Chapter-II

Review of Literature
Suicidal behaviour has a large number of underlying causes. The factors that place an individual at risk for suicide are complex and interact with one another. Identifying these factors and understanding their roles in both fatal and non-fatal suicidal behaviours are central to preventing suicide.

A number of specific characteristics that are closely associated with a heightened risk for suicidal behaviour include such demographic factors as age and sex, psychiatric disorders, biological, social and environmental factors, as well as factors related to an individual's life history.

Tanney (1992), appropriately noted that mental disorders have clearly been found to be associated with suicide, yet continued and reminded us that association does not equate to causation. He proposes a number of direct, indirect, interactive and co-occurring mechanisms to explain the observed association. There remain a compelling need to better understand, and explore this underlying mechanisms and, in particular, the multiple driving forces that led one severely pathological person to suicide and an equally pathological person to sustaining life in spite of the impact of their mental disorders.

There is insufficient knowledge to differentiate what turns one's psychological despair into suicidal ideation and another's into suicidal impulse, and yet a third's into suicidal behaviour; no less to describe the pathway to despair to ideation to impulse to behaviour when all occur in the same individual.

The development of a comprehensive theory of suicide remains elusive. Those few newer theoretical positions that have been put forth have yet to stimulate significant research interest to advance the field. For example, Shneidman (1996) has forcefully argued that
there can be no suicide without psychological pain stemming from thwarted, frustrated, or distorted psychological needs. More recently, Joiner (2006) has articulated a theory that adds considerably to our needs to better understand concepts such as thwarted belongingness and burdensomeness which he argues are central to the suicidal process.

Review of literature on suicide revealed that studies are mainly compartmentalized in nature. Various factors associated with suicide have been addressed separately by the researchers. Ample studies have addressed suicide and depression. A few have discussed the role of cognitive styles in suicide. A large number of studies highlighted the role of risk factors in suicide. But very few literatures revealed the role of ego functions as personality variables that predicts the formation of pathology of suicide. Especially in Indian context such studies are depressingly rare.

In this section representative study relating to one or more factors or variables in suicide has been included. The present review has been covering important and relevant empirical research works conducted mostly during last three decades.

The present review has been grouped under the following categories:

1. Epidemiology of suicide and attempted suicide.
2. Risk factors for suicide and attempted suicide
   2.1 Stress and socio demographic factors
   2.2 Psychological variables and attempted suicide
      2.2.1 Ego functions and attempted suicide
      2.2.2 Ego functions in relation with development of pathology
      2.2.3 Ego functions and depression
      2.2.4 Cognitive style and attempted suicide
      2.2.5 Depression and attempted suicide
3. Suicidal ideation in normal population.
2.1 Epidemiology of suicide and attempted suicide

Worldwide, approximately, 1% of deaths are due to suicide. During the past decade, there have been dramatic and disturbing increases in suicide. Over one million people commit suicide every year the world over. It is estimated that by the year 2020, 1.53 million would die by suicide every year and suicide will represent 2.4 percent of the total burden of disease. 10-20 times more people will attempt suicide worldwide. This represents, on an average, one death every 20 seconds and one attempt every 1-2 seconds. Although overall suicide rates represent an important estimate of the burden of this phenomenon, another factor to consider is the effect of premature mortality.

In the year 2000 an estimated 815,000 people died from suicide around the world. This represents an annual global mortality rate of about 14.5 per 100,000 populations or one death about every 40 seconds. Suicide is the thirteenth leading cause of death worldwide. Among those aged 15-44 years, self inflicted injuries are 4th leading cause of death and the 5th leading cause of ill health and disability (W.H.O., 1999).

National suicide rates vary considerably with highest suicide rates found in Eastern European countries, the Russian federation and Sri Lanka (Gururaj et al., 2001) and low rates found mainly in Latin America and some Asian countries like Philippines and Thailand (Lester, 1998).

In India, 118,112 persons lost their lives by committing suicide during the year 2006. The number of suicides in the country during the decade 1996-2006 has recorded an increase of 33.9% (National Crime Record Bureau, 2006) and West Bengal has reported has highest number of suicides (15,725) accounting to 13.3% of total suicides followed by Maharastra (15,494) accounting for 13.1% of total suicides. The majority of suicide (37.8%) in India is by those below the age of 30 years. The fact that 71% of suicide in India are by the persons below the age of 44 years imposes a huge social, emotional and economic burden on our society (National Crime Record Bureau, 2005).

The rate of suicide from 1995-1999 shows an increase in incident in suicide; over 1 lakh of people commit suicide in India (Girdhar et al., 2003). Illness and interpersonal/
familial factors appear to be common motives. W.H.O. (1999) reported that suicide rate in India is approximately 11.4/100,000 in males and 8/100,000 in females. Chavan et al. (2008) researched in psychological autopsy of 101 suicide cases from North-West region in India. They reported that majority (59.4%) of suicide victims were in the age group of 20-29 years. Males (57.4%) slightly outnumbered females (42.57%) in the study.

