**Discussion**

The present research study was mainly undertaken to explain the emotion health connection in terms of emotion related beliefs and negative affect. However, before explaining the emotion–mental health connection, attempt was made to explore the link between emotional processing deficit (a construct that summarizes many of the emotional constructs studied in relation to mental health) and mental health as well as how and to what extent the emotion related beliefs and negative affect are related with the relatively less explored construct of emotional processing deficit.

In general the findings revealed that emotional processing deficit and its various domains (indicators) are associated with overall poor mental health and symptoms of such mental health problems as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. All the domains of emotional processing deficit though, contribute to different degree in predicting mental health problems of various types, certain indicators of emotional processing deficit (viz., impoverished emotional experiences, signs of unprocessed emotions and unregulated emotions) are relatively more important than others in predicting mental health problems of various types. The said findings may be considered significant addition to the existing literature as it is most probably the first study of its kind that demonstrates that emotional processing deficit is associated with psychometrically measured mental health problems in a non-clinical group. Further, it also demonstrates that certain types of emotional processing deficit are relatively more important in predicting the overall mental health as well as specific symptom clusters such as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism.

Findings of the present study also suggest that the mental health of an individual is also influenced by other emotional factors such as the level of negative affect and beliefs about emotional experience, expression and its regulation in addition to emotional processing deficit. However, some of the said emotional factors exert direct as well as indirect effect (through other emotional factors) on mental health (e.g., emotion related beliefs and emotional processing deficits) whereas others (e.g., negative affect) have only a direct effect on mental health.

As far as understanding of the psychological dynamics underlying emotional processing deficit is concerned, the findings brings to fore that beliefs about emotions and
emotional outcomes have important bearing. The present findings suggest that the beliefs about negative outcomes or non-malleable nature of the outcomes related to emotional experience and/or expression (e.g., a belief that experience or expression of negative emotions will not be accepted or will be considered a sign of weakness) may enhance the emotional processing deficits. On the other hand, the belief about positive emotional outcomes or malleable nature of the outcomes [e.g., a belief in one’s confidence to regulate negative mood when faced with adversities (strong negative mood regulation expectancies) or a belief that experience or expression of negative emotions will be accepted by others or will not be considered as weakness (acceptability belief about emotion)] is associated with lower levels of emotional processing deficit.

Another significant contribution of the present research (that has also applied implications for health psychologists) is the identification of cognitive – affective pathways leading to enhanced (or reduced) negative affect that has been found to be a significant contributor to impaired mental health (Hu & Gruber, 2008; De Gucht, Fischler, & Heiser, 2004). The findings suggest that poor emotional processing (or use of deficient emotional processing style) leads to greater negative affect and beliefs about negative emotional outcomes may lead to greater emotional processing deficit as well as negative affect. Thus, any intervention approach that focuses on modifying the causal mechanisms underlying negative affectivity (e.g., restructuring the negative emotional outcome beliefs or enhancing the ability to process emotions) would be more beneficial and will help to promote mental health in comparison to strategies directly focuses on reducing the negative affect itself. Unlike the earlier researches that have focussed on the factors that mediate the effect of negative affect on mental health [such as focusing more attention on symptoms of illness and negative aspects of life, scanning and vigilance etc. (Affleck, Tennen, Urrows, & Higgins, 1992; Watson & Pennebaker, 1989)], the present study has focused on the antecedents of negative affect and therefore understanding of the potential causal mechanisms involved in enhancement of negative affect may be of great help in reducing and managing wide spectrum of negative affective experiences (e.g., anxiety, worries, stress, irritability etc.) and as a result will help to gain better health.

The most important and innovative contribution of the present study is the observation that various emotional factors interplay with each other in a specific pattern and the ultimate effect of emotional factors on mental health is determined by the nature of interplay among emotional factors. Present findings revealed that emotion related beliefs as
an antecedent factor determines the level of emotional processing deficit and the extent of emotional processing deficit determines the level of negative affect and this type of interplay among the said three emotion related variables determine the overall impact of emotions (especially emotion related beliefs, emotional processing deficit, and negative affect) on the mental health status of an individual. Unlike the previous studies which demonstrated the relationship of some of the said emotional factors with mental health in isolation of the others, the present study brings to fore the overall impact of all the said three emotional factors on mental health. This is considered important as all the emotional factors coexist at given point of time in the same individual and mutually influence each other and therefore the actual impact of these emotional factors will be apparent only when they are studied in relations to each other.

Overall, the findings of the present study provide further support to the emotion – health connection and brigs to fore the potential cognitive-affective mechanisms [that includes (beliefs (cognitive) about emotions, and negative affect] to explain this connection (particularly the emotional processing and health relationship). Apart from this the present findings also presents evidence that how and to what extent the various emotional factors (particularly emotional processing deficit, emotion related beliefs and negative affect) are related with each other and mental health. By demonstrating the role of emotional processing deficit and emotion related beliefs in explaining individual differences in mental health, the present study also makes significant addition to the existing literature on emotion – health connection. Further, it provides insight into the mechanisms that lead to greater negative affect which has been widely acknowledged as an important risk factor for impaired mental health (Hu & Gruber, 2008).

This chapter discusses the aforesaid and other major findings of the present research in the light of the existing empirical evidences and theories. Since the study is largely exploratory in nature, the findings related to the role of emotional factors (viz., emotional processing deficit, emotion related beliefs, and negative affect) in understanding mental has been presented and discussed first followed by the discussion of findings related to interconnectedness of the said emotional constructs. The third major section of this chapter focuses on discussion of the findings related to the interplay of the said emotional constructs in determining mental health. The chapter concludes with presentation of the major conclusions, significance and implications of the present research followed by discussing the limitations of the study and future directions for research.
5.1 Emotion – mental health connection: Role of emotional processing deficit, emotion related beliefs and negative affect in understanding mental health

Emotion – health connection though has been well-established, the present study extends this knowledge by demonstrating that a deficit in emotional processing (that may be evident in several ways e.g., signs of unprocessed emotions, unregulated emotions, impoverished emotional experience, avoidance or suppression of emotions) and/or a strong belief about negative emotional outcomes or poor belief about positive emotional outcomes are associated with poor mental health as indicated by greater reporting of symptoms of a variety of mental health problems. In addition to it, the findings also provide further support to the well-established negative affect – mental health connection and extend the understanding of this connection by uncovering the affective mechanisms underlying negative affect. The present section presents the major findings related to the role of emotional processing deficit, emotion related beliefs, and negative affect in understanding the individual differences in mental health problems (or mental ill-health). As mentioned earlier in different chapters of this thesis, a negative definition of mental health has been used in the present undertaking and thus better mental health is assumed to be reflected in relative absence of symptoms of mental health problems (or mental ill-health). On the other hand, poor mental health will reflect itself in greater symptoms of mental health problems. Thus, it is likely that the term ‘mental health problems’ would appear more frequently in this chapter and the use of adjectives ‘better’ or ‘fewer’ with this term will be indicative of mental health whereas the use of adjectives ‘poor’ or ‘greater’ with it will be indicate of mental ill-health.

The earlier theorizations (Baker et al., 2004) and preliminary empirical evidences (Baker et al. 2007; Dubey, Mishra & Pandey, 2013b) that emotional processing deficit will lead to poor mental health is corroborated by the findings of the present study that emotional processing deficit (and its various domains) is related with greater mental health problems (or mental ill-health).

The said findings of the present study suggest that individuals having difficulties or deficits in processing of emotions or who use a deficient style of processing emotions are likely to have poor mental health as reflected by greater reporting of symptoms of mental health problems such as anxiety, depression, somatization, phobic anxiety, paranoid ideation etc.. As far as the role of various indicators of emotional processing deficits in
predicting mental health is concerned, the correlational findings suggest that more or less all the domains of emotional processing deficit are associated with greater symptoms of various types of mental health problems. However, the findings of stepwise multiple regression analysis brings to fore the fact that impoverished emotional experiences, signs of unprocessed emotions and unregulated emotions (the three indicators of emotional processing deficit) play relatively greater role in determining mental health of an individual as compared to others.

The aforesaid three domains of emotional processing deficits (viz., impoverished emotional experiences, signs of unprocessed emotions and unregulated emotions) were found to be important in predicting most domains of mental health problems to varied degree. For certain mental health conditions (such as, somatization, anxiety, interpersonal sensitivity, phobic anxiety and psychoticism) impoverished emotional experiences was found to be the most important contributor whereas for other mental health conditions (e.g., obsessive-compulsive, interpersonal sensitivity, depression and paranoid ideation), signs of unprocessed emotions and unregulated emotions were found to be the most important contributor. However, for predicting the level of hostility the ‘avoidance’ emerged as the second best predictor after unregulated emotions and contrary to the findings of correlation analysis it was found to reduce the level of hostility (as indicated by negative beta) rather than increasing it (as indicated by its positive correlation with hostility).

