Posttraumatic Growth (PTG) is described as a “positive psychological change resulting from a traumatic life event” (Tedeschi & Calhoun, 1996). When people face a traumatic event in life (life threatening illness, divorce, major accident or natural disaster), they usually describe positive changes in their beliefs, goals and priorities in their respective lives as a result of altering or re-adjusting their world views about their own lives. “Post traumatic growth is not a chosen fate but some choice in coping” (Janoff & Bulman, 1992). The concept Posttraumatic Growth was given in 1995 by Lawrence Calhoun, Ph.D. and Richard Tedeschi, Ph.D., both psychologists at the University of North Carolina, Charlotte.

2.1 The Dimensions of Post Traumatic Growth

The growth results as told by trauma survivors differ from person to person on the basis of how traumatic they perceive the stressor event. As posttraumatic growth is of a multidimensional nature, an individual may report more growth in one dimension and less in another dimensions.

Tedeschi and Calhoun, (1996) have given five major domains of post traumatic growth. They include – sense of new potential in life, loving and intimate family ties with friends, relatives and neighbours, positively modified feelings of strength, confidence about self; altered life’s philosophies and developed spiritual thinking.
In certain ways, posttraumatic growth gave mental health professionals the channel to communicate and put across their thoughts and ideas, thus realizing that something was concealed from the main picture i.e. trauma’s capability of renovating us in an affirmative manner. “Mental health professionals have a long history of looking only at what’s wrong with human functioning” says Anna Beradi, Ph.D. director psychologist at Trauma Response Institute, George Fox University, Portland. Beradi also discloses that when individuals are asked about how they feel when going through life’s struggles and complexities and then emerging as tougher, wiser and more benevolent individuals, the greater part of us would give a positive answer thus proving that human beings are believed to strengthen and develop as a result of facing adversities.

A growing body of research illustrates that gigantic ordeal and hardships when confronted present possibilities for experiencing profound and substantial lives. The thought behind posttraumatic growth is exactly opposing to the idea of posttraumatic stress disorder (PTSD), the frame through which trauma has been observed in the previous decades. PTSD was first recognized in 1980 and applied on veterans of Vietnam War, thus earning a place in the Diagnostic & Statistical Manual (DSM), diagnostic handbook for mental disorders.

Long before, PTSD was suggested after any type of traumatic event, be it terrorist attacks of 9/11 or Hotel Taj at Mumbai, natural disasters like earthquakes, tsunami, cyclones or mass shooting attacks. A psychiatrist’s word of caution that trauma victims would most probably begin reporting symptoms of PTSD – intense
flashbacks, high levels of depression and anxiety, irritability or hypervigilance thus becoming a favorite of the media coverage.

Antonovsky coined the term salutogenesis meaning “origin of health” as an alternative to pathogenic orientation to health which had been explored so far. The perspective of salutogenic theory is to consider health as an ease-disease continuum with progress towards health and well being. (Eriksson and Lindström, 2007). It is an alternative medicine belief that concentrates on factors strengthening the health concept rather than disease and illness view. The vital elements in the salutogenic model are firstly the course of direction that leads to physical well being and problem-solving philosophy; secondly, to utilize the available resources appropriately. Over the years, it has been seen that salutogenesis has become a recognized and well known concept in community health and well being (Mellem, 2008).

There have been numerous models or theories that have attempted to explain factors which contribute to personal growth or finding benefit. The basis, or theoretical underpinnings, for many of these theories stem from stress and coping research models (e.g., Lazarus & Folkman, 1984). Researchers have debated whether PTG is an outcome, process, or both, by using different theoretical models.

The most popular and well accepted growth following adversity outcome model comes from Tedeschi and Calhoun (1995, 1996, 2004; Calhoun & Tedeschi, 2006; Tedeschi, Park, & Calhoun, 1998). Researchers consistently refer to Tedeschi and Calhoun’s Posttraumatic Growth model as an outcome model. However, they acknowledge that PTG is also a process that takes place (Tedeschi, Shakespeare-Finch, & Friedman 2008; Tedeschi & Calhoun, 1996). Similar to other growth
models (e.g., Janoff-Bulman, 1992) they theorize that a traumatic event must be “seismic” or have the ability to shake or destroy one’s assumptive world. Emphasis in the PTG theory is placed on rumination, or cognitive engagement.