Soman et al. (2008) researched in psychological autopsy of 284 cases of suicide in Kerala (South India). The suicide rates were 44.7/100,000 for males and 26.8/100,000 for females. Among females aged between 15 and 24, suicides constituted more than 50% of all deaths.

One important demographic marker of suicide is age. Globally suicide rates tend to increase with age. Though suicidal rates are generally higher among older people, the absolute number of case recorded is actually higher among those under 45 years of age. Suicide rates are higher among men than women.

Relatively few countries have reliable data on nonfatal suicidal behaviour. The main reason is the difficulty of collecting information. There is some evidence to suggest that an average only about 25% of those carrying out suicidal acts make contact with a public hospital. Thus the reported cases are only the tip of the iceberg, and the large majority of suicidal people remain unnoticed (Diekstra & Garnefski, 1995).

Available figures show, both relative to their population size and in absolute numbers that non fatal suicidal behaviour is more prevalent in younger people than among elder. The ratio of fatal to non-fatal suicidal behaviour in those over the age of 65 years is estimated to be of the order of 1: 2-3, while in young people under 25 years the ratio may reach 1: 100-200 (McIntire & Angle, 1981; McIntosh et al., 1994). As a general trend rates of nonfatal suicidal behaviour tend to be 2-3 times higher in women than in men. Finland though is a remarkable exception to the pattern (Schmidtke et al., 1996).

Suicidal ideation is more common than both attempted and completed suicide (Kessler et al., 1999). However its extent is still unclear. A review of studies published after 1985 on adolescent populations suggested that between 3.5%-52.1% of adolescent reports suicidal
thoughts. There is evidence that women, including those in old age, are more prone to suicidal thoughts than are men (Linden & Barnow, 1997).

The above statistics are alarming enough to identify the risk factors and implement development of preventive approaches in attempted suicide.

2.2 Risk factors for suicide and attempted suicide

Though statistics points to suicide and attempted suicide rates being high, there seems to be little consensus as to why people kill themselves. According to Schneidman (1993) suicidal acts are multi-factorial events and different categories of suicidal behaviour have different etiology, pathogenesis and expression.

2.2.1 Stress and socio-demographic factors

Adverse life events such as interpersonal loss or conflict, financial difficulty or serious physical illness can serve as important precipitants of suicide.

Badrinarayana (1980), in his study discussed upon a positive and significant association of depressive illness and suicidal tendency with early parental deprivation, recent bereavement and positive family history of suicidal behaviour.

Srivastava & Sinha (1989) conducted research on ‘Stressful Life Events and Health’. The study was planned to find out the magnitude of relationship between stressful life events and health in hundred individuals including males and females from middle socioeconomic status. Result reveals positive significant relationship between stressful life events and emotional and physical distress. Stressful life events in last one year were more closely related to emotional distress than physical one.

Cavanagh & colleagues (1999) matched case and control subjects on age, sex and diagnosis and found greater interpersonal family adversity as well as greater physical ill health in those who completed suicide.
Sudhirkumar & Chandrashekharan (2000) studied demographic and clinical variables of adolescent suicide attempters and compared certain potential risk factors between adolescent and adult suicide attempters. The sample comprised of 74 adolescent and 129 adult patients attempted suicide. Apart from socio demographic data, Suicide Intent Scale, Risk Rescue Rating, Hopelessness Scale, Montgomery Asberg Depression Rating Scale, and Presumptive Stressful Life Events Scale were used. The result revealed adolescents differ significantly from adults in levels of depression, hopelessness, lethality of attempt and stressful life events.

Srivastava et al. (2004) conducted a study to identify the risk factors associated with attempted suicide among people living around Pondichery. Sample consisted of 137 consecutive cases of attempted suicide patients and equal number of matched controls subjects. The factors identified to be significantly associated with the risk of attempt were unemployment, stressful life events, and lack of formal education, suffering from physical disorders and suffering from idiopathic pain. Significant association was not revealed in respect to marital status, type of family, early parental losses, family history of suicide and presence of psychiatric morbidity.

Khan et al. (2005) studied the profile of suicide completers and find out ways of dealing with it. 50 cases were analyzed, where the family, friends and relatives of the deceased were interviewed by using a semi structured, self designed questionnaire. Result showed that some type of psychiatric disorder and stressful life events are two important reasons for committing suicide.