The relative significance of the aforesaid three domains of emotional processing deficit (viz., impoverished emotional experiences, signs of unprocessed emotions and unregulated emotions) in predicting mental health is further substantiated by the findings of another set of multiple regression analyses that was done to examine the role of various emotional processing deficits in predicting the overall mental health as indicated by the composite mental health indices of the SCL-90-R viz. positive symptom total, positive symptom distress index and global severity index.

The observation that emotional processing deficit impairs the mental health is not a new observation as some earlier studies have demonstrated a higher level of emotional processing deficit in individuals suffering from various mental disorders such as panic disorder (Baker et al., 2000), depression (Teasdale, 1999), post-traumatic stress disorder (Baker et al. 2013), and chronic low back pain (Esteves et al., 2013). Similarly, greater
emotional processing deficit has been reported in a mixed group of psychiatric patients compared to normal control group (Baker et al., 2007).

Thus, the findings of the present study supports the earlier theorizations and observations that inability to successfully process emotions (emotional processing deficit) leads to greater mental distress as well as the development of mental health problems (Baker et al., 2007). Baker et al. (2010) have argued that emotions lie at the interface between physical and psychological processes and therefore, impaired emotional processing may be associated with both psychological factors and physical conditions such as chronic low back pain.

What is new or significant addition made by the present study to the existing literature linking emotional processing deficit with mental health conditions is the observation that 1) the link between emotional processing deficit and various types of mental health problems exist in a non-clinical sample also, and 2) certain specific kinds or types of emotional processing deficits (viz., suppression, unregulated emotions, signs of unprocessed emotions, impoverished emotional experiences and avoidance) are relatively more important than others in explaining the observed individual differences in mental health problems.

The present observation that higher level of emotional processing deficit is associated with psychometrically measured mental health problems (of various types) in a non-clinical population has significant theoretical and practical implications. The observation that normal variations in mental health is also linked with emotional processing deficit implies that emotional processing deficit may serve as a risk or vulnerability factor and thus assessment of emotional processing deficit may help to identify individuals at risk for developing symptoms of mental illness. Further, it has also implications for prevention of mental disorders inasmuch as individuals identified having emotional processing deficit (over a critical level) may be provided necessary psychological and therapeutic aid to effectively process emotions and thereby reducing the likelihood of occurrence of mental disorders in future. However, for the said practical applications future research is needed to establish the cut-off score (or level) of emotional processing deficit that is associated with likelihood of developing mental health problems in future.
Another significant addition made by the present study to the existing literature dealing with the relationship of emotional processing with mental health problems is the observation that three indicators of emotional processing deficit (viz., impoverished emotional experiences, unregulated emotions and signs of unprocessed emotions) are relatively more important in explaining the observed individual differences in mental health. Further, out of the said three indicators of emotional processing deficit, the impoverished emotional experiences is the most important as it was found to explain greater amount of the observed variance in mental health as compared to the other two. Very little attention has been given to explore the relative significance of various types of emotional processing deficit, in predicting mental health. For instance, the present researcher could find only one empirical study that has tried to explore the relative significance of various indicators of emotional processing deficit in predicting episodes of panic attack. Baker and associates (2000) observed that three emotional processing dimensions distinguished the panic from the control groups: greater control of emotional experiences (‘smothering’ or ‘bottling up’ emotions), greater awareness of feelings and more difficulties in labelling emotions. In the light of paucity of evidences, the present observation that certain types of emotional processing deficits are relatively more important than others may be considered a significant addition to the existing literature.

The direct empirical evidences demonstrating the relative significance of impoverished emotional experiences, unregulated emotions, and signs of unprocessed emotions in explaining individual differences in mental health status of an individual are though lacking, indirect empirical evidences do exist that have examined the role of constructs similar to the said three domains of emotional processing deficit in understanding mental health. For instance, alexithymia (particularly its two domains – difficulty in identifying and describing emotions) may be equated to ‘impoverished emotional experience’ and abundant empirical evidences are available which demonstrate that alexithymia is associated with a variety of mental health problems such as depression and anxiety (Burba, Oswald, Grigaliunien, Neverauskiene, Jankuviene & Chue, 2006) somatoform disorder (Bankier, Aigner, & Bach, 2001), substance abuse (Lindsay & Ciarrochi, 2009), post-traumatic stress disorder (Chahraoui, Besche, & Lacassagne, 2001;), sexual perversion (Wise, Osborne, Strand, Fagan, & Schmidt, 2002), anorexia nervosa (Bourke, Taylor, Parker, & Bagby, 1992), bulimia nervosa (Degroot, Rodin, & Olmsted, 1995) and other psychological distress symptoms (Saarijärvi, Salminen, & Toikka, 2001).
Similarly, the unregulated emotions can be equated with difficulty in emotional control as well emotional regulation and a bulk of empirical evidences suggest that difficulty in emotional regulation (or emotional dysregulation) is associated with a wide range of mental health conditions such as depression (Garnefski, Teerds, Kraaji, Leggerstee, & Kommer, 2004) and anxiety (Cisler et al., 2010).

The signs of unprocessed emotions may be considered a blend of emotional intrusion in daily life (reflected in such items of EPS as “Thinking about same emotion again and again”, “Unwanted feelings kept intruding”) and higher negative affect intensity (reflected in such items as “Overwhelmed by emotions”). Thus, the observed role of ‘signs of unprocessed emotions’ in explaining mental health variations can be indirectly supported by such empirical evidences that demonstrates the role of emotional intrusion and/or affect intensity in mental health. In fact, a number of studies are available that demonstrate that greater affect intensity is associated with various forms of clinical mental health conditions such as depression (Flett et al., 1996) post-traumatic stress disorder (Tull et al., 2007) and panic attacks (Vujanovic et al., 2006). Further, there are also some studies which demonstrate that affect intensity is associated with psychometrically measured symptoms of a variety of mental health problems (Lee & Guajardo, 2011; Lynch et al., 2004; Salovey, Detweiler, Steward, & Bedell, 2001; Silk, Steinberg, & Scheffield-Morris, 2003).

A very specific observation of the present study that needs special attention is the fact that the ‘purified’ form of the avoidance (i.e., that component of avoidance which is free or independent of other domains of emotional processing deficit) is associated with better mental health (as indicated by fewer symptoms of mental health problems) whereas the non-purified (i.e., without controlling the effect of other domains of EPD) form of it correlated poor mental health as indicated by greater symptoms of mental health problems.

This observation has significant theoretical implications for understanding emotion–health connection. The finding implies that purified form of avoidance (pure avoidance of negative emotions) is likely to result in lower report of mental health problems or mental distress which is congruent with well-established concept of ‘neurotic paradox’ that suggest that individuals with mental distress and neurotic symptoms often avoid situations and stimuli that leads to negative emotions and/or mental distress and this results in temporary relief from symptoms. The resultant temporary relief from symptoms further
reinforce the avoidance of emotional situation and reduces the likelihood of facing the emotional situation that is required for adequate processing of emotional situation and reduction of mental distress (see Coleman, 1979). However, as avoidance reduces the likelihood of exposure to emotion provoking situations it proves to be maladaptive emotional processing strategy that ultimately leads to poor mental health and aids to the maintenance of symptoms of mental health problems. This mental health impairing effect of avoidance is evident from the observation of the present findings of significant bivariate correlation between avoidance and poor mental health. The aforesaid theoretical speculation has received a wealth of empirical and clinical support during the last few decades.

During the past few decades a wealth of empirical evidences and clinical observations have been accumulated which demonstrate that to reduce mental distress and symptoms of such mental health problems as anxiety, phobia, obsessive – compulsive disorder, post-traumatic stress disorder etc. exposure to emotional situations specific to the given disorder is required. For instance, several clinical studies have demonstrated that the exposure therapy can successfully treat phobias (Marks, 1988), unresolved grief (Ramsay, 1977), obsessive compulsive disorder (Foa, Steketee, & Grayson, 1985; Marks, Hodgson, & Rachman, 1975), alcohol and drug abuse (Blakey & Baker, 1980), panic attacks (Baker, 2011) and post traumatic stress disorder (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Rothbaum, Meadows, Resick, & Foy, 2000). Similarly, there is a wealth of studies showing exposure therapy to be effective in the treatment of post traumatic stress disorder (Foa et al., 1999; Foa, Rothbaum, Riggs, & Murdock, 1991; Hagenaars, van Minnen, & Hoogduin, 2010; Keane, Fairbanks, Caddell, & Zimering, 1989; Paunovic & Öst, 2001; Richards, Lovell, & Marks, 1994; Zayfert & Becker, 2007).

