress disorder or bipolar disorder, and are sometimes diagnosed with Psycho-Somatic illnesses (Steinberg, 2008).

The symptoms of Psycho-Somatic disorders usually begin during adolescence or early adulthood and are characterized by many vague physical complaints. Any part of the body may be affected, although the symptoms and their frequencies vary. Common symptoms among adolescents are headaches, nausea and vomiting, abdominal pain, diarrhea or constipation, fatigue, fainting, dizziness, sleeping problems, depression and anxiety symptoms, bronchial asthma and nervousness (Perera, 2003).

On the other hand, studies support that juvenile life quality has a significant impact on emerging the criminal behavior in different aspects.

1.2: Juvenile Delinquency and the Roots of the Immediate Risk Factors

Some delinquents who were unreachable and failed to respond to juvenile interventions may at age 17 or 18 become depressed and then be accessible and motivated for treatment and rehabilitation. If their needs and potentials remain unrecognized, they may act out their depression with continued offenses, alcoholism, drug dependence, and social mal-adaptations. Untreated, such depressions are long-lasting and have far-reaching influences upon family.

Many may think that juvenile crime is on the rise, but it may actually be declining. According to a 1999 report by the Federal Bureau of Investigation (FBI), violent juvenile crimes fell steadily from 1995 to 1998 after peaking in 1994, and the arrest rate of violent juvenile crimes declined 30% from 1994 through 1998.
However, it is important to note that it is difficult to accurately quantify these figures for several reasons. Often, crimes committed by juveniles are not reported and those that are may not result in an arrest. Crimes are more likely to be reported when they involve a serious injury or large economic loss. Statistics on reported crime may reflect not only the number of crimes committed, but also in the willingness of victims to report crimes to law enforcement agencies, and in the inclination of the police to make records of incidents reported by victims. Many cases of reported crime may not result in a trial, therefore never entering the justice system.

1.2.1: Contributing Factors

Mental illness and substance abuse, which often co-occur among juvenile offenders, can contribute substantially to delinquent behavior. Studies have consistently found very high prevalence rates of mental illness among detained and incarcerated juveniles, and juvenile offenders generally. While estimates of the percentage of juvenile offenders who have mental health problems vary widely (e.g. between about 30-90%, depending upon what is included as a mental illness), most estimates are substantially higher than the roughly 20% prevalence rate found in the non-delinquent adolescent population. Indeed, many juvenile offenders have multiple mental health problems, and about 15-20% have a serious mental illness. Lack of appropriate treatment in adolescence may lead to further delinquency, adult criminality, and adult mental illness (Frances, 1999).
1.2.2: Individual risk factors

Individual, psychological or behavioral risk factors that may make offending more likely include intelligence, impulsiveness or the inability to delay gratification, aggression, empathy, and restlessness (Farrington, 2002). Children with low intelligence are likely to do worse in school. This may increase the chances of offending because low educational attainment, a low attachment to school, and low educational aspirations are all risk factors for offending in themselves (Walklate, 2003). Children who perform poorly at school are also more likely to truant, which is also linked to offending (Farrington, 2002). If strain theory or sub cultural theory is valid poor educational attainment could lead to crime as children were unable to attain wealth and status legally. However it must be born in mind that defining and measuring intelligence is troublesome. Young males are especially likely to be impulsive which could mean they disregard the long-term consequences of their actions, have a lack of self-control, and are unable to postpone immediate gratification. This may explain why they disproportionately offend (Farrington, 2002) (Walklate, 2003). Impulsiveness is seen by some as the key aspect of a child's personality that predicts offending (Farrington, 2002). However is not clear whether these aspects of personality are a result of “deficits in the executive functions of the brain”, (Farrington, 2002).
1.2.3: Health Issues

Health affects our daily lives in countless ways. Good health makes it easier to be a positive and productive person. Poor health can produce the opposite results, particularly if it is chronic. Health also plays a role in the development of the immediate risk factors for violence involving youth. Certain health issues are closely linked to some of the other roots that we have already discussed, rather than being roots themselves. Example includes nutritional deficits, physical inactivity, obesity or eating disorders, which have links to other roots such as poverty and urban designs. Other health issues, such as mental health and substance abuse, can be viewed as direct roots of the immediate risk factors for violence involving youth, particularly alienation and no sense of belonging.