Fairweather et al. (2006) studied factors distinguishing suicide attempters from suicide ideators. This study assesses demographics, employment status, mental and physical health conditions, personality, life stresses and social environment. The study was done on 7485 people in Canberra, Australia. Result revealed that factors distinguishing those who attempted suicide from suicide ideators involve being unemployment, physical ill health and relationship difficulties. Contrary to expectation, this study found that ideators and attempters experience comparable levels of depression and anxiety.
A study by Prasad et al. (2006), on the factors associated with suicide in Tamilnadu reported recent adverse life events, interpersonal stress and relationship difficulties, severe financial distress, the use of alcohol, and issues related to gender as risk factors.

Chowdhury et al. (2007) studied psychosocial stressors and gender specificity in DSH of people living in Sundarban region, in West Bengal, India. It is revealed that different gender specific causes were instrumental behind the female DSH attempt, like dowry demand and torture, mental and physical humiliation by the in-laws, emotional or economic distress resulting from alcohol abuse and extra-marital relation of husband. In the male unsuccessful examination or love affair and economic hardship are more common.

Sharma et al. (2008) investigated suicidal behaviour amongst adolescent students in south Delhi. It was a cross sectional study conducted in three schools and two colleges in south Delhi. A total of 550 adolescent students aged between 14-19 years were selected as sample by cluster sampling. A pre-tested semi open ended and self administered questionnaire was used. Result revealed about 15.8% reported having thought of attempting suicide, while 5.1% had actually attempted suicide, both being more in females than in males. Statistically significant association was observed with the age of the student, living status of the parents, working status of mother and whether the student was working part-time. The two variables found significant on multivariate analysis were female gender and the number of role models the student had ever seen smoking or drinking.

From the above review it is evident that stressful life events play an important role as a precipitating factor in suicidal behaviour. But how the stressful life events interact with other factors like personality and cognitive styles in causation of suicidal behaviour is not studied adequately. The present study attempts to fulfil this lacuna of the earlier studies.
2.2.2 Psychological variables and attempted suicide

2.2.2.1 Ego functions and attempted suicide

Goldsmith (1979) explored the relationship between humour, as a manifestation of the capacity for adaptive regression, and suicide lethality, as a manifestation of a pathological regressive process. Subjects were assessed on Bellak et al.’s (1973) Clinical Rating Scale of ‘Adaptive Regression in the Service of the Ego’ (ARISE), humour measures derived from O’Connell’s ‘Story Test’, The Favourite Joke Technique, and Suicide Potentiality Rating Scale. Suicidality and humour were also correlated with measures of ego strength and depression. Results confirmed a hypothesized significant negative relationship between suicidality and both adaptive regression and ego strength, as well as a positive relationship between ego strength and humour and between different measures of adaptive regression.

Borst & Noam (1993) studied two distinct profiles of female suicide attempters based on social cognitive development and investigated the relationship of both developmental and suicide risk variables in those profiles. The sample included 139 girls aged 13-16 and were divided into four groups based on their suicidal status (attempted / non-suicidal) and ego development (pre-conformist/conformist) level. Result suggests comparing non suicidal girls with suicide attempters; depression was a major risk factor. Defence mechanisms were only associated with suicide at the pre-conformist developmental level.

Pfeffer et al. (1995) studied the relation between ego functions and suicidal attempts. 133 children with suicide attempt were assessed. They were followed up to 6-8 years for levels of Reality Testing (RT) and impulse control and frequency of use of ego defence mechanisms. Association between suicidal ideation and suicidal attempts at the initial assessment and at follow up were analysed with regard to ego functions. Specific ego functions such as impulsivity, poor reality testing and ego defence mechanisms (projection, regression, compensation and reaction formation) were positively associated with suicidal attempts in the follow up period. It is concluded that ego functions are
related to behaviour of consequences, and are useful in the identification of children at risk for suicidal behaviour.

Das et al. (2005) compared ego functions, cognitive styles, and stressful life events between patients with attempted suicide and normal population. The sample consisted of 30 attempted suicide patients and 30 normal subjects. Each group consisted of 15 males and 15 females. Result revealed that normal group scored significantly higher in 9 out of 12 ego functions, they experienced significantly less number of stressful life events and presumptive stress in last one year. At the same time, normal subjects experienced less number of undesirable life events and their cognitive style is better compared to attempted suicide group. Results suggest formulation of psychopathology of attempted suicide in terms of ego functions, stress and cognitive styles.

Dhar & Basu (2006) had done a comparative research on suicidal ideation, number of life events, presumptive stress and ego functions between college students with 'high' and 'low' suicidal risk. The result indicated that significant differences were present between two groups on the basis of number of life events, amount of presumptive stress with suicidal ideation. Five ego functions and presumptive stress were found to contribute significantly in development of suicidal ideation.

From the above findings it is very clear that studies on ego function with suicidal behaviour are very few. Especially studies on ego profile of the suicidal individuals are quite rare. No study is available that interpret the role of ego function in formation of psychopathology of suicidal behaviour especially on adult Indian population. In this context, the present study has attempted to address these factors not explored by earlier researchers.