In the light of the aforesaid clinical and empirical evidences that demonstrate the effectiveness of exposure to emotional situations/stimuli in reduction of symptoms of mental health problems, the findings of the present study related to the link of avoidance and mental health problems can be better explained. In the light of the aforesaid clinical/empirical evidences the present observation related to impact of emotional avoidance on mental health implies that though emotional avoidance may provide temporary relief from the symptoms of mental health problems, in long run it will impair the mental health. In other words, the present findings coupled with earlier observations of health benefit exposure to emotional situations imply that the tendency to avoid emotional
exposure impairs mental health whereas presenting oneself to emotional situations and facing them (i.e., exposure to emotions) improves the mental health.

Apart from demonstrating the significant role of emotional processing deficit (and its domains) in determining the mental health status of an individual, the findings of the present study also brings to fore the role played by various types of emotion related beliefs. The present study investigated the role of beliefs about emotional experiences and expression that represents two types of beliefs – the acceptability beliefs about emotions and non-acceptability beliefs about emotions. The former refers to a belief that experience and/or expression of negative emotions will be approved or accepted by others and/or will not be considered as a sign of weakness whereas the latter refers to the opposite i.e., the experience and/or expression of emotions will not be accepted by others and/or will be considered as sign of weakness. Apart from the beliefs about experience and expression of negative emotions, the belief about one’s ability to regulate negative mood in face of adversities (assessed in terms of negative mood regulation expectancies – NMR expectancies) was also examined in relation to mental health. Here it is worth mentioning that the said three beliefs about emotions have been jointly referred to as emotion related beliefs in the present thesis.

The findings revealed a negative correlation of acceptability belief about emotions and NMR expectancies with symptoms of mental health problems and this pattern of correlation suggests that the belief that expression of negative emotions will be accepted and one would be able to regulate the negative mood is associated with reduced likelihood of development and/or reporting of symptoms of mental health problems. On the other hand, the non-acceptability beliefs (belief that expression of negative emotions would not be accepted by others) was found to be positively correlated with measure of mental ill-health and thus suggest that such emotional belief is associated with increased likelihood of developing various types of mental health problems.

As far as the relative significance of the said three types of emotion related beliefs, The NMR expectancies emerged as the best predictor of all the domains of mental health and was found to be the single predictor of all the domains and global indices of mental health except anxiety, psychoticism and positive symptom total. Further, these domains of mental health non-acceptability belief was also found to contribute as the second best predictor
and the acceptability belief emerged as the third best predictor of one of the global indices of mental health viz., positive symptom total.

Overall, the findings brings to fore the notion that mental health status of an individual is also influenced by the type of belief held by the concerned person about experience, expression, and regulation of emotions. The findings imply that the belief about the positive aspects of or positive outcomes about emotions (e.g., acceptability belief - a belief that negative emotional experience/expression will be accepted or will not be considered a sign of weakness, or NMR expectancies - the belief in one’s confidence or ability to regulate negative mood) is associated with fewer symptoms of mental health problems (or better mental health). However, if the belief about emotional experience/expression is associated with negative aspects or outcomes (e.g., the non-acceptability beliefs – a belief that experience/expression of negative emotions will not be accepted or will be considered a sign of weakness) then it is likely to lead to poor mental health as indicated by elevated scores on the measure of symptomatic complaints of mental ill-health. Further, the findings also highlight that among the said three types of emotion related beliefs, the NMR expectancies (the belief in one’s confidence or ability to regulate negative mood) is relatively more important than others in explaining the individual differences in mental health.

The earlier studies relating acceptability and non-acceptability beliefs about emotions are though scant, some indirect empirical evidences do partially support the present observation that non-acceptability belief about emotional experience/expression is associated with mental and/or physical health problems (Ali et al., 2000; Clark & Wells, 1995; Corstorphine, 2006; Cramer, Gallant & Langlois, 2005; Jack, 1991; Linehan, 1993; Woolfolk & Allen, 2007). The only direct evidence relating the present measure of beliefs about emotion with a psychosomatic health condition (viz., chronic fatigue syndrome) is that of Rimes and Chalder (2010) who observed that if individuals with chronic fatigue syndrome held a very strong belief that experience or expression of negative emotions would not be accepted by others or would be considered as an indicator of weakness. However, there are a number of indirect empirical evidences which suggest that belief about unacceptability of negative emotional experience or expression is associated with a wide range of psychosomatic and or mental health conditions including chronic fatigue syndrome (Surawy, Hackmann, Hawton & Sharpe, 1995) irritable bowel syndrome (Ali et al., 2000), somatization disorder (Woolfolk & Allen, 2007), eating disorders (Corstorphine,
social phobia (Clark & Wells, 1995) depression (Jack, 1991), posttraumatic stress disorder (Cramer, Gallant & Langlois, 2005), and borderline personality disorder (Linehan, 1993). It has been suggested that such beliefs are more likely to develop in individuals of difficulties or negative feelings was met with a lack of sympathy or punishment (Surawy, Hackmann, Hawton, & Sharpe, 1995; Linehan, 1993).

The observation that non-acceptability belief about emotions may lead to various types of mental health or psychosomatic problems is also supported by a cognitive – behavioural model of chronic fatigue syndrome which suggests that negative beliefs about consequences of not meeting high standards may be a vulnerability factor for developing persistent and severe fatigue in the context of increased stress and/or illness (Surawy, Hackmann, Hawton, & Sharpe, 1995). This observation may be considered a better theoretical support to the present observation as the beliefs proposed in the said model resemble some items in the present measure used to assess the beliefs about emotional expression.

As far as the role of negative mood regulation expectancies in explaining individual differences in mental health is concerned the present findings suggest that poor expectancies (or belief) about regulating negative mood is associated with greater mental health problems whereas the greater expectancies or belief in one’s confidence to regulate negative mood is associated with better mental health (or fewer symptoms of mental health problems). This observation of the present study is corroborated by the findings of a number of earlier empirical studies which demonstrated its role in explaining dysphoria (Kirsch, Mearns, & Catanzaro, 1990), depression (Mearns, 1991), anxiety sensitivity and emotional distress (Catanzaro, 1993) substance abuse (Hayes et al., 2004), generalized anxiety disorder (Mennin, Heimberg, Turk, & Fresco, 2002), complex post-traumatic stress disorder (Cloitre, 1998), and borderline personality disorder (Linehan, 1993).

The aforesaid earlier empirical evidences, however, are limited to examining the role NMR expectancies in limited clinical mental health conditions. Thus, the findings of the present study extend the said earlier empirical observations by demonstrating the role of NMR expectancies in a wide range of psychometrically assessed mental health problems viz., somatization, obsessive- compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism.
Further, as the present study was conducted on a non-clinical sample, the findings have significant implications for using NMR expectancies as a risk marker of developing clinical mental health problems in future. For instance, an individual having lower or poor NMR expectancies (in comparison to a given cut-off level) may be considered to be more likely to develop symptoms of mental health problems. However, for such use of the measure of NMR expectancies future research would be needed to establish cut-off scores using both clinical and non-clinical samples.

To sum up, the findings related to role of emotion related beliefs in understanding mental health problems suggest that a belief about negative aspect or outcomes of emotional experience/expression is associated with greater symptoms of mental health problems whereas the belief about positive aspects or outcomes of negative emotional experience/expression or its probable regulation is associated with better mental health (or fewer symptoms of mental health problems).

The said effect of emotion related beliefs on mental health can be explained in terms of entity and incremental theories of implicit beliefs (see DeCastella et al., 2013). The incremental theorists believe in a potential for change while people holding entity beliefs typically believe in the fixed, unchanging nature of emotions or emotional outcomes. From this perspective, the acceptability/non-acceptability beliefs may be considered as entity beliefs as research indicates that people holding entity beliefs often make global positive and negative trait judgments about people based on their actions and are also more likely to blame or condemn these personal qualities when they or others encounter setbacks (Chiu et al., 1997; Gervey, Chiu, Hong, & Dweck, 1999). Thus, the belief that experience or expression of emotions are either acceptable (a global positive judgement of the given trait) or non-acceptable (a global negative judgement or evaluation of the trait concerned) suggest that such beliefs are considered as fixed or non-malleable (i.e. entity beliefs). On the other hand, the NMR expectancies (a belief in one’s confidence or ability to regulate or change negative mood) may be considered incremental belief or a belief of malleable nature.

Researches indicate that entity beliefs are often associated with negative outcomes including mental health problems. For instance it has been noted that as the entity theorists believe their weaknesses cannot be improved, they have been found vulnerable to disengagement and helplessness (Hong, Chiu, Dweck, Lin, & Wan, 1999; Ommundsen,
Haugen, & Lund, 2005; Rhodewalt, 1994), poorer coping strategies under stress (Doron, Stephan, Boiche, & Le Scanff, 2009), reduced self-esteem (Rhodewalt, 1994), and more negative affect over time (Robins & Pals, 2002; Tamir et al., 2007). All the said negative outcomes (e.g. use of poor coping strategies, greater negative affect) have been found to be linked with poor mental health (e.g., Costa & McCrae, 1980; Hu & Gruber, 2008; Aldwin, & Revenson, 1987; Taylor & Stanton, 2007).