1.2.4: Mental disorders


Some juvenile behavior is attributed to the diagnosable disorder known as conduct disorder. In accordance to the DSM-IV-TR Codes 312.xx (where xx varies upon the specific subtype exhibited) adolescents who exhibit conduct disorder also show a lack of empathy and disregard for societal norms. Juvenile delinquents who have recurring encounters with the criminal justice system are sometimes diagnosed with conduct disorders because they show a continuous disregard for their own and others safety and property. Once the juvenile continues to exhibit the same behavioral
patterns and turns eighteen he is then at risk of being diagnosed with antisocial personality disorder and much more prone to become a serious criminal offender.

Mental health is an often-overlooked, but very significant, issue for youth. Of course, the majority of young people who experience mental health issues are not involved in violence. But as we heard from the Centre for Addiction and Mental Health, the mental health of some young people, if not addressed, can lead to the immediate risk factors for violence involving youth. A literature review commissioned by the Ontario Ministry of Children and Youth Services for submission to this review confirms this general view:

“In the age group committing the most violent incidents, individuals with mental disorders account for a considerable amount of violence in the community”. Retrospective studies have shown that more youth with mental health disorders are arrested for violent offences than are youth who do not meet the diagnostic criteria for mental disorders (Leschied, 2007).

The kinds of mental health issues that children and youth experience cover a broad spectrum. At the milder end of this spectrum are mental distresses that can result from, for example, school performance anxiety and bullying. Other children suffer more serious mental disorders, such as attention deficit hyper-activity disorders or psychiatric illnesses such as schizophrenia or bipolar disorders. Some children may suffer post-traumatic stress as a result of witnessing violence in their homes, communities or schools.

The symptoms of these various mental distresses, disorders or illnesses vary among individual young people, depending on such factors as personality, family life,
socio-economic situations and access to treatment. Sometimes, the mental health symptoms experienced by youth can include characteristics consistent with the immediate risk factors for violence involving youth, including feelings of alienation, impulsivity, hopelessness and low self-esteem.

The high rates of mental health problems among young people concern us greatly. It has been estimated that, across cultures, one in five of Ontario’s children and youth experience a mental health or behavioral disorder requiring intervention (Offord et al., 1989, cited in Leschied, 2007: 23). According to the Reaching for the Top report by the federal Advisor on Healthy Children and Youth, 80 per cent of all psychiatric disorders emerge in adolescence, and psychiatric disorder is the single most common illness that begins in this age group. However, only one in five young people who need mental health services receives them (Leitch, 2007).

The result is that many young people experiencing mental health problems do not receive mental health services or support. This lack of treatment has several impacts relevant to the immediate risk factors. First, it allows the mental health condition to worsen and its effects on the youth (and their alienation and low self-esteem) to grow. Second, it adds pressure and stress to the families of these youth. And third, it can lead to the youth disrupting the lives of classmates, friends and peers.

1.2.5: Substance Abuse

Illegal substance and alcohol use, particularly where the use is heavy and consistent and linked with mental health issues, can readily lead to the immediate risk factors. Also linked with substance abuse are other factors that can contribute to
childhood and youth problems, such as poverty, social disadvantage, and poor academic achievement and weak family units. Substance abuse is so imbedded in social and academic life that “schools and communities are concerned about improving achievement, they must address both attitudes and behaviors related to substance use and violence” (Mandell et al., cited in Leschied, 2007).

1.2.6: Family Issues

Family factors which may have an influence on offenders include; the level of parental supervision, the way parents discipline a child, parental conflict or separation, criminal parents or siblings, parental abuse or neglect, and the quality of the parent-child relationship. Children brought up by lone parents are more likely to start offending than those who live with two natural parents, however once the attachment a child feels towards their parent(s) and the level of parental supervision are taken into account, children in single parent families are no more likely to offend than others (Graham & Bowling, 1995). Conflict between a child's parents is also much more closely linked to offenders than being raised by a lone parent. (Walklate, 2003) If a child has low parental supervision they are much more likely to offend. Many studies have found a strong correlation between a lack of supervision and offending, and it appears to be the most important family influence on offending (Farrington, 2002), (Graham & Bowling, 1995). When parents commonly do not know where their children are, what their activities are, or who their friends are, children are more likely to truant from school and have delinquent friends, each of which are linked to offending. A lack of supervision is connected to poor relationships between children and parents, as children who are often in conflict with their parents
may be less willing to discuss their activities with them (Graham & Bowling, 1995). Children with a weak attachment to their parents are more likely to offend. Children resulting from unintended pregnancies are more likely to exhibit delinquent behavior. They also have lower mother-child relationship quality.