Tedeschi and Calhoun use Martin and Tesser’s (1996) definition of rumination in that repeated thinking, including reminiscing and problem solving, is not necessarily intrusive in trying to make sense of the event. In the immediate aftermath of the event, one’s beliefs and goals change and individuals attempt to manage emotional distress. Individuals participate in a ruminative process (e.g., cognitive engagement) that at first is mostly automatic and intrusive. As time progresses, rumination continues in an attempt to reduce emotional distress. New goals and assumptions about life are beginning to be processed. Later, growth takes place by active rumination, which is more deliberate. Schemas become challenged and one takes on a new life narrative. Additionally, PTG is viewed as a multidimensional construct that takes into account changes in life goals and beliefs, the development of life narratives, and enhancement of wisdom. In this model other variables such as personal resources, coping processes, and social support are believed to impact PTG.

Posttraumatic Growth has also been studied with resilience, emotion regulation, positive and negative emotion and cognitive reappraisal in 378 fresh medical cadets in the military training situation (Shi et al., 2015). In this research it was seen that PTG had significant positive correlations with resilience, inhibition adjustment, abreaction adjustment, positive emotion and cognitive reappraisal, but had negative correlation with negative emotion. All the influencing factors of this
study significantly predicted the level of PTG (53% of the total variance). Resilience’s role as a mediating variable was seen to be partial in nature, concerning this study.

Resilience and PTG both constructs support human health and well being. Levine et al. (2009) conducted a study on Israeli population, first on adolescents group who were exposed to terror and second on citizens and army personnel following second Lebanon war. The results confirmed an inverse relationship between resilience and posttraumatic growth.

Ho et al. (2011) have explained the phenomenon in oral cavity cancer patients to look into the role of hope and optimism on Posttraumatic Growth. A retrospective cross-sectional study on 50 successfully treated patients showed that both hope and optimism correlated positively with PTG and accounting together 25% variance of PTG. It was also seen that married patients in comparison to unmarried patients showed higher levels of PTG and hope. Thus, providing evidence to the fact that a dyad relationship plays a significant role in PTG and hope in an individual suffering from terminal illness like cancer.

Ai and Park (2005) gave a theoretical perspective on “Possibilities of the positive following violence and trauma” enlightening about the developing research in the upcoming decade. Their article describes 3 radical trends which will help gain better outlook on orientation of trauma victims and their mental health. The 3 progressive trends which they reviewed are as follows – positive psychological movement, recognition of the role of religion & spirituality in health and well being & stress-related growth. According to the researchers all three have significant implications for trauma and violence survivors.
Bellizzi and Blank (2006) conducted a cross-sectional study on 224 randomly selected breast cancer survivors to predict PTG in them. The study examined contextual disease-related and intra-individual predictors of PTG. A sequence of hierarchical regression analysis found that age at diagnosis, employment, education, marital status, active coping, perceived intensity of disease accounted for 34%, 35% and 28% variance in PTG, especially in subscales new possibilities, appreciation for life and growth in relationships with others.

2.2 Measurement of Posttraumatic Growth

The review of literature illustrates that posttraumatic growth can be measured by using Posttraumatic Growth Inventory (PTGI) originally given by Tedeschi & Calhoun (1996), used by numerous researchers like Shi et al. (2015), Levine et al. (2009), Ho et al. (2011) & Bellizzi & Blank (2006). Growth as a multidimensional concept can also be measured using other various scales such as Format Posttraumatic Growth Inventory given by Baker et al. (2008), Stress Related Growth Scale given by Park et al. (1996), Changes in Outlook Questionnaire given by Joseph et al. (2008), Thriving Scale given by Abraido-Lanza, Guier& Colon (1998) and Perceived Benefit Scale given by McMillen & Fisher (1998). The initial scale was later revised to 10 items by Cann et al. (2010) and finally a 5 item version by Garnefski et al. (2008) renamed as Personal Growth Scale (PGS). PTGI has been adapted in many languages for e.g. PTGI – Polish version (Oginska-Bulik & Juczynski 2010) used by Losiak & Nikiel (2014); PTGI – Hebrew version (Laufer & Solomon 2006) used by Levine et al. (2009), PTGI – Chinese version (Wang et al. 2011) used by Shi et al. (2015).
This section explores some earlier research, on the correlates of Posttraumatic Growth.