2.2.2.2 Ego functions in relation with development of psychopathology

A preliminary survey of literature revealed that the published information with regard to ego function and attempted suicide are very few in number. At the same time published literature related to ego psychology, personality and coping are very limited. Hence
representative studies related to ego functions in development of various psychiatric disorders other than suicide are also included in this review.

A study by Bellak & Sheehy (1976) on broad role of Ego Function Assessment revealed that EFA is a reliable and valid quantitative technique in psychiatric set up. They suggest that EFA may be used in Professional Standards Review Organizations and third party funding, forensic psychiatry and legal responsibility, the monitoring of psychotherapeutic drugs, research and planning in psychotherapy, and psychological testing. The researcher concluded that EFA is a dynamically sophisticated and easily learned form of mental status examination and it can be refined by extensive use and simplification.

Schwindle et al. (1984) used ego function assessment in the long term treatment of depression with lithium carbonate with 2 patient groups. The first patient group (PG 1) was evaluated at the end of the depressive phase, and shortly before the beginning of lithium treatment. All of these patients were on antidepressants at the time of investigation. The other patient group (PG 2) was evaluated after lengthy treatment with lithium carbonate (mean duration of treatment-5 years). The patients did not require any additional antidepressant medication. The characteristics, lowest and current level of ego functioning were assessed in both groups. There were no differences between the two groups in terms of their characteristic level and the lowest level of functioning. By contrast a significant change was found in their current level of functioning. The ratings of PG-2 were in normal range suggesting long term therapy with lithium leads to a stabilization of personality functioning, and this can be determined through the use of ego function assessment.

Norring et al. (1989) used an analysis of ego functions (EFs) in a sample of 48 eating - disordered patients (46 females and 2 males) to determine whether eating disorder subgroups (as specified in DSM III-R) differ with respect to EFs and variation exists within subgroups, and whether subgroups can be classified based on EFs. Results showed that variation in EFs ware considerable, and a cluster analysis identified 4 clusters: higher neurotic, lower neurotic, borderline and borderline psychotic. Cluster showed markedly
different patterns in their associations with clinical variables, correlations between them indicated an orthogonal relationship between clusters.

Berg (1990) investigated differences in 50 patients with borderline personality disorder and 26 patients with narcissistic personality disorder by examining their response to Rorschach structural and content variables. The borderline subjects produced greater distortion in reality testing and the narcissistic subjects produced more insidious thought process disturbance. Higher functioning groups showed greater control of impulses. Borderline subjects demonstrated more effective construction than narcissists and used the defense of splitting more often. Findings suggest that 1) EFs mature inconsistently, 2) affective responsivity influences ego disorganization, 3) level of functioning and Intelligent Quotient are related to the production of Rorschach variables.

Westen et al. (1990) explored the relationship between developmental history variables and several dimensions of object relations (OR) in 36 adolescent female inpatients. OR were assessed from Thematic Apperception Test responses. Results reveal significant findings on the relationship between OR, parental pathology and document the importance of pre-oedipal experience, the relationship with the mother and continuity of attachment in shaping OR. Data also point to the importance of distinguishing different dimensions of OR, such as the affective quality of the object world and the logic and accuracy of attributions which may have different developmental correlations. Sexual abuse, typically a post-oedipal experience, impacts on enduring object relational phases.

Conte et al. (1991) conducted research on interrelations between ego functions and personality traits and their relationship in developing psychotherapy. At the time of their admission, 90 psychiatric outpatients completed self report measures of 4 EFs (JD, SF, MC and ego strength) and a personality test that assesses 8 traits like acceptance, submission, passivity, depression, rejection, aggression, assertion, sociability and conflict. Results showed high correlations between the 3 EFs (SF, MC and ego strength) and personality trait measures and outcome measures of psychotherapy as measured by Psychiatric Outpatient Rating Scale (PORS). Among the EFs MC and ego strength appeared to be the best predictors of PORS, discharge and change scores.
Alpher (1991) presented a case of 27 year woman with multiple personality disorder (MPD) in whom a self report multi-factorial measure of ego functioning with other assessment discriminated 4 personalities within the subject. The author suggested that this approach might facilitate the assessment of suspected MPDs and contribute to afford appropriate treatment of this population.

In a comparative study between borderline personality disorders (BPD) and eating disorder (ED) patients demographic, descriptive/behavioural, and ego function were measured (Smith et al., 1991). Ratings of intra-psychic function were made using Bellak's Ego Function Assessment (EFA) profiles. The EFA profile of BPD group falls within the "borderline" range as defined by Bellak (1984). Ego functions with the lowest scores were OR, DF, and MC. The mean EFA profile for the ED group is higher ego functioning, more in the "neurotic" range defined by Bellak (1984). DC, AR, DF, and SR in ED group were similar to BPD group. AF in BPD group was similar to ED group.