In addition, other factors also play a role as risk factors in delinquency and criminal behavior, such as:

- Poverty
- Racism
- Community Design
- Education System
- Lack of Economic Opportunity for Youth
- Denial of the Youth Voice
- Immigration Settlement Issues
- Justice System

1.3: Psycho-Somatic Disorders

The fourth edition of DSM-IV (American Psychiatric Association, 1994), in chapter 28, describes psychological factors affecting medical conditions as one or more psychological or behavioral problems that adversely and significantly affect the course or outcome of a general medical condition or which significantly increases a person’s risk of adverse outcome. Psycho-Somatic medicine is now part of the larger field of behavioral medicine, and DSM-IV uses the phrase psychological factors affecting medical condition in place of the term Psycho-Somatic (Diagnostic and
Nevertheless, few would disagree that psychological or behavioral factors play a role in almost every medical condition.

Psycho-Somatic medicine emphasizes the unity of mind and body and the interaction between them. Overall, the conviction is that psychological factors are important in the development of all diseases. Whether that role is in the initiation, progression, aggravation, or exacerbation of a disease, or in the predisposition or reaction to a disease, is open to debate and varies from disorder to disorder.

According to DSM-IV meet, criteria for Psychological Factors Affecting Medical Condition, both criteria A and B are necessary:

A. A general medical condition is present.

B. Psychological or behavioral factors adversely affect the general medical condition in one of the following ways:

1. the factors have influenced the course of the general medical condition as shown by a close temporal association between the psychological factors and the development or exacerbation of, or delayed recovery from, the general medical condition

2. the factors interfere with the treatment of the general medical condition (e.g., poor adherence)

3. the factors constitute additional well-established health risks for the individual
4. The factors influence the underlying path of physiology to precipitate or exacerbate symptoms or to necessitate medical attention (DSM-IV, P.797).

Psycho-Somatic disorders are manifestations of physical imbalance in which emotional components have a strong influence. The link between the affect and compromised health issues can be followed, in such cases, as the disease emerges, develops or repeats its pattern over time. "Psycho" or "psyche" refers to the emotional or mind related aspects and "somatic" has to do with the organic or physical symptoms and signs observed.

Recent research has revealed that inappropriate activation of the autonomous nervous apparatus, endocrine network (hormones and internal secretion glands), and the immune system (defense structures and cells) accounts for several of the known paths that link emotional overload to a condition of organic dysfunction and, in some cases, even physical damage.

1.3.1: Field of Study and Synonyms

Given the way in which Psycho-Somatic diseases are characterized by the disruption (pathology) of normally occurring vital mechanisms (physiology), as well as the peculiar interaction of the different organic systems, the field that studies them has been given a variety of names over the years. Apart from Psycho-Somatics, psycho-neuro-immunology is a common denotation. This complex word refers to the fact that this discipline studies the ways that the psyche (the mind and its content of emotions) interacts with the body's nervous system and how both of them, in turn, form an essential link with our immune defenses. Some have called this new field
psychoneuroimmunoendocrinology to indicate that the endocrine, or hormonal, apparatus is also a part of our system of whole-body response (Mate 2003).

An increasing tendency in academic papers has been to name it "psychophysiology". Body-mind medicine, though, seems to be the most popular synonym.

1.3.2: Classification of Psycho-Somatic disorders

Two of the main classification systems used in health care is the ICD 10 (International Classification of Diseases, tenth edition) and the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, fourth edition). Psycho-Somatic disorders, however, do not fall neatly into the categories of either system. In a broad sense, the concept may include "somatoform disorders" as well as "disorders with psychological factors assumed to play a major role in the etiology, triggering, and maintenance of somatic complaints" (Flammer and Alladin 2007).