### 2.3 Posttraumatic Growth and Posttraumatic Distress

Trauma has both salutogenic and pathogenic effects on an individual. Three veins of thought that emerge about the relationship between growth and distress have been put forward by various researchers. First approach is that distress and growth are at opposite ends of the same range, in which both are correlated negatively (Frazier et al., 2001). Secondly, distress and growth are related in a positive manner (Solomon & Dekel, 2007; Pooley et al., 2012; Blix et al., 2013). Thirdly, distress and growth are independent entities showing no association between them (Joseph et al. 1993; Morris & Finch 2011). These confusing findings are majorly due to studies which are cross-sectional in nature rather than longitudinal where in growth and its correlates can be observed and understood in an appropriate manner.

Solomon and Dekel (2007) investigated posttraumatic stress disorder and posttraumatic growth in a sample of 103 Israeli ex-prisoners of war and a control group of 280 combat veterans of the 1973 Yom Kippur war. Results implied that distress co-exists with growth in a positive manner more the distress, more PTG will occur in an individual.

Park et al. (2008) have explained the phenomenon that different and independent path ways lead to posttraumatic growth and posttraumatic stress likewise. The researchers investigated the mediating role of coping and emotional reactions in 1004 U.S. adults almost six weeks after the 9/11 terrorist attacks on the
twin towers. Results indicated that posttraumatic growth and posttraumatic stress were moderately positively related to each other, though the pathways from emotions and coping to posttraumatic growth and posttraumatic stress were different. Posttraumatic growth was strongly positively linked with positive coping and anger, while the pathways of negative coping and depression were strongly associated with posttraumatic stress. Evaluations of both models give the impression that patterns of emotions and coping had independent pathways to posttraumatic growth and posttraumatic stress. Emotions played a dual role of being both motivators and outcome of coping strategies.

Kashdan and Kane (2011) emphasized on the associations between PTD and PTG with meaning in life, experiential avoidance being the moderator variables. The researchers carried out the study on 176 college going students who reported at least one traumatic event of their lives. Results suggested that individuals who rely heavily on experiential avoidance and PTD report lower levels of growth and meaning-making in their lives.

Groleau et al. (2013) recently explored the exclusive contribution of centrality of events in the occurrence of both PTD and PTG, as centrality of event is a relatively new concept in relation to PTD and PTG. Contradictory findings highlight the need of further research in this area, particularly with events perceived as central by the trauma victims.

In a similar vein Pooley et al. (2012) explained PTS & PTG with their relationship to coping and self-efficacy in the NW Australian Cyclone communities. This study was conducted on 512 individuals living in cyclone prone areas. Results
suggest that higher levels of PTS direct the way for more growth to occur. Also individuals experiencing PTG used more emotion focused coping and were less self efficient.

Dekel, Ein-Dor and Solomon (2012) conducted a longitudinal study on a sample of Israeli ex-prisoners of war over a time period of 17 years with assessment at 3 time points, specifically 1991 (T1), 2003 (T2) and 2008 (T3). Results showed that posttraumatic growth is facilitated and sustained by the presence rather than the absence of PTD.

Blix, Hansen, Birkeland, Nissen and Heir (2013) examined PTG in 197 ministerial employees who were at work during 2011 Oslo bombing incident. Results asserted the fact that higher the PTS symptoms, higher will be the PTG. Life satisfaction was also strongly linked with PTG.

Joseph et al. (1993) documented no significant relations with distress and found growth to be an independent outcome. Morris and Finch (2011) as well conducted a study on 313 diverse cancer survivors in which through SEM, PTG, PTD and rumination was investigated. Results reported that the variance explained by all the variables in PTG came out to be 30% and SEM suggested a model fit through SEM analysis. Intrusive and life purpose rumination with trauma severity correlated positively with distress while social support and deliberate rumination correlated positively with PTG. An interesting finding of this study was that distress showed no association with PTG, therefore giving us the idea that distress and PTG are two distinct constructs and post diagnosis of cancer, an individual may experience distress or PTG or both may occur simultaneously.
Many studies have pointed out to the positive relationship between distress and PTG (Blix et al. 2013; Pooley et al. 2012; Solomon & Dekel 2007) yet there is no definitive stand on this relationship. The review also has studies which document no significant relationship (Joseph et al. 1993; Morris & Finch 2011) and maintain that PTG and distress are independent phenomenon. There is a need to conduct more research on this relationship to arrive at definite answers.

2.4 Measurement of Posttraumatic Distress

Posttraumatic Distress has been studied by many researchers with reference to PTG. Powell et al. (2003) have used the scale [Posttraumatic Diagnostic Scale (PDS)], given by Foa, Cashman, Jaycox & Perry (1997); Morrill et al. (2008) have used the scale [PTSD Checklist –Civilian Version (PCL-C)] given by Weathers, Huska & Keane (1991); Dekel, Ein-Dor & Solomon (2012) have used the scale PTSD Inventory given by Solomon et al. (1993).

2.5 Posttraumatic Growth and Sense of Coherence

Sense of Coherence can be defined as a general orientation that individuals have, in their cognitive and emotional appraisal of the world. Antonovsky (1987) emphasizes the significance of meaningfulness as a motivational element of sense of coherence and affirms that without meaningfulness the other two elements of SOC i.e. comprehensibility and manageability’s essence are lost. An individual has the strength to endure the most challenging traumatic life event if he finds meaning in life and gains insight and awareness about the why’s of traumatic event. Apart from studies conducted by Znoj (1999); Forstmeier et. al. (2009) and Aguirre (2008) there
seems to be a lack of literature concerning the association between SOC, Meaningfulness and PTG.

Znoj (1999) first pointed out sense of coherence in bereaved parents and spinal cord injured patients. He put forward American and European viewpoints on PTG: a model of personal growth. Results reported meaningfulness as an important predictor of PTG in both samples and individuals were more expected to discover meaning in traumatic events and experience growth, when they have a universal conviction of a meaningful world.

In a review of literature conducted by Almedom (2005), it was pointed out that salutogenesis which forms the basis of SOC encompasses the concepts of resilience and hardiness as well. Latest views on resilience, recovery, PTG and transformation give insight to the idea of lending a helping hand to trauma victims and communities, thus illuminating their dark journeys on the road of life.

Forstmeier et al. (2009) examined PTG and its predictors social acknowledgment as survivors, sense of coherence (SOC) and trauma severity. The cross-sectional research was conducted on 103 German ex-soldiers of World War II. Results suggested that recognition as a survivor by significant others (SAQ) and meaningfulness (SOC) remained the only significant predictors of PTG.

In a similar vein Aguirre (2008) also supported that meaning making (SOC) is positively related with post traumatic growth in bereaved individuals. The study was done on 134 adults who had lost one of their loved ones due to various reasons in the past 12-48 months.
Wolff and Ratner (1999) conducted a study on consequences of stress, social support and recent traumatic event on sense of coherence. The secondary data were collected from Canadian national population health survey, 1994. Findings indicated that social support was positively related to SOC while stress and recent traumatic event were negatively related. Childhood traumatic events were much stronger predictors of sense of coherence than traumatic events which occurred in adulthood.

Pallant and Lae (2002) studied sense of coherence, coping, well being and personality factors with an additional assessment of SOC scale short version (13 items). The study was conducted on a large sample of 439 individuals. Results confirmed the evidence for SOC-13 being a valid and reliable scale, as well as positive relation was seen between the variables.

Ageborg et al. (2005) investigated differences in 19 patients on conventional dialysis, home hemodialysis and self-care dialysis regarding sense of coherence, self-care and quality of life. Results implied that a trend of high scores was seen in home hemodialysis patients in relation to sense of coherence, self-care, and quality of life.

Folk, Chair and Lopez (2005) examined the relationships of SOC, quality of life (health related) and coping strategies among 88 critically ill Chinese patients. Results denoted a significant positive relation between all the variables under study. An interesting finding was support from adult children and high income was found to be strong predictors of SOC.
Hogh and Mikkelsen (2005) raised a point on whether SOC acted as a mediator or moderator variable between violence at work and stress reactions. The study was conducted on large Danish sample of working individuals. Results suggested that SOC was weaker in employees who faced violence at work. SOC acted as a mediator rather than a moderator variable between the variables i.e. violence at work and stress reactions.

McGrath and Linley (2006) conducted a study to enquire whether PTG occurred in brain injury patients. The research was done on two matched samples, one early post-brain injury ($M=7$ months) and one late post-brain injury ($M=10$ years). The samples had significant differences with respect to reported post-traumatic growth, with the late sample reporting higher levels. Anxiety was significantly associated with post-traumatic growth. Both samples achieved high scores on the Sense of Coherence scale. The participants demonstrated a considerable positive psychological change thus proving a positive change is allowed even after a severe brain injury. The results proposed that in brain positive changes is a slow and ongoing process dealing with high amount of emotional engagement.

Zboralski et al. (2006) examined SOC, style of coping and personality in 69 depression patients. Results indicated the following major points. Male patients have a strong sense of coherence; males and females have different ways of dealing with everyday problems due to variation in personality traits and in an individual, character traits and the means to handle stressful situations differ in respect to the levels of sense of coherence in individuals.
Surtees, Wainwright and Khaw (2006) have explained the phenomenon of resilience, mortality and misfortune: proving whether SOC is an indicator of social stress adaptive capacity. A large population of 20921 men and women completed the questionnaires on SOC and mentioned their lifetime traumatic events. Results reported that those who slowly adapted to the detrimental effects of traumatic events had a weak SOC as compared to those who had a strong SOC. Thus findings suggest SOC is a strong predictor of social stress adaptive capacity in an individual and also a predictor of mortality.

Arevalo, Prado and Amaro (2008) explored the relationship between SOC, coping and spirituality in 393 women undertaking treatment for substance abuse (drugs and alcohol) with regard to their stress and trauma symptoms. Results implied that stress was seen to significantly relate to severe drugs addiction while trauma symptoms were seen to significantly relate to severe alcohol addiction. Negatively significant relations were seen between – SOC & coping; perceived stress and spirituality; PTSD symptoms and SOC.

Pulko et al. (2009) reported the result on the relationship between SOC and quality of life in 100 female breast cancer patients in early stages of cancer, post operation. Results suggested a good model fit higher the levels of SOC, higher will be the quality of life in female cancer patients.

Kennedy et al. (2010) conducted a longitudinal, multi wave design study on 237 spinal cord injured (SCI) patients, aged 17 years and above from across 6 European countries. They investigated the relationship between SOC, appraisals and behavioral responses to predict psychological outcomes. The measures were
administered at 3 time points i.e. 6 weeks post injury, then 12 weeks and finally after a year. Results indicated towards SOC having a prime role in predicting long term positive psychological outcomes as well as having significant positive associations with appraisals and behavioral responses in spinal cord injured patients.

Knowlden et al. (2013) raised a point on mental health of 220 college going students with regard to hardiness and SOC. Results suggested that the model fits the data well and 43.4% of variance in mental health was explained by SOC and hardiness.

Goldberg and Wiseman (2014) examined parent’s SOC with regard to their diabetic adolescent’s health, emotional and behavioral adjustment. 75 parents whose adolescent child was suffering from diabetes participated in the study. Results revealed that SOC was positively related to adolescent’s health in physical aspects and negatively related to internalizing problems.

Fossion et al. (2014) have recently explored SOC as a mediator between childhood trauma (predictor variable) and depression and anxious disorders (outcome variable) in adulthood trauma (moderator variable). The study was done on Jewish youth who spent World War II in different shelters and hideouts compared with a control group. Presence of multiple traumas was measured in each group. Results indicated that DAD partially mediated SOC as seen consistently in other studies.

SOC has also been studied in pregnant women by Engelhard et al. (2003); haematological cancer survivors by Black & White (2005); traffic accident victims
by Frommberger et al. (1999); trauma therapists by Linley et al. (2005). Altogether results commonly reported SOC linked with lesser negative changes and more positive phenomena.

Walsh (2011) asserted the relationship of PTG with Sense of Coherence, within the South African context. In addition, the associations between the three domains of SOC, in particular Meaningfulness, and the five domains of PTG, were investigated. The sample consisted of tertiary education students, 18 years and older, and who have experienced a traumatic event as defined by the Traumatic Stress Schedule (N=79). Participants reported moderate scores on overall PTG with lower SOC scores relative to similar samples in the literature i.e. PTG is negatively correlated with Sense of Coherence.

On similar lines Bossick (2008) explained the association between PTG and 6 personality traits i.e. SOC, hardiness, optimism, self-efficacy, locus of control and resilience in 276 students and community members. Findings suggested that all the personality traits correlated negatively with PTG.

Many researchers have pointed out to the positive relationship between sense of coherence (meaning-making) and posttraumatic growth (Znoj 1999; Forstmeier et.al. 2009; Aguirre 2008) and also for sense of coherence and other positive variables like hardiness (Knowlden et al. 2013); coping, wellbeing (Pallant & Lae 2002); spirituality (Arevalo et al. 2008); quality of life (Fok et al. 2005; Pulko et al. 2009) yet there is no perfect stance on this relationship. The review also has studies which document no significant relationship (Walsh 2011; Bossick 2008) and maintain that PTG and sense of coherence are independent entities all together.
There is a need to conduct more research on this relationship to arrive at clear-cut answers.

### 2.6 Measurement of Sense of Coherence

SOC has been adapted in many languages for e.g. Orientation to Life Questionnaire – Polish Version (Dudek & Koniarek 2000); Sense of Coherence Questionnaire – Short Lithuanian version (Pulko et al. 2009). The original SOC scale (Antonovsky, 1983) was revised to 13 items by (Antonovsky, 1987) and finally a 6 item version by Kivimaki et al. (2002).

### 2.7 Posttraumatic Growth and Wisdom

While reviewing the literature on wisdom as a variable for my study, in spite of the fact that I did not find any empirical researches suggesting a direct link between wisdom and PTG, I was guided by the basic nature of wisdom as the expertise of an individual in the basics of life. Wisdom assumes a “high level of knowledge about life issues; a high level of procedural knowledge regarding life's problems; superior contextual understanding; superior understanding regarding differences in values and priorities; and a high level of understanding regarding life's unpredictability, as well as the capacity to deal with uncertainty” (Baltes & Smith, 1990, p. 21). The positive relationship between wisdom and PTG lends support to the theoretical pathway that the ability of applying knowledge to the everyday situations of life (wisdom) opens avenues of growth (PTG) when faced with challenging life events.
Theoretical studies have been done by Sternberg (1990) on “Wisdom and its relations to intelligence and creativity”. He critically reviewed the understanding of intelligence and debated on the measure of intelligence seen these days i.e. standard paper and pencil tests. Besides quantitative and analytical aspects of intelligence, he put forward that creativity of individuals should also be taken care of i.e. imagine novel ways of formulating solutions to life’s everyday’s problems. With both the above variables, he also took wisdom into account – the superior ability to understand life’s concepts and deal with them prudently. He further focused on developing as one’s own strength, the insight of one’s own failures and setbacks and then learning how to rise above them efficiently.

Tedeschi and Calhoun’s outcome model of PTG suggests that PTG and enhancement of individual’s life narratives may reciprocally affect each other. PTG shares some universal basics with Wisdom as described by i.e. “fundamental pragmatics of life” (Baltes & Smith, 1990 p. 21). Their postulation is that when PTG is experienced by individuals, changes begin to occur that are constantly continuous and have a reciprocal effect simultaneously with the growth of general wisdom about life and narratives, individuals have for thinking about their lives.

In a review of literature conducted by Linley (2003), it was pointed out that wisdom and its three dimensions have a significant function in the conception of posttraumatic growth and its positive adaptation to psychological trauma. The three dimensions include identification and organization of uncertainty, assimilation of cognition and affect & appreciation and recognition of human weakness and shortcomings. All these dimensions of wisdom together facilitate in the outcome and process of adapting to trauma.
Neff et al. (2007) have reported the result on the relationship between wisdom, happiness and optimism in 177 undergraduate U.S. students. Results suggested that the reflective and affective aspects of wisdom had significant positive relations with happiness while the cognitive aspect did not. All the aspects of wisdom (cognitive, affective & reflective) correlated significantly with optimism.

Beamont (2009) exploring self-transcendant wisdom with subjective happiness in 158 Canadian undergraduates and found both wisdom and happiness to positively relate to each other.

Le (2011) conducted a research on life satisfaction, wisdom, openness value and self transcendence in 123 European – American adults. Findings indicated towards a positive link between life satisfaction and wisdom. Openness value was seen to be an important factor for all the other variables under study.

Bergsma and Ardelt (2012) investigated the associations between wisdom and happiness in a sample of 7037 Dutch internet users. Results reported that wisdom and happiness were modestly positively related with the reflective aspect of the wisdom scale to have a strong correlation with happiness. Interestingly it was noted that adults with only elementary education gave more importance to wisdom and happiness.

Few researchers have pointed out to the positive relationship between wisdom and posttraumatic growth theoretically (Tedeschi & Calhoun, 2004; Linley 2003) yet there is no classic viewpoint on this relationship. The review also has studies which document wisdom with other positive variables like happiness (Neff et
al. 2007; Beaumont 2009; Bergsma & Ardelt 2012); life satisfaction, openness value (Le 2011). There is a need to conduct empirical research on wisdom and posttraumatic growth relationship to arrive at significant answers.

### 2.8 Measurement of Wisdom

The first attempt to measure wisdom was Values in Action Classification of Strengths (Peterson & Seligman, 2004). Wisdom is one of the 24 extensively assessed character strengths measured by this scale. Many researchers have used this scale to measure wisdom. Subsequently scales like Wisdom Development Scale (Brown & Greene, 2006), Three Dimensional Wisdom Scale (3-D WS) (Ardelt, 2003) has also been used by researchers (Neff et al. 2007; Beaumont 2009; Bergsma & Ardelt 2012; Le 2011; Shryack, Steger, Krueger & Kallie 2010) to measure wisdom in their studies.

### 2.9 Posttraumatic Growth and Cognitive Emotion Regulation

Cognitive Emotion Regulation strategies are cognitive processes consciously employed by an individual to handle emotionally arousing information. Recently researchers have found that coping strategies are main elements considering the pathways to PTG. It is also seen that individuals who are competent of developing positive coping strategies can adjust to the aftermath of traumatic events in an affirmative manner. According to Tedeschi and Calhoun (2004) stress generated by cognitive rumination is altered into productive processing, which in turn starts growth development.
Garnefski et al. (2008) explored the relationship between personality, cognitive coping and psychological health with posttraumatic growth in 139 patients suffering from severe myocardial infarction for the first time. Results reported that cognitive coping strategies played a significant role in determining PTG, besides personality and psychological health.

Prati and Pietrantoni (2009) reviewed the roles of optimism, social support & coping strategies in posttraumatic growth. Results of the meta-analytic review of 103 studies proved that all 3 variables correlated positively with PTG, especially with positive reappraisal coping, acceptance coping and religious coping showing highest significant correlation followed by social support, spirituality and optimism with moderate correlation.

Hussain and Bhushan (2011) examined PTG and PTS with the mediation effect brought by cognitive emotion regulation strategies in 226 Tibetan refugees. Results reported that strategies like putting into perspective and acceptance mediated partially the association between posttraumatic stress and traumatic experience. Other strategies like refocus on planning, catastrophizing, positive refocusing and putting into perspective mediated partially the association between traumatic experience and PTG with females scoring higher on all the variables under study. Schroevers, Kraaij and Garnefski (2011) explained the phenomenon between psychological well-being, coping & goal-reengagement, while giving preference to positive and negative changes in 108 cancer patients. Results of this cross-sectional study yielded that positive changes related more to positive emotions while negative changes to negative emotions. Positive changes significantly related to approach coping (positive reappraisal) and goal-reengagement.
Hallam (2012) examined PTG with rumination coping, social support, avoidance coping and quality of life in 70 persons caring for a spouse who had suffered a stroke. Results suggested that all the variables correlated positively with PTG, also reporting growth in at least one domain of PTG.

Bosson, Kelley