Mukhopadhyay et al. (1992) investigated the mental health aspect of socially recognized creative persons. The Rorschach test and the EFA-M were administered on 11 creative persons from the domains of poetry, painting and drama and 11 non creative matches from general population. Results revealed that AR was found to be significantly higher in creative whereas RT, SR, DC, SB were found to be significantly higher in non-creative persons. Findings also suggest that overall personality configuration of the creative person was substantially different from non-creative person.

Koga (1993) compared 28 borderline personality patients with 19 neurotic patients. The clinical features and ego functions were examined. He concluded that - disorders of ego functions of BPD covered a wide range, and were especially noted in object relations. Brief psychotic experiences, depressive experiences, and impulsiveness are the characteristic of clinical features of BPD. BPD could be partly included in the schizophrenia spectrum and the affective disorder spectrum.

Basu & Bhattacharya (1995) studied cognitive and ego function status of Hemophiliac patients with normal subjects. The study was conducted on 18 adult Haemophiliac
patients and 18 matched normal subjects. They were individually administered the Standard Progressive Matrices, Witkin’s Embedded Figure Test and an adapted version of Bellak’s Ego Function Assessment Scale. The obtained results indicated that the Haemophiliacs did not differ significantly from their normal counterparts in terms of intelligence and field dependence. The differences were not significant for most ego functions except in ARISE and MC. It implies that Haemophiliacs had difficulty in flexible utilization of their cognitive properties.

Basu et al. (1998) studied the nature and degree of differences in the 12 ego functions among the diabetics (Insulin Dependent Diabetes mellitus-IDDM), the depressives and normals. They took 10 diabetes patients, 10 depressive patients and 10 normal subjects aged between 20-40 years as sample of the study. General Health Questionnaire-28, Beck Depression Inventory and Ego function Assessment Scale were used. The result revealed that depressive group showed greater impairment in ego functions (9 out of 12 EFs) than the normals and diabetics.

Basu et al. (1999) studied ego functions and their relationship to psychopathologies (psychoticism, anxiety and depression). The sample consisted of 60 normal subjects and 60 patients with paranoid schizophrenia, 60 patients with generalized anxiety disorder and 60 patients with dysthymic disorder (each group consisted of 30 male and 30 female subjects. Each subject was administered Bengali adaptation of Ego Function Assessment Scale (Modified), Eysenck Personality Questionnaire, Beck Depression Inventory, State-Trait Anxiety Inventory (State Anxiety Only). Normal subjects were screened by Bengali adaptation of General Health Questionnaire-28. Correlation Coefficients were determined to find out relationships between separate ego functions and indices of psychopathologies. Result indicated that the various ego functions were associated with the severity of psychopathologies. The nature of these associations, however, differed as a function of the psychological group studied.

Basu et al. (2000) tried to analyze the factor structure of the EFA(M) so that some of its functions might be grouped together. EFA(M) was administered to a clinical sample of 60 patients with schizophrenia (paranoid type), 60 patients with generalized anxiety
disorder, 60 patients with dysthymic disorder. Each group consisted of 30 males and 30 females. The scores were initially subjected to principal components analysis. Only those factors with an eigen value of more than 1.00 were further subjected to normal varimax rotation. Three factors had emerged. These three factors were ‘adequacy of everyday functioning’, ‘physical intrapersonal and interpersonal reality orientation’ and ‘flexibility and self confidence’. These three factors as three independent dimensions of the scale represent the individuals global functioning in terms of regular activities, adherence to reality and the feeling of free and competent life style.

Basu et al. (2002) studied the relationship of ego functions in three clinical groups and normal. The sample consisted of 60 normal subjects, 60 paranoid schizophrenia patients, 60 patients with generalized anxiety disorder, 60 patients with dysthymic disorder (each group comprised of 30 males and 30 females). Result suggested that various ego functions differ among normal and three clinical groups studied. Normal subjects were better in most ego function than clinical group. Profile of impairments of ego functions was different in clinical groups and normal subjects. However the nature of differences is not unidirectional.

Basu et al. (2004) explored the role 12 ego functions in relation to stressful life events and three indices of psychopathology, viz., Psychoticism, Anxiety and Depression among 60 Bengali adult patients suffering from paranoid schizophrenia. Adapted version of Bellak’s Ego Function Assessment-M, Eysenck’s Personality Questionnaire, Beck Depression Inventory and the State-Trait Anxiety Inventory were administered to them. Stepwise Multiple Regression Analyses indicated that OR was associated with all three indices. Scores on RT correlated with those on psychoticism, stressful life events and scores on TP with anxiety, and stressful life events, SR and Scores on DF with depression. Hierarchical Multiple Regression Analyses indicated that OR also moderated between stressful life events and anxiety.