1.3.3: The Human Factors

Lowen (1997), describes a main trait that will often be found in the Psycho-Somatic clinic: a seemingly adjusted personality, in which neurotic symptoms have a dramatic quality and dominate the clinical picture. Upbringing, environment, social settings, genetics and personal interpretations of events, as well as the capacity to cope with the elements that come together as the person develops and interacts seem to play an important role when confronted with a Psycho-Somatic manifestation. The
key aspect of all these disorders are that they are enduring; relatively immutable conditions that represent a baseline substrate of impaired adaptedness, of deficiencies or distortions that limit the capacity to adapt successfully to the demands of life (Oken 2000). A neurological "wiring" develops through the influence of environmental and genetic factors as we go through life. Each event we participate in is interpreted in terms of previous events, in terms of ongoing activities, and in terms of implications for the future (Benson 1997).

Human beings themselves often prove to be one of the main challenges to the identification and successful treatment of Psycho-Somatic disorders. For the human mind, the mind-body integration raises strong resistances; the same happens with the acceptance that we are unavoidably vinculated (linked). Nevertheless, body, mind and links are essential dimensions of our being, determining our life and our death, our health or our disease, our pleasure and our pain (Boschan 2007). We store memories that come to the fore at any given time from the bottom up when triggered by impulses from our environment or from within the body. Being wired, we are always scanning our body internally (Benson 1997). As we develop better investigation as well as assessment methods and broaden the sharing of empiric observation, this essential interrelation will become more evident.

1.3.4: Historical Highlights

The notion that the mind affects organic processes and that what happens in the body is more or less intensely connected to thinking and emotional patterns, has been frequently described throughout history. Hippocrates (460-377 BC), the father of
clinical medicine, posited four bodily fluids (humors) that, when out of balance, led to various physical maladies. Although Hippocrates may have had the details wrong he provided prescient guidance regarding possible connection between emotion and health (Salovey, Rothman, Detweiler and Steward 2000).

The system "psyche-soul/soma-body" has been an essential philosophical theme for at least the last 2500 years. In ancient Greece, Anaxagoras (500-428 BC) established a distinction between the two. In the 1600's Rene Descartes proposed that the soul's main function is related to thinking/intellectual ability and that all other functions are part of the physical realm (Moreira 2003). Descartes called the organic component the res extensa (extended matter), opposed to the res cogitans (thinking matter), his designation for the soul. From then on the perception of the body as predominantly a mechanic system became preponderant in western culture. It was not until the second half of the last century, that the need to recover an integrated view of human life led to the inclusion and conceptualization, in modern thought, of the important role played by emotions and affective bonds in health and disease (Boschan 2007).

In 1892 Dr. Sigmund Freud collaborated with Dr. Josef Breuer in a study of hysterical symptoms, later redefined as "conversion disorders". The techniques and theories of psychoanalysis originated as answers to the problems presented by hysterical patients. Freud stated his belief that the hysterical symptoms represented an abnormal form of discharge. When a person experiences a significant event, Freud proposes that a discharge of feeling is the habitual reaction. When such discharge is avoided as the event takes place, hysterical symptoms may develop. This crucial realization of a relationship between psychic illness and emotional energy was thus
found (Boadella 1975). The concepts of Ego, Id and Superego were used by Freud to describe the structure of the psyche. The central nervous system and the concept of Freud's 'ego' are interdependent. According to Nunnely (2000), in the instance where the ego encounters deeper primitive body mechanisms, is where the ego meets the other Freudian concept, the 'id'. The conscious (ego) meets the unconscious (id).

Wilhelm Reich, an enthusiast of Freud's first theories on psychoanalysis, expanded the latter's investigation of anxiety and among other early contributions, described how it appears to be a psychic counterpart to a vasomotor neurosis (an outdated concept that refers to changes in the circulatory system due to involuntary nervous system dysfunction). The development of this theory into a full Psycho-Somatic understanding required many more years and further research (Boadella 1975) after which emerged the basis for related psychotherapeutic approaches that include emotional treatment associated with body-work techniques.