In the context of implicit beliefs about emotions, researchers have found that individuals holding entity beliefs about emotions reported fewer positive and more negative emotional experiences as well as increased feelings of depression, loneliness, and isolation from their peers (Tamir et al., 2007). Other recent research with undergraduates has also linked different kinds of beliefs about emotions (e.g., as overwhelming, shameful, and damaging) with clinical indications of anxiety and depression (Manser, Cooper, & Trefusis, 2012). The findings of a recent study (DeCastella et al., 2013) also indicated that the more people endorsed entity beliefs about emotions, the less likely they were to use reappraisal in daily life. Entity beliefs about emotions were also associated with decreased well-being (reduced self-esteem and satisfaction with life) and increased psychological distress and depression.

The aforesaid empirical evidences suggest that entity beliefs about emotions (a belief about fixed nature of the outcomes e.g., acceptability or unacceptability of emotional experience and expression) are associated with poor mental health and various health compromising factors such as poor coping and negative affect. Contrary to it, the incremental belief about emotions (a belief that emotional outcomes, such as negative mood, can be changed) is likely to be associated with better mental health. Thus, the present finding that non-acceptability belief is associated with poor mental health whereas acceptability belief and greater NMR expectancies are associated with better mental health appears to be theoretically congruent with the entity and incremental theories of implicit beliefs.

The relationship between negative affect and mental health has though been well established (see review by Pandey & Choubey, 2010), the present study also re-examined this relationship as the negative affect in the present study has been hypothesized as a potential mediator variable between the relationship of emotional processing deficit and mental health as well as between emotion related beliefs and mental health. The findings
revealed that higher negative affect was associated with greater symptoms of various types of mental health problems as well as overall poor mental health as indicated by global indices of mental health. As the relationship of negative affect with mental health was not the major objective of the present research and also as this relationship has already been well discussed in the literature (e.g., Costa & McCrae, 1980; Dubey, Mishra & Pandey, 2010), these findings have not been discussed here.

To conclude, the findings of the present study and the preceding discussion of it brings to fore the potential contribution of emotional processing deficit, emotion related beliefs and negative affect in explaining the observed individual differences in mental health. However, the psychological mechanisms through which the emotional processing deficit and/or emotion related beliefs bring changes in the mental health status are not yet clear. In the context of emotional beliefs this gap has been noted by others also. For instance, DeCastella and associates (2013) noted this gap and argued, “Although these findings highlight the importance of various emotion beliefs, what is not yet clear is why beliefs about emotions have these affective and social correlates. Despite a great deal of research on implicit beliefs in social and educational psychology (Blackwell et al., 2007; Chiu, Hong, et al., 1997; Hong et al., 1999; see Dweck, 1999, for a review), very little is known about how various types of implicit beliefs might be related more broadly to clinical symptoms and psychological health.” (p. 498). They further noted, “One possibility is that implicit beliefs about emotions are linked with key emotion regulation tendencies. In particular, implicit beliefs may be one factor that explains individual differences in the use of adaptive emotion regulation strategies like reappraisal. When people believe that emotions cannot readily be controlled, they may be less inclined to use intentional cognitive strategies (like reappraisal) to regulate their emotions in daily life.” (p. 498).

The aforesaid theorization and speculation of DeCastella and colleagues (2013), points to the possibility that emotional processing (or its deficit) may be a potential variable to explain the link of emotion related beliefs with mental health inasmuch as emotion regulation forms an important component of emotional processing. In fact, the present study explored this possibility and provides some preliminary evidence about the potential role of emotional processing deficit in explaining the relationship of emotion related beliefs with mental health. The findings related to it has been presented and discussed in the section next to the following section.
The interrelation of emotion related beliefs, emotional processing deficit, and negative affect

The present study hypothesizes that the individual differences in mental health may be better explained if the interplay of various emotions related construct is examined in relation to mental health. This theoretical speculation has been tested using structural equation modelling (SEM) approach and the obtained findings has been presented and discussed in the next section. However, to test the said theoretical formulation it is necessary to explore the interconnectedness of the various emotional constructs under investigation. Further, such exploration is not only a statistical prerequisite for SEM based analysis but it is also required because of the existing gap in the literature about the nature of relationship among the emotional constructs under study (viz., emotional processing deficit, emotion related beliefs, and negative affect). Accordingly, the present research also explored the inter-relationship of the said emotional constructs. More specifically the relationship of emotional processing deficit with negative affect was examined in addition to the relationship between emotion related beliefs and emotional processing deficit as well as the relationship between emotions related beliefs and negative affect. This observed findings related to said objectives have been presented and discussed in this section.

The various conceptual models of emotional processing (Baker et al., 2001, 2004, 2007; Rachman, 1980) have explicitly theorized that failure to process emotions may result in such negative affective states as anxiety, panic, depression etc. The present findings that emotional processing deficit (and its various domains) are correlated with greater negative affect suggests that a deficit or difficulty in processing emotions is associated with greater negative affect provide empirical support to the said theorization. Several empirical studies though have demonstrated that emotional processing deficit is associated with such clinical conditions as depression (Bathla & Sinha, 2010; Teasdale, 1999) and panic attack (Baker et al., 2000) which are characterized by negative affective experiences, direct empirical test of the link between emotional processing deficit and negative affect is a striking gap. Thus, the present empirical observation that deficit in processing emotions is associated with greater negative affect is a significant addition to the existing literature.

Further, the findings of the present study also advances the knowledge about the link between emotional processing deficit and negative affect by demonstrating that certain types of deficient emotional processing style or indicators of emotional processing deficit are relatively more important than others in predicting negative affect. The findings
revealed that ‘impoverished emotional experiences’ domain of emotional processing deficit is a major contributor to the negative affect (as it explained around 26 percent of the total variance), whereas the contribution of the other four domains of emotional processing deficit in negative affect was though statistically significant, the magnitude of their contribution was relatively small (explained variances ranged from 0.8 to 3.6 percent). Thus, it can be concluded that though more or less all the five domains of emotional processing deficits (examined in present study) contribute to the observed individual differences, the impoverished emotional experiences makes the largest contribution in it.

The observation that impoverished emotional experiences explain a larger portion of the observed variance in the negative affect is also supported by earlier indirect empirical evidences that report the role of alexithymia in negative affect. As mentioned earlier that alexithymia, particularly the difficulty in identifying and describing emotions, is to some extent similar to the ‘impoverished emotional experience’ domain of emotional processing deficit. For example a number of studies demonstrate that alexithymia is associated with greater negative affect (see Dubey, Mishra & Pandey, 2010 for a review). Further, some studies have also indicated that the affective component of alexithymia (i.e., difficulty in identifying and describing emotions) make more important contribution in explaining the individual differences in negative affect (Dubey & Pandey, 2013). The latter empirical evidences provide a stronger support to the present observation that impoverished emotional experience is associated with enhanced negative affect.

Similarly, the clinical observations and studies examining the psychotherapeutic effect of improved emotional processing on mental distress and/or clinical conditions marked by negative affect also provide indirect support to the notion that impairment in emotional processing would lead to enhanced negative affect (Auszra & Greenberg, 2007; Baker, 2001). For instance, it has been noted by the researchers that improved emotional processing (achieved through psychotherapeutic support) has been highly successful in reducing emotional distress (Whelton, 2004).

One important finding of the multiple regression analysis regarding the role of various domains of emotional processing deficit in predicting negative affect is that though the four dimensions of emotional processing deficit (viz., impoverished emotional experiences, signs of unprocessed emotions, unregulated emotions and suppression) is associated with enhanced level of negative affect the ‘avoidance’ domain of emotional
processing deficit appears to reduce the negative affect, particularly when the elements of other domains of emotional processing deficit are controlled from it. This observation is contradictory to the findings of bivariate correlation between avoidance and negative affect that was found to be positive suggesting that greater avoidance is associated with greater negative affect. The reversal of direction of the effect of avoidance in multiple regression analysis suggests the presence of suppression effect (see Cohen, Cohen, West, & Aiken, 2013).

Thus the aforesaid observation suggests that the real nature of relationship between avoidance and negative affect remains hidden or suppressed when the variance shared by other domains of emotional processing deficit (viz., impoverished emotional experience, signs of unprocessed emotions, and unregulated emotions) is not controlled from it (i.e. in bivariate correlation analysis). However, its real nature of relationship with negative affect becomes manifest when the elements of avoidance that are common to the said three domains of emotional processing deficit is controlled from it. In other words, the real nature of relationship of avoidance with negative affect becomes visible when the purified form of avoidance (i.e., the component of avoidance orthogonal to impoverished emotional experience, signs of unprocessed emotions, and unregulated emotions) is correlated with negative affect.

The observed negative affect reducing effect of avoidance can be explained on the same basis as it was done while explaining its effect on mental health (in the preceding section). In the preceding section (while explaining the dual nature of the effect of avoidance on mental health) it was argued (citing suitable empirical evidences and clinical observations) that though avoidance helps to reduce the negative affect temporarily, in long run it will lead to enhanced negative affect and symptoms of mental health problems. There are some studies to support the said speculation. For instance, though some empirical evidences are available to suggest potential short-term benefits of experiential avoidance (Wegner & Gold, 1995), the majority of studies examining the effects of experiential avoidance on subsequent negative affect found that avoidance backfires by increasing negative affect, especially in nonclinical samples (Shallcross et al., 2010, Study 1; see also Eifert & Heffner, 2003; Feldner, Zvolensky, Eifert, & Spira, 2003; Levitt, Brown, Orsillo, & Barlow, 2004).
Taken together, the findings suggest that while the four domains of emotional processing deficit (viz., impoverished emotional experience, signs of unprocessed emotions, and unregulated emotions) enhances the negative affect, the avoidance domain helps to reduce it. This observation is very similar to the present finding related to the effect of avoidance on mental health where avoidance was found to reduce the symptoms of hostility. This observation provide further support to the notion that pure avoidance (avoidance devoid of other types of emotional processing deficit) helps to reduce (at least temporarily) the level of negative affect and mental distress arising from symptoms of mental health problems.

The nature of relationship of emotion related beliefs with emotional processing deficit as well as negative affect was also examined in the present study and the findings indicate that the confidence or belief about one’s ability to regulate negative mood (i.e., higher score on NMR expectancies) and the acceptability beliefs (i.e., belief that expressing the negative emotions will be accepted by others) is associated with lower level of emotional processing deficit as well as negative affect. This observation implies that such beliefs about emotions reduce the likelihood of emotional processing deficit and help to reduce negative affect. On the other hand, the belief that expression of negative emotions will not be accepted by others (i.e., non-acceptability beliefs about emotions) is associated with greater emotional processing deficits (reflected particularly in terms of unprocessed emotions, unregulated emotions and impoverished emotional experiences) as well as negative affect.

As far as the relative significance of various emotion related beliefs in predicting various types of emotional processing deficit and negative affect is concerned, the findings revealed that NMR expectancy emerged as the best predictor of emotional processing deficit and it’s all domains (except avoidance) as well as of negative affect. The avoidance was best predicted by the acceptability beliefs about emotions that was found to be the second best predictor of other domains of emotional processing deficits viz., signs of unprocessed emotions, unregulated emotions, impoverished emotional experiences and the overall emotional processing deficit. The non-acceptability beliefs emerged as the third best predictor of various domains of emotional processing deficits.

The aforesaid findings suggest that more or less all the three emotion related beliefs (viz., acceptability beliefs about emotions, non-acceptability beliefs about emotions and
negative mood regulation expectancies) make some contribution in predicting various domains of emotional processing deficit as well as negative affect, the belief in one’s ability to change or regulate negative mood (strong NMR expectancies) is relatively more important than acceptability belief about emotions which in turn is more important than non-acceptability beliefs about emotions in explaining the individual differences in emotional processing deficit and negative affect. As far as the nature of contribution of the said three domains in various domains of emotional processing deficit or negative affect is concerned, the findings revealed that acceptability beliefs about emotions and NMR expectancies reduces the emotional processing deficit as well as negative affect whereas the non-acceptability beliefs about emotions enhances the same.

A careful observation of the aforesaid pattern of findings revels that beliefs related to positive emotional outcomes (e.g. acceptability of negative emotion experience/expression and ability to regulate negative mood) is associated better emotional processing (reflected by lower level of emotional processing deficit) whereas the emotional beliefs related to negative outcomes (e.g., non-acceptability belief about emotion) is associated with greater emotional processing deficit as well as negative affect.

The direct empirical test of the effect of the various emotion related beliefs on emotional processing deficit and negative affect is though scant, indirect empirical evidences provide some support to the notion that beliefs about emotions and their expected consequences do have impact on the subsequent emotional processing and emotional outcomes (e.g. negative affect). For example, researchers have noted that children's beliefs about emotion and their expected consequences of emotion expression influence the likelihood that children will either express or suppress their emotions (Fuchs & Thelen, 1988; Shipman & Zeman, 2001) and inhibition of emotions has been found to be associated with internalizing symptoms (Zeman, Shipman & Suveg, 2002) and to have a negative impact on social adjustment (Gross & Levenson, 1997). These empirical observations provide indirect support to the present finding that emotion related beliefs is associated with emotional processing deficit inasmuch as suppression of emotion is considered one important component of emotional processing deficit.

The studies conducted in the light of implicit belief theories (entity and incremental theories) also provide indirect support to the present observation that certain emotional beliefs (especially beliefs about negative emotional outcomes or fixed/non-malleable
nature of emotions) do impair emotional processing and enhance negative emotional experiences. For instance, Tamir and colleagues (2007) examined the relation between implicit belief theories and affective outcomes over time. Before the beginning of college, students reported their implicit theories of emotion (incremental – belief about malleable nature vs. entity- belief about fixed nature) as well as their emotion regulation self-efficacy, and throughout the first year in college, their emotional experiences. They observed that the more that students who endorsed an entity theory of emotion at the beginning of college were found to have lower emotion regulation self-efficacy, greater negative emotional experiences throughout the first year, have more depressive symptoms, and lower level of well-being at the end of the year. These findings suggest that individual who believe about negative emotional outcomes are likely to have more negative affective experience and poor ability to process emotions (as indicated by lower emotion regulation self-efficacy).

Similarly, it has also been observed by several researchers that avoiding negative affect (an important component of emotional processing deficit) is associated with poor affective outcomes over time (Plumb, Orsillo, & Luterek, 2004; Shahar & Herr, 2011; Shallcross, Troy, Boland, & Mauss, 2010). For instance, the tendency to avoid negative affect-measured before a negative life event-predicts greater psychological distress after the negative life event as well as the subsequent development of depressive symptoms (Shahar & Herr, 2011; Shallcross et al., 2010, Study 2). Such confidence beliefs in turn have been linked not only to experiential avoidance, but also to negative evaluations of unpleasant affect (Barlow, Allen, & Choate, 2004; Catanzaro & Mearns, 1990; Lazarus, 1991).

5.3 The interplay of emotional factors in relation to mental health

The findings of the present study (discussed in the preceding two sections) suggest that emotional processing deficit is associated with poor mental health (or greater symptoms of mental health problems) and also leads to greater negative affect. Further, it is also evident that certain emotion related beliefs are also associated with greater emotional processing deficit as well as negative affect. Further, it is well documented and also observed in the present study that negative affect is associated with poor mental health. Given the said pattern of interrelations among the various emotional constructs and their relationship with mental health, it can be speculated that the various emotional constructs examined in the present research would interact (interrelate) with each other in a particular manner to determine the individual differences in mental health. The said speculation has
also been tested in the present study and the obtained findings have been discussed in this section.

The preceding findings of the present study though suggest that all the three emotion related constructs viz., emotion related beliefs, emotional processing deficit, and negative affect are interrelated and they also correlate with mental health, the direction of relationship among the emotional construct is not well known. Thus examination of the interplay of the said emotional constructs in relation to mental health is largely exploratory in nature. However, based on some earlier researches, a base structural relationship model was developed, tested, modified and retested till the best fit model was obtained.

The initial or base model hypothesized that emotion related beliefs (particularly beliefs about experience/expression of negative emotions and/or belief/expectancy about regulating negative emotions) may be an important determinant of emotional processing deficit and other emotional outcomes including negative affect. Though, direct empirical evidences for the said speculation are lacking, the said directionality in the link of emotion related beliefs and emotional processing was based on the social learning theories which suggest that human behaviour is a function of the subjective hypotheses, expectations, or beliefs held by the individuals (Bandura, 1977; Rotter, 1954, 1982). Further, as the emotional processing models developed in cognitive – behavioural traditions hypothesize that reduction of negative or symptomatic emotional reactions to distressing events is the result of successful emotional processing (Baker et al. 20101, 2004, 2007; Goldfried, 2003; Rachman, 1980), the present study considered emotional processing deficit as the determinant of negative affect. And it is well documented that negative affect leads to poor mental health (Costa & McCrae, 1980; Dubey, Mishra & Pandey, 2010) and thus the negative affect was given causal priority over mental health. Moreover, as the findings of the present study itself demonstrate that the said three emotional constructs (viz., emotion related beliefs, emotional processing deficit and negative affect) mental health status of an individual, these emotional factors were hypothesized to have a direct effect on mental health. However, based on the hypothesized interdependence among the said emotional constructs, some emotional factors (particularly emotion related beliefs and emotional processing deficit) were assumed to have also an indirect effect on mental health.