Basu et al. (2005) in a confirmatory factor analytic study mentions three cluster of ego functions to represent three important categories of psychological dysfunctions, viz., Schizophrenia (paranoid type), Generalized Anxiety Disorder and Dysthymic disorder.
Factor 1, relating to the 'adequacy of everyday functioning' include the ego functions DC, TP, DF, SB, and AF. Factor-2 relating to 'physical, intra-personal and interpersonal reality orientation' include the ego functions RT, JD, SR and OR. Factor 3 relating to 'flexibility and self confidence' includes AR, SF and MC.

The above discussion suggests the importance of ego functions and its role in development of psychopathology of various disorders. However the specific ego profile responsible for specific psychopathology formation is not clearly emerging out from the review. In this backdrop the present study aims to assess the ego function profile if any in formation of suicidal behaviour.

2.2.2.3 Ego functions and depression

A study conducted by Akkerman et al. (1992) was aimed to determine whether patterns of ego defence change with short term treatment of psychiatric illness. The subjects were 37 inpatients and outpatients with Major Depressive Disorder, being treated using standard clinical methods. Ego defences before and 7 to 9 weeks after commencement of treatment were measured using a shortened version of the Defence Style Questionnaire. There was a significant decline in the use of immature defences with symptomatic recovery, but no change in neurotic or mature defences. Patients with additional axis I diagnosis and/or abnormal personality traits used more neurotic defences than their counterparts with major depression alone, but this pattern did not change with time.

Basu & Chakraborty (1996) examined the ego functions of destitute women in comparison to a depressed and normal control group. The sample comprised of 100 homeless women, residing in shelter, 50 were diagnosed as suffering from major depression and 50 normal controls. Ego Function Assessment Scale (modified) by Bellak (1989) was given. Results indicated that normal controls had significantly better ego functioning in all domains. The destitute women had a lower judgment, but somewhat higher flexibility than the normal group.

Fukunishi et al. (1996) examined the association of scores on ego strength with the scores on a measure of alexithymia and with depressive symptoms in two samples of 260
college students and 92 psychiatric outpatients. In both samples scores on alexithymia were significantly correlated with those for depressive symptoms, however, correlations became non significant when scores for ego strength were controlled for. The results suggest that the association between alexithymic scores and depressive symptoms is decreased by scores of ego strength.

Basu et al. (1997) examined the relationship of stress and ego functions in experienced depression. The sample made up of 60 normals and 60 depressed subjects aged between 19-40 years. They were administered Presumptive Stressful Life Events Scale, Bengali adaptation of Ego Function Assessment Scale and Bengali adaptation of Beck Depression Inventory. Results suggested that though the amount of total presumptive stress had consequential effect on depression, the combined effect of total presumptive stress and some specific ego functions like OR, TP, AR, DF, MC and SF played an important role in determining overall psychopathology of depression. It was observed that only DF has a moderator status and is found significant in the normal. Probably in the normal, the defensive system is strong enough to prohibit the upsurge of depression.

Huseini (1997) compared depressive symptomatology and correlates of depression in 600 white and 600 black elderly people over a period of 18 months. Overall, factors associated with depression were found to be similar in both groups. Along with prior depression, social and medical stressors, social network, poor ego were found to be factors associated with depression.

The above review suggests that poor ego functions are associated with subsequent development of depression. But the interaction of ego and depression in development of psychopathology of suicidal behaviour is not highlighted clearly from the above studies.

2.2.3.4 Cognitive styles and attempted suicide

Cognitive style has long been implicated as a risk factor for suicidal behaviour. It is the typical way people search for, acquire or interpret information's in order to make decision and solve problems. Cognitive style has been described as a predictable pattern of behaviour within a range of individual variability (Cornett, 1983); a way of responding
to and using stimuli in a learning environment (Claxton & Ralston, 1978); a preference for processing information and learning (Dunn & Dunn, 1978); the way individuals organize experiences (Kolb, 1984) and expression of psychological differentiation within characteristic modes of information processing (Witkin & Goodenough, 1981).

Blackburn et al. (1986) found the relation between a negative cognitive style and vulnerability towards depression. He made a comparative study between depressed patients with anxious patients, recovered depressed and anxious patients and normal control group using a revised version of CST. He also used three severities of illness scales (the Beck Depression Inventory, the Hamilton Rating Scale for Depression and the State version of the State-Trait Anxiety Inventory) and three well established cognitive scales (the Automatic Thought Questionnaire, the Hopelessness Scale and the Dysfunctional Attitude Scale). Depressed patients were differentiated from normal on all subscales of CST and the three other cognitive scales. They were similarly differentiated from recovered depressed patients except for negative interpretations regarding the self when age was co-varied. Anxious patients were significantly differentiated from depressed patients on total level of negative thinking, negative interpretations of unpleasant events and negative thinking relating to the world when age was co-varied.

Parry & Brewin (1988) found that in some cases negative cognitive style may act to increase the risk for depression even in the absence of stressful life events. Data were taken from a general population survey on 193 mothers, where reliable case identification procedure and life events interviews were used apart from measures of attributional style and self esteem.

Wagner et al. (2000), studied on if there is any change in cognitive factors of attributional style, hopelessness and self esteem when suicidal ideation fades. Subjects were 50 individuals with suicidal ideation and 50 without suicidal ideation aged 7-17 years. Result showed cognitive style becomes more positive and hopelessness disappears with time from admission to discharge. There was no significant difference between children and adolescents in the pattern of results.
Sheehy & O' Connor (2002) researched on cognitive style and suicidal behaviour. They also tried to find out whether there are any implications for therapeutic intervention. They stated that though there is no evidence that specific cognitive disposition leads people for suicide, but there are indications that suicide is related with constricted cognitive style. This leads to poor problem solving ability and poor information processing that can be addressed in therapeutic context.

Mazure & Maciejewski (2003) studied the risk factors for depression and the possible interaction between cognitive style and stressful event type. Their sample consisted of 70 female patients with major depression. The result shows that cognitive style characterized by a high need for relatedness and concern about disapproval is a stable risk factor for depression.

Timbremont et al. (2006) conducted a longitudinal study on 93 children and 69 adolescents and investigated the relation between a negative cognitive triad and depressive symptoms in youth. Result shows that a negative cognitive triad comes as a consequence rather than a predictor of depressive symptoms after 1 year. Result showed depressive symptoms in youth produces changes in cognitive style which acts as a risk factor for developing depressive symptoms in future.

Guha et al. (2006) studied the difference of cognitive style among attempted suicides and non attempters. Sample consists of 20 attempters (10 male and 10 female) and 20 non attempters. They were given Cognitive Style Test and Adult Suicidal Ideation Questionnaire. Result suggested that attempters had a constricted cognitive style over the non attempters.

Guha (2009) studied efficacy of Cognitive Behaviour Therapy in 60 attempted suicide patients divided into two groups - Treatment as usual (TAU) (receiving medicine only) and patients having combined therapy [(medicine and Cognitive Behaviour Therapy (CBT)]. Ego Function Assessment Scale (Modified), Cognitive style Test, Beck Depression Inventory, Beck's Hopelessness Scale and Adult Suicidal Ideation Questionnaire were administered. Result revealed that CBT is an effective technique in
dealing with attempted suicide patients. Combining CBT with pharmacotherapy, yields a better result than medication alone in reducing errors is thought process and making the person more apt in dealing with stressors.

The above review suggests important role of cognitive style in depression. But very few have addressed what type of cognitive style is responsible for formation of psychopathology of suicidal behaviour. This provides the platform for the present study to explore cognitive style and its joint impact with ego functions to develop suicidal ideations.

2.2.2.5 Depression & suicide

It is widely accepted that depression constitutes a major risk factor for development of psychopathology of suicidal behaviour, though depression is not the only sufficient condition for suicide attempt. The fact that majority of the depressed people do not engage in suicidal behaviour, and that far from all suicide ideators and attempters have a depressive disorder (Ahrens & Linden, 1996), underscores the need for a research on specific suicidal elements in depression. Some studies relating to depression and suicide are reviewed in this section.

Minkoff et al. (1973) studied 68 consecutive suicide attempters admitted to Philadelphia General Hospital over a period of six months (37 male and 31 female patients) aged 14-63 years. Apart from detailed interview BDI, Generalized Expectancies Scale and Suicidal Intent Scale were given. Results revealed highly significant positive correlation between level of hopelessness and seriousness of suicidal intent. A significant positive correlation between depression and suicidal intent was also found.

Beck et al. (1990) in a prospective study of 1958 outpatients found that hopelessness, as measured by Beck Hopelessness Scale was significantly related to eventual suicide. A scale cut off score of 9 or above identified 16 (94.2 %) of the 17 patients who eventually committed suicide. The high risk group identified by this cut off score was 11 times more likely to commit suicide than the rest of the outpatients.
Burges (1991) studied self injury in 27 subjects with Borderline Personality Disorder (BPD), 17 subjects with major depression and 20 subjects with chronic Paranoid Schizophrenia. Subjects were rated according to acute depression, chronic depression, self injurious behaviours (SIBs), and neuro-cognitive deficits as measure by cognitive function examination, BPD patients showed more SIBs and more chronic depressive symptoms than the major depression or schizophrenic group. Self injury was not significantly correlated with acute or chronic depression. But self injury was correlated with neurocognitive deficits in borderline and schizophrenic groups which can be explained by psychotic thought process.

Dankberg (1991) studied the degree of cognitive distortions in thought process and level of depression in bulimic patients. Thirty bulimic women aged between 18-50 years were interviewed. Apart from demographic questionnaire, the General Cognitive Error Questionnaire and the BDI were administered. Result showed significant relationship between the degree of cognitive distortions and the level of depression in the subjects.

Robbins & Tanck (1992) investigated perceived stress, coping techniques and scores on the Beck Depression Inventory (BDI) for 84 undergraduate students. Using BDI scores as the dependent variable, analyses showed significant effect of stress and 3 of 7 coping techniques assessed: escape, dysfunctional behaviour and use of the professional health care system. Some additional analyses indicate that coping techniques emphasizing ego protective attitudes (e.g., remaining hopeful, not getting down on oneself) were negatively related to BDI scores.

In a retrospective analysis of 533 patients (343 female and 190 male; mean age 38.1 years), the effects of sex and co-morbid anxiety on suicidal ideation were assessed by logistic regression and analysis of variance (Schaffer et al., 2000). The rate of lifetime anxiety disorders was 43.2%, somewhat higher in females than in males. Suicidal ideation was noted in 63% of patients with a lifetime anxiety disorder as compared with 53.8% of those with no lifetime anxiety disorder. These factors are found to be independent of each other and of the severity of depression.
Chung et al. (2006) studied suicidal ideation and suicidal attempts in Chinese population. Multivariate modelling showed that about 40% of suicidal ideation and attempts was attributable to depression and about 20% was attributable to hopelessness.

The above review points out the role of depression, hopelessness and suicidal ideation in suicide. It also points out that cognitive distortions, dysfunctional attitudes and inadequate coping techniques are responsible for suicidal behaviour. However apart from the above mentioned factors there are other variables like personality that interact with depression and hopelessness in formation of psychopathology of suicidal behaviour. The present study attempts to address the interrelationship between these key factors of suicidal behaviour in Indian context.

2.3 Suicidal ideation in normal population

A study of suicidal ideation among so called normal population has yielded interesting relationship between depression and suicidal thoughts.

Paykel et al. (1974) in an interview study of 720 subjects constituting 15% population of the catchment area of New Haven, Connecticut find that 8.9% complained of suicidal ideation which correlated significantly with mental disturbance specially depression. Besozzi (1972) found that 555 of the 421 colleges and University students in Switzerland felt that their life had no meaning and those that considered suicides seriously were 18%.

In Finland, Holmstorm (1972) observed that 35% of 272 University students had experienced suicidal thoughts. Lonnqvist et al. (1980) found about 125 in the normal subjects expressing suicidal ideation.

To summarize, it may be said that reliable information on attempted suicide are conflicting and sometimes unavailable due to lack of reporting. Finding of past studies, though appear to be ambiguous on the role of factors contributory to the suicidal ideation, a group of factors emerge, which are likely to be associated with this area. Findings of past studies have identified various risk factors as marker for suicidal behaviour. Several studies show the role of depression in attempted suicide. The result
revealed that depression and hopelessness contributes as major factors of suicidal psychopathology (Minkoff et al., 1973; Chung et al., 2006). Studies on cognitive styles signifies that negative and constricted cognitive style is related to depression (Blackburn et al., 1986; Sheehy & O’ Connor, 2002). Suicide is associated with a constriction in cognitive style that leads to decrease in problem solving and negative interpretation of the environment. Studies also revealed that cognitive style is a risk factor for both depression and suicide. The role of adverse life events, as a risk factor for attempted suicide is conflicting. Majority of the studies in this context highlighted the role of adverse stressful Life Events as the precipitating factors for attempted suicide (Dohrenwend & Egri, 1981; Paykel, 1982; Roy-Byrne et al., 1986) though few of the studies have not found positive relationship between them (Eisler & Polack, 1971; Goldberg & Comstock, 1976; Radhakrishnan et al., 1984).

Series of studies on ego functions related to development of various psychiatric illnesses can be found (Akerman et al., 1992; Conte et al., 1991; Conte et al., 1995; Sohlberg & Norring, 1989). However, interaction of stress with personality is yet not clear enough in the context of development of psychopathology of attempted suicide and needs further explorations. The studies available on ‘attempted suicide’ group in terms of ego functions are really handful (Borst & Noam, 1993; Pfeffer et al., 1995) and hence non conclusive. Moreover in Indian context such types of studies are very few in number (Dhar & Basu, 2006; Guha et al., 2009).

The review also suggests that in spite of strong theoretical construct, works on role of ego functions in development of psychopathology of suicidal behaviour are inadequate and non conclusive. Especially in adult Indian population such type of studies are surprisingly very few in number. In the present study considering ego functions as underlying personality variable, comparisons were made between a group of attempted suicide subjects and normal subjects. The similarities and the differences between these two groups were evaluated in terms of ego function organizations, specific cognitive styles, experienced number of stressful life events in last one year and depression as well. At the same time attempts have been made to explore the relative contribution of ego function, cognitive styles, number of stressful life events, and depression in attempted suicide.