As a young resident at the Burghölzli psychiatric hospital in Zürich, Carl Gustav Jung researched the structure of the psyche through experiments using a word association test. He noticed that particular words triggered something that interfered with normal mental processes, preventing the subject of the experiment from responding to these words in the same way that he or she responded to other words. Further, by discussing both the stimulus and the response words with the subject, Jung found that stories of painful or difficult experiences often surfaced (Sparks 2007). The following years, comprised an intensive exploration of concepts related to the unconscious, its influence on the mind and its effects on behavior, as well as disease. His findings from this period led him to reflect that the psyche is perhaps the most
baffling and unapproachable phenomenon with which the scientific mind has ever had to deal (Jung 1993).

Georg Groddeck was attuned to Freud's claims that symptoms have interior meanings, and they will recede after their meanings are understood and interpreted to a patient. Strongly backed by their clinical results and Jung's association technique, early psychoanalysts—more or less explicitly—emphasized the hermeneutic approach and opposed the medical model of diseases. Groddeck almost independently discovered some of the basic psychoanalytic concepts and procedures. His theory of illness was the most developed of the early psychoanalysis. For Groddeck there was no real difference between the psyche and the soma, between the sexes or age, or between health and illness. Because of his many contributions to the field, he is now known as the originator of the Psycho-Somatic approach (Dimitrijevic 2008).

A major key to the understanding of Psycho-Somatic phenomena are fight and flight reactions, studied as a component of the stress response by Hans Selye. While still a medical student Selye noticed a group of nonspecific symptoms common to the initial phase of different morbid states (Moreira 2003). He associated that condition with a "sickness syndrome", now understood to be a range of behavioral and physiological changes that help to conserve metabolic resources during periods of challenge or stress, such as loss of appetite and consequent weight loss, decreased behavioral activity, loss of interest in pleasurable activities (anhedonia), and enhanced pain sensitivity (hyperalgesia and allodynia) (Gröer, Meagher & Kendall-Tackett 2010). As a scientist Selye continued to investigate the challenges to organic economy and developed the "stress theory", a label he borrowed from engineering, which refers to the joint forces that act against given forms of resistance. In living organisms these
forces are involved with the drive towards vitality and preservation against the ones that lead to degeneration and destruction. When the stress response is too intense or held over a long period of time without adequate return to balance, however, it can become a state of tension and restlessness, illness and suffering (Moreira 2003). Factors that trigger or maintain such state are generally named stressors. Different individuals manifest the effects of persistent stress in different organs; depending on prior susceptibility i.e. someone who already has atherosclerosis is at higher risk for a stress induced cardiac disease (Frank, Weihs, Minerva and Lieberman 1998).

1.4: Quality of life

Quality of life, which has gained prominence in social research study since the 1970s is a broad concept concerned with overall well-being within society. Its aim is to enable people, as far as possible, to achieve their goals and choose their ideal lifestyle. In that sense, the quality of life concept goes beyond the living conditions approach, which tends to focus on the material resources available to individuals (Alber, 2004). Three major characteristics are associated with the quality of life concept (Fahey, T., Nolan, B., and Whelan, C., 2003).

1. Quality of life refers to individuals’ life situations. The concept requires a micro perspective, where the conditions and perceptions of individuals play a key role. Macroscopic features relating to the economic and social situation of a society are important for putting the findings at individual level into their proper context, but they do not take centre stage.
2. Quality of life is a multi-dimensional concept. As noted above, the notion of quality and the consideration of several areas of life broaden the narrower focus on income and material conditions which prevails in other approaches. Multi-dimensionality not only requires the description of several life domains, but emphasizes the interplay between domains as this contributes to quality of life.

3. Quality of life is measured by objective as well as subjective indicators. Subjective and attitudinal perceptions are of particular relevance in identifying individual goals and orientations. Individual perceptions and evaluations are most valuable when these subjective evaluations are linked to objective living conditions. Applying both ways of measuring quality of life gives a more complete picture.