Based on the said preliminary empirical evidences, an affective model of mental health was specified (and tested using SEM) in which all the three emotion related beliefs
(that were allowed to correlate with each other) were hypothesized to influence emotional processing deficit as well as negative affect and mental health. Further, in this model the emotional processing deficit was hypothesized to influence negative affect and mental health whereas the negative affect was linked to mental health only through a direct path. However, the test of this model indicated that some of the paths in this model were not significant and thus these paths were removed and the revised model was again tested and was found to be a good fit. The test of statistical significance of various direct and indirect paths of this model revealed that mental health of an individual is influenced directly as well as indirectly by some emotional factors while others have either only a direct or indirect effect on it. The major findings (the direct and indirect effect of emotional factors on mental health) of this ‘affect based model’ of mental health has been summarized below.

As far as the direct effect of various emotional factors on mental health is concerned, the findings revealed that only emotional processing deficit, negative affect, and NMR expectancies have a significant direct effect on mental health. The NMR expectancies was found to have a beneficial direct effect on health (as indicated by negative coefficient) whereas the emotional processing deficit and negative affect were found to have detrimental direct effect on mental health as indicated by positive coefficients.

This observation is in congruence with the findings of correlation and regression analysis of the present study and is also supported by earlier research findings which demonstrated that poor mental health is associated with greater emotional processing deficit (Dubey, Mishra, & Pandey, 2013b) as well as negative affect (Dubey & Pandey, 2013) whereas the confidence or belief that one will be able to regulate negative mood is associated with better mental health (Rimes & Chalder, 2010).

As far as the direct effect of emotion related beliefs on other health related emotional factors is concerned the findings revealed that greater expectancies that one will regulate one’s negative mood is a direct emotional processing deficit and negative affect reducing effect. The non-acceptability belief was also found to have a direct effect on emotional processing deficit and negative affect, however, the direction of effect was reversed – it was found to significantly enhance the emotional processing deficit as well as negative affect. However, the acceptability belief was found to have a direct effect only on
emotional processing deficit and not on negative affect. This pattern of observed direct
effect suggests that all the three emotion related beliefs have a direct effect on emotional
processing whereas the negative affect is only directly influenced by NMR expectancies
and non-acceptability beliefs.

Apart from the said direct effect of emotional factors on mental health, some
emotional factors were also found to have significant indirect effect through other
emotional factors. More specifically the findings revealed that emotional processing deficit
also exerts an indirect yet significant effect on mental health via enhancing negative affect.
Further, all the three domains of emotion related beliefs (i.e., acceptability beliefs, non-
acceptability beliefs, and NMR expectancies) were found to have a significant indirect
effect on mental health via either emotional processing deficit or negative affect or both.
The only exception to this was the indirect effect of non-acceptability belief on mental
health via negative affect as the path coefficient associated with this indirect path was not
found to be statistically significant.

Overall, the observed pattern of significant direct and the indirect effects suggest
that though the mental health of an individual is directly influenced by emotional
processing deficit, negative affect, and NMR expectancies, the other emotion related
beliefs (viz., acceptability and non-acceptability beliefs about emotion expression)
indirectly influence the mental health status of an individual either by influencing the level
of experienced negative affect or the level of emotional processing deficit or both. More
specifically, the findings suggest that the higher level of negative affect and emotional
processing deficit directly impairs the mental health status of individual whereas the
expectancies or belief in one’s ability to regulate negative mood directly protects from
mental ill-health (as indicated by negative path coefficients). The beliefs about emotional
expression though does not appear to have any direct effect on mental health, it does
influence the mental health of an individual by altering the level of emotional processing
deficit and/or negative affect.

As far as the affective mechanism (or process) underlying mental health is
concerned, the findings suggest that non-acceptability beliefs enhances emotional
processing deficits which in turn enhances the negative affect and enhanced negative affect
in turn results in poor mental health. Further, the emotional processing deficit also directly
impairs the mental health as well as indirectly through enhancing negative affect. On the
other hand, certain positive emotional beliefs (viz. acceptability beliefs and NMR expectancies) provide indirect protection against the development of mental health problems (as indicated by negative indirect path coefficients). In other words, the acceptability beliefs and NMR expectancies indirectly protect the mental health of an individual by reducing emotional processing deficit and/or negative affect and the reduced negative affect in turn reduces the likelihood of developing symptoms of mental health problems or mental ill-health. However, such beliefs (except NMR expectancies) do not have any direct influence on or link with mental health.

The observed differential direct and/or indirect effect of various emotion related beliefs on mental health suggest that the direct or indirect effect of emotion related beliefs is dependent on subjective hypotheses or theories held by the individuals about the nature of emotions they experience. Researchers have noted that not all people view emotions as things that can be controlled (Tamir, John, Srivastava, & Gross, 2007). Some people believe that they cannot really change the emotions that they experience (entity theorists), whereas others believe that everyone can learn to control or regulate their emotions (incremental theorists). These beliefs about the controllability or malleability of particular attributes such as emotions are also referred to as “implicit theories” (see Dweck, 1999, for a review).

Reviewing the aforesaid findings of the present study in the context of ‘implicit theories’ about emotional belief, it is evident that an individual’s implicit incremental theory about emotions (i.e. emotions are malleable or one can change, control or regulate emotions) such as a belief that one can regulate negative mood (NMR expectancies) may directly influence one’s mental health as well as indirectly through influencing mental health related other emotional outcomes (e.g., emotional processing and negative affect).

On the other hand, viewing emotions from entity theorist’s perspective, individuals assume that the experience of emotion cannot be changed and they often make global positive (e.g. negative emotions will be accepted) and negative judgements (e.g., negative emotions will not be accepted). Accordingly, the acceptability and non-acceptability beliefs about emotions may be considered a belief maintained from the perspective of entity theorist. And the present findings suggest that such entity theorist view of emotions does not have a direct influence on mental health but it does indirectly influence one’s mental health status through either influencing emotional processing or negative affect.
The indirect effect of implicit entity belief on mental health through various emotion regulation strategies (that may be considered to reflect some domain of emotional processing) or negative emotional experience has been documented in the literature and may be considered indirect evidence or support for the present observation. For instance, the findings of recent study (DeCastella et al., 2013) indicated that the more people endorsed entity beliefs about emotions, the less likely they were able to use reappraisal in daily life and also report decreased well-being (reduced self-esteem and satisfaction with life) and increased psychological distress and depression. Based on this observation they concluded that implicit beliefs—particularly about one’s own emotions—may predispose an individual toward such emotion regulation strategies that have important consequences for psychological health. Similarly, the association of entity belief about emotions on mental health problems through negative emotional experiences has also been documented by some researchers (e.g., Tamir et al., 2007).

The aforesaid structural relationship model linking emotional factors to mental health brings to fore the potential of emotion related beliefs and expectancies in determining mental health of an individual. The findings clearly indicate that emotion related beliefs have a direct influence on emotional behaviour (emotional processing) and outcomes (e.g., negative affect) that have important consequences for mental health of an individual. However, the emotional consequence of the emotion related belief is dependent on the nature of belief held about emotional experience, expression and/or regulation. An incremental belief about emotions (e.g., NMR expectancies) has a beneficial effect on emotional behaviour and outcomes (e.g., reduction of emotional processing deficit and negative affect) whereas the entity beliefs about emotions have an opposite effect on emotional outcomes and behaviour. Further, the emotional processing deficit (that may be a consequence of certain type of emotion related belief) has not only a direct effect on mental health but also an indirect effect through negative affect.

The findings of the said structural relationship modelling are though encouraging and insightful in understanding the affective dynamics underlying mental health, it treats all the three emotion related beliefs as independent (yet related) observed variables. However, since the said beliefs are about negative emotions or mood, it was hypothesized from the beginning that they may represent a single second order construct ‘emotion related beliefs’. Further, it was also hypothesized that this latent second order emotion related beliefs may have different pattern of relationship with other emotional factors (viz.,
emotional processing deficit and negative affect) and mental health. The said speculations were tested by considering the said three emotion related beliefs as representing a latent second order factor and the interplay or interrelation of this latent emotion related beliefs in relation to mental health was modelled and tested. The hypothesized relationship among variables was kept same as with the first model with the only difference that a second order latent variable was used rather than three observed variables to represent emotion related beliefs. The said alternative model was not only found to be a good fit to the data but also a better fit than the above discussed first model.

The latent variable representing the three emotion related variables (in the alternative models) was labelled as ‘positive emotional outcomes belief’ as the acceptability belief and NMR expectancy loaded positively on it whereas the non-acceptability belief loaded negatively. This pattern of loading of the said three emotion related beliefs suggest that the ‘positive emotional outcome beliefs’ is characterized by greater NMR expectancies and acceptability belief about emotions and a lower level of non-acceptability belief. From the perspective of implicit theories of beliefs, the positive emotional outcome belief represents an incremental belief about emotions inasmuch as it represents a belief about the changeable or malleable nature of emotion or emotional experience.

The findings of this alternative affective model of mental health (in which a latent ‘positive emotional outcome beliefs’ has been studied in relation to other emotional factors and mental health) suggest that the positive emotional outcomes belief has a direct as well as indirect health protecting effect (either through reducing negative affect or reducing emotional processing deficit or both) whereas the emotional processing deficit has a direct health deteriorating effect in addition to its indirect health impairing effect through enhanced negative affect. This pattern of interplay of emotional factors underlying mental health suggest that positive emotional outcome beliefs ( i.e., the malleable or incremental belief about emotions) help to directly reduce emotional processing deficit and negative affect as well as it also indirectly reduces the negative affect via its emotional processing deficit reducing effect and this chain of emotional interplay brings important and beneficial change in health status of an individual.

The findings of the alternative affective model of mental health clearly imply that an incremental belief about emotions (i.e., a belief that one would be able to change or
regulate the negative emotional experiences or a belief that one’s negative emotional experiences would not be rejected by others rather will be accepted) have significant positive effect on mental health status of an individual. The mental health benefit of the malleable or incremental belief about emotions is brought through its direct effect as well as its indirect effect by reducing emotional processing deficit and/or negative affect. Thus, the negative affect appears to be a factor to bring direct changes in mental health status of an individual. However, the level of negative affect is likely to vary depending on the nature of emotional beliefs (belief about malleable versus fixed nature of emotions) and the extent of emotional processing deficit. The malleable beliefs about emotions (specifically the positive emotional outcome beliefs) reduces the level of negative emotional experiences both directly as well as indirectly through reducing the level of emotional processing deficit, and the resultant lower level of negative affect reduces the experienced symptoms of mental health problems and thereby improves one’s mental health or provides protection against mental ill-health.

To sum up, the findings of structural equation modelling (path analysis) suggest that emotion related beliefs are the antecedent factors for emotional processing deficit as well as negative emotional experiences. However, the negative emotional experience was found to be a direct consequent of the emotional processing deficit. Thus, in the relationship of emotional processing deficit and mental health, the various emotions related beliefs either individually or collectively as latent construct (positive emotional outcomes belief) appear to be a core antecedent factor leading to emotional processing deficit. On the other hand, the negative affect appears to be a consequent factor depending directly on both the level of emotional processing deficit as well emotion related beliefs. However, the final (total) impact of various emotional variables on mental health is determined by the direct and indirect effects of positive emotional outcome beliefs on mental health. In other words, the individual differences in mental health state of an individual are brought directly by the positive emotional outcome beliefs as well as its indirect effect through two affective chains or channel. It indirectly influences the mental health via negative affect reducing effect (the first chain) as well as through its emotional processing deficit reducing effect that in turn reduces the level of negative affect (the second chain).

As far as the emotional dynamics underlying mental health is concerned, the findings suggest that an emotion related belief of positive outcomes not only lowers the emotional processing deficit but also reduces the experienced negative affect and both of
them ultimately reduces the symptoms of mental health problems. On the other hand, the emotion related belief of negative outcomes (e.g., non-acceptability belief) leads to not only greater difficulty or deficit in processing emotions but also to greater negative affect and the enhanced emotional processing deficit and negative affect result in enhanced symptoms of mental health problems.

Thus, the said findings of the present study brings to fore an affective model of mental health in which the nature of interplay of emotional beliefs with emotional processing deficit and negative affect in determining mental health has been uncovered. The proposed affective model of mental health has been depicted below.

Figure 5.1 Affective model of mental health proposed on the basis of present findings
The proposed affective model of mental health (that has received empirical support from the finding of present study) assumes that a malleable belief about emotions i.e., the belief in positive outcomes about emotions (or emotional experience and expression) has direct effect on the emotional outcomes (emotional processing deficit and negative affect) as well as on mental health. However, the positive emotional outcome beliefs also have indirect effect on mental health. As evident from Figure 5.1, the positive emotional outcome beliefs indirectly influence mental health via two first order indirect effects and one second order indirect effect. The first order indirect effect of positive emotional outcome beliefs is brought through reducing the level of negative affect and at the same time reducing the emotional processing deficit. The second order indirect effect of positive emotional outcome beliefs is brought in two steps –first it reduces the emotional processing deficit which in turn reduces the level of negative affect and the reduced negative affect in turn reduces the mental health problems.

The aforesaid affective model of mental health proposed on the basis of the present research findings need to be validated in future research as direct empirical evidences to support such model is not available in the existing literature. However, as discussed earlier (in the preceding sections of this chapter) that some indirect empirical evidences do support the proposed notion that emotion related beliefs are the important determinants of various emotional behaviour and outcomes that may have direct or indirect bearing on mental health.

5.4 Conclusions

Based on the findings of the present study it can be concluded that mental health status of an individual is dependent upon the way they process emotions in their day to day life and their ability and style of emotional processing brings significant direct impact on their mental health as well as indirect impact through altering the level of negative affect. Further, the findings also brings to fore the fact that the nature of beliefs held by an individual determines whether one will be able to process the emotions or not and whether the style of processing emotions would have a beneficial or deteriorating effect on mental health. More specifically, the findings suggest that if individuals believe that they will be able to regulate negative mood (higher NMR expectancies) and/or emotional experiences/expression would lead to positive consequences (e.g. acceptability of negative emotions) then such belief would not only directly improve the mental health but would
also improve mental health indirectly by reducing the negative mental health impact of poor emotional processing and negative affect. In the context of implicit theories of beliefs, the findings imply that the implicit belief about the malleable nature of emotions (e.g., belief about change in negative mood or positive outcomes of emotions) will bring beneficial mental health effect both directly as well as indirectly through reducing the emotional processing deficit and negative affect. On the other hand, the implicit belief about fixed or non-malleable nature of emotions or emotional outcomes (the entity belief e.g., non-acceptability of emotional experience and expression) brings mental health deteriorating effects both directly as well as indirectly by enhancing emotional processing deficit and negative affect.

The findings also provide support to the well-established notion that negative affect impairs mental health and extend this knowledge by demonstrating that the level of negative affect depends upon the nature of emotional beliefs (malleable or incremental belief versus fixed or entity belief) as well the ability and style of emotional processing. The malleability or incremental belief reduces the likelihood of emotional processing deficit as well negative emotional experiences whereas the fixed or entity belief enhances the same.

The findings also suggest that though emotion related beliefs, emotional processing deficit and negative affect has a direct effect on mental health status of an individual, the mental health of an individual is also indirectly influenced by emotion related beliefs through its impact on emotional processing deficit and negative affect.

In sum, the findings of the present study brings to fore the emotional or affective dynamics underlying mental health and suggest that the emotion – health connection can also be explained in terms of emotion related beliefs. In other words, it suggests that emotion related beliefs provide a ground to understand how the various emotional factors influence the mental health status of an individual.

5.5 Significance of the present study

The present research study was mainly undertaken to explain the emotion health connection in terms of emotion related beliefs and negative affect. The connection between emotions and health though has been well documented (e.g., see Pandey & Choubey, 2010), recent literature suggests that most of the attempts to explain the said
connection has been limited to the stress-coping framework of the Lazarus (1966) and there is a paucity of models to explain the emotion and health connection beyond this framework (Sundararajan, 2012). Further, taking this gap into account several researchers have argued a need to shift the focus from the stress-coping framework of explaining emotion – health connection and have theorized that the link between emotion and health can be better understood by integrating the role of belief in this link (Cromby, 2012; Sudararajan, 2012). Thus, the present attempt to explain the emotion health connection in terms of emotion related beliefs and negative affect is not only in accordance with recent recommendations and theorizations but it also addresses a major gap in the existing literature (i.e., explaining the emotion – health link in terms of emotion related beliefs).

Further, as discussed in the ‘review of literature’ chapter of this report, most of the emotional constructs studied in relation to health in general and mental health in particular are interrelated with each other and thus are likely to share a large amount of common variance and may be related to more broader emotion related construct underlying them. Recently, Baker and colleagues presented a model of ‘emotional processing’ and have demonstrated that many of the emotion related constructs studied in relation to mental health (e.g., alexithymia, emotion regulation, emotional intelligence, emotional control, emotional suppression, affect intensity etc.) may be summarized in the umbrella construct of ‘emotional processing’. However, the attempt to explore the role of emotional processing in understanding mental health problems is still in infancy and needs to be explored further. In this backdrop, the present attempt to explore the link between emotional processing deficit and mental health may be considered a timely attempt to address an important research need in understanding the emotional dynamics of mental health.

Apart from addressing the aforesaid gaps in the literature, the present study makes some important and significant additions to the existing literature on emotion – health connection. The findings of the present study brings to fore that emotional processing deficit (as reflected by impoverished emotional experiences, unregulated emotions, signs of unprocessed emotions etc.) or a deficient style of processing emotional processing is associated with psychometrically measured symptom clusters of mental health problems in a non-clinical sample. This observation highlights not only the significance of emotional processing deficit in explaining mental health problems but also suggests that a deficit in
processing emotions may form a vulnerability factor and thus its assessment can help to assess the future risk of developing clinical mental health conditions.

Another significant addition made by the present research is the finding that emotional processing deficit is likely to result from certain emotion related beliefs associated with higher likelihood negative emotional outcomes (e.g. non-acceptability beliefs) and/or lower likelihood of positive emotional outcomes (e.g., lower level of acceptability beliefs, lower NMRE (poor belief that one will be able to regulated negative mood). Further, the findings of the present study also demonstrates that greater emotional processing deficit and lower levels of belief about positive emotional outcomes lead to enhancement of negative affect which in turn results in impaired mental health. Thus, the findings of the present study provides a new insight into the affective dynamics of mental health and suggest that emotional processing deficit or use of a deficient style of emotional processing, though, may have direct effect on the mental health status of an individual, it also impairs mental health indirectly through enhancing the negative emotions. Further, the three emotion related beliefs (examined in the present study) though do not have a significant direct effect on mental health, it does influence the mental health status of an individual indirectly either through enhancing emotional processing deficit or negative emotional experiences or both. However, contrary to this notion, another finding of the present study (based on SEM) demonstrated that if all the said emotion related beliefs were summarized by a latent construct ‘belief about positive emotional outcomes’ then such belief has a significant direct effect on the mental health status of an individual as well as indirect effect either through emotional processing or negative affect or both.

Further, the findings of the present study empirically demonstrate that emotional processing deficit results in enhanced negative affect that is a significant addition to the existing knowledge. The various theoretical models of emotional processing (e.g., Rachman, 1980; Baker et al., 2001, 2004) though, have argued that enhanced negative affect is an indicator of deficient emotional processing and is likely to be a result of it, empirical test of this theoretical speculation was a striking gap. The present study not only demonstrates that emotional processing deficit is associated with greater negative affect but is also provides some empirical evidence that enhancement of the negative affect may be a direct consequence of emotional processing deficit. The said conclusion, however, is based on the findings of the SEM in which a causal link from emotional processing deficit to
negative affect resulted in good fit whereas the reverse was found to be associated with poor fit. Thus, future research should focus on experimentally verifying the said causality.

To sum up, the findings of the present study adds to the existing literature by demonstrating that emotional processing deficit is related with enhanced mental health problems in a non-clinical sample and that such emotional processing deficit may result from emotion related beliefs about high likelihood of negative emotional outcomes or low likelihood of positive emotional outcomes. Further, the emotional processing deficit may impair the mental health directly as well as indirectly through enhancement of negative affect.

Most importantly, the findings of the present study brings to fore the emotional or affective dynamics underlying mental health and presents an alternative to the stress-coping framework of Lazarus (1966) in understanding emotion – health connection.

5.6 Implications of the study

From the preceding discussion it is evident that the findings of the present study have not only made significant addition to the given field of knowledge but also have several theoretical and practical implications. This section highlights and discusses theoretical and practical implications of the present study.

The most important theoretical implication of the present study lies in its effort to bring the affective dynamics underlying mental health and explaining the emotion health connection. The findings provide significant insight into the mechanisms and processes through which emotion influences the mental health status of an individual. Unlike, the previous studies that have largely focused on exploring the mediating variables that explain the emotion – health connection, the present study focussed on the antecedent factors. Specifically the present study supported the negative affect – mental health connection and unlike the earlier researches it tried to explore the emotional factors that influence the level of negative affective experiences rather than focussing on the variables that explain how the effect of negative affect on mental health is mediated. This departure of the present study from the conventional theoretical framework of understanding a phenomenon in terms of mediational processes has brought significant insight into the potential causal mechanisms underlying (or preceding) negative affect that is considered an important determinant of mental health. The findings brings to fore that emotion related beliefs and
their nature determine the level of negative affect both directly as well as indirectly by influencing the level and nature of emotional processing.

Apart from providing a theoretical framework of understanding the affective dynamics of mental health, the findings of the present study has also some important practical or applied implications. First, the insight developed into the affective determinants of mental health can be used to develop an assessment approach for identifying future risk of developing mental health problems of clinical nature. The findings of the present study are based on a non-clinical sample and demonstrate that a deficit in emotional processing can explain the normal variations in the reported symptoms of various types of mental health problems. This finding implies that the self-report measure used to assess emotional processing deficit may be used as a measure to assess the future risk of developing mental health problems inasmuch as greater emotional processing deficit is associated with greater mental health problems in non-clinical population. However, for such application of the measure of emotional processing deficit future research would be required to assess and determine the cut-off scores to be used for diagnostic purpose.

The present observation that emotional processing deficit, negative affect and certain types of emotion related beliefs is associated with greater mental health problems suggest that such emotional factors predispose an individual to mental health problems. This observation, thus, has a practical implication for developing mental health prevention programmes. For instance, the assessment of level of emotional processing deficit and negative affect along with the nature of emotion related belief may provide significant information about the likelihood of developing mental health problems and this information may be used to target preventive programmes to such individuals to prevent them to develop future mental health problems.

The findings have also significant implications for developing psychological intervention packages to promote mental health. It is well established that negative affect significantly impairs the mental health and thus most of the popular psychological intervention programmes focus on enhancing positive affect so as to replace or reduce negative affect. Unlike, the said intervention programmes that target negative affect itself, the findings of the present study suggest the future intervention programmes should focus on such antecedents of negative affect as emotional processing deficit and emotion related
beliefs. More specifically, the psychotherapeutic implications of the present finding is that the intervention programme should focus on modifying the root cause of negative affect such as restructuring the entity beliefs about emotions or aiding an individual to successfully processing the negative emotions. Such interventions will not only help to reduce the negative affect and thereby reducing its ill effect on mental health but it would also help to promote mental health directly.

5.7 Limitations and future directions

The findings of the present study though are encouraging and contribute significantly to the existing literature; there are certain limitations that should be taken care of in the future research. A few such limitations of the present study have been presented below.

The findings of the present study though suggest that certain emotion related beliefs leads to poor emotional processing deficit which in turn enhances negative affect that in turn impairs the mental health of an individual. However, such causal links among the emotion related variables in relation to mental health is based on the findings of structural equation modelling (SEM) and it has been noted that SEM precludes inferences regarding the direction or temporal order of observed associations (see MacCallum, Wegener, Uchino, & Fabrigar, 1993). Though, the alternative models (in which the causal directions of the relationship among affect related variables were changed) were also tested in the present study and none of them were found to be a good fit to the data (see Appendix VII, VIII), this itself may not be considered sufficient evidence to establish causal relations. Thus, future research is needed to establish the causal link proposed in the present study using either an experimental approach or a longitudinal approach.

The present study was exploratory in nature and perhaps is the first attempt to examine the role of emotion related beliefs in understanding emotional processing deficit and its adverse mental health impact, thus only the psychometrically well validated self-report measures were used. However, to establish the validity of the findings and the inferences drawn, the future research should attempt to re-validate the findings using different other approaches of assessing the constructs under investigation. For instance, the implicit measures of emotion related beliefs, performance based measures of emotional
processing and event sampling approach to assess negative affect may be used along with self-report measures.

The present study focused on explaining the effect of emotional processing deficit on mental health and considered emotion related beliefs as antecedent to it and negative affect as its consequence. As a result the study remain limited to the said three affect related variables and it could not focus on other affective or non-affective variables that mediate the relationship of negative affect with mental health. Thus, future research may focus on extending the affective model proposed in the present research by including the mediator of negative affect – mental health relationship.

The present study was based on the Baker’s model and approach of assessing emotion processing that largely focuses on the various manifestations of emotional processing failure or deficits and difficulties in emotional processing. Further, the measure used in the present study assesses only five types of manifestations of emotional processing failure viz., suppression, unregulated emotions, signs of unprocessed emotions, impoverished emotional experiences and avoidance. However, the emotional processing may include several other aspects. The review of literature suggest that successful emotional processing is likely to involve a range of cognitive, behavioural, physiological and emotional processes such as exposure and habituation (Hunt, 1998; Rachman, 1980), appraisal and reappraisal (Lazarus, 1999), insight (Kuiken, Cary, & Nielsen, 1986), restructuring of cognitive and emotion schemas (Bucci, 1997a; Foa & Kozak, 1986), disclosure and catharsis (Bohart, 1980; Traue & Pennebaker, 1993). Thus, future research may focus on using indicators of successful emotional processing as well using other domains of emotional processing that is not represented in the Baker’s model.

While discussing the significance and implications of the present study it was highlighted that the measures of emotion related beliefs, emotional processing deficit and negative affect can be used to assess the future risk of developing mental health problems. However, this and other similar conclusions of the present study are limited (and rather would be premature) inasmuch as the present study was correlational in nature and limited to only non-clinical sample. So in order to extend such inferences and conclusions the future research should use either a cross-sectional design including both clinical and non-clinical sample or a longitudinal design.