1.4.1: Determinants of quality of life

The nine quality of life factors, and the indicators used to represent these factors, are:

1. Material wellbeing
2. Health
3. Political stability and security
4. Family life
5. Community life
6. Climate and geography
7. Job security
8. Political freedom
9. Gender equality
1.5: Statement of the Problem

The present study is aimed to assess levels of proneness for various psychosomatic disorders and quality of life and their relationship among delinquents and normal juveniles.

1.6: Need and importance of the Study

Juveniles encompass a remarkable portion of society and undoubtedly in future the social affairs will be run by them. Therefore, considering and investigating the related issues are going to receive a momentous attention. One of these issues is juvenile delinquency which can be studied in different aspects. A number of juveniles act against rules for different reasons and are at present in jail or stay in the juvenile penitentiary. Investigating the reasons of juvenile delinquency requires paying attention to their life, psychological and social models as in other physical and mental disorders.

It is clear that, one of the ways to prevent juvenile delinquency is to identify and prevent the criminal creating factors. Studying the rate of Psycho-Somatic diseases among juveniles as one of the psychological and physiological factors, and attempting to lessen or cure them, plays an important role in understanding and preventing the outbreak of juvenile delinquency.

On the other hand, studies support that juvenile life quality has a significant impact on emerging criminal behavior in different aspects. As a result, to be aware of
existence and prevalence of these disorders, getting informed of juvenile delinquents’ quality of life and comparing them with normal juveniles has a great rate in identifying and preventing the criminal causing factors. Actually it seems there is a ‘gap in the knowledge’ in this area.

Research over the past few decades on normal child development and on development of delinquent behavior has shown that individual, social and community conditions as well as their interactions influence behavior. There is general agreement that behavior, including antisocial and delinquent behavior, is the result of a complex interplay of individual biological genetic factors and environmental factors, starting during fetal development and continuing throughout life (Bock and Goode, 1996). Clearly, genes affect biological development, but there is no biological development without environmental input. Thus, both biology and environment influence behavior.

Many children reach adulthood without involvement in serious delinquent behavior, even in the face of multiple risks. Although risk factors may help identify which child is most in need of preventive interventions, they cannot identify which particular child will become serious or chronic offender. It has long been known that most adult criminals were involved in delinquent behavior as children and adolescents; most delinquent children and adolescents, however, do not grow up to be adult criminals (Robins, 1978). Similarly, most serious, chronically delinquent children and adolescents experience a number of risk factors at various levels, but most children and adolescents with risk factors do not become serious, chronic delinquents.

Furthermore, any individual factor contributes only a small part to the increase in risk. It is, however, widely recognized that the more risk factors a child or
adolescent experiences, the higher their risk for delinquent behavior. Regarding causal relationship of Psycho-Somatic disorders, quality of life and crime commitment, the present study is an attempt to investigate the proneness to various Psycho-Somatic disorders and quality of life among delinquents and normal juveniles.

1.7: Research variables

In this study delinquency is considered as an independent variable and proneness to Psycho-Somatic disorders and quality of life are dependent variables.

1.8. Definition of terms

a. Theoretical definitions

a. 1: Juvenile delinquency: Refers to antisocial or illegal behavior by minors that are subject to legal action (Agnes, 1996).

a. 2: Psycho-Somatic disorders: Psycho-Somatic disorder is one in which the physical symptoms are caused or exacerbated by psychological factors, as in migraine headaches, lower back pain, or irritable bowel syndrome.

a. 3: Quality of life: Quality of life is defined as an individual's perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations and standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, and level of independence, social relationships, and their relationship to salient features of their environment (Bowling, 2001).
b. **Operational definition**

b.1: *Juvenile delinquency:* Juvenile delinquency is the criminal behavior exhibited by adolescents under age 18, and according to Iranian law, the perpetrators of these crimes need to be rehabilitated in places called ‘improvement and training centers’ (penitentiary centers).

b.2: *Psycho-Somatic disorders:* In this study, Psycho-Somatic disorders refers to six sub group disorders, which define 6 different types of personality proneness to different diseases, measured by *Short Interpersonal Reactions Inventory (SIRI).* The six types are cancer prone, coronary heart disease prone, psychopathic behavior, healthy personality, depression prone and addiction prone.

b.3: Quality of life: quality of life in this study is defined as score that is obtained in WHOQOL -BREF questionnaire (26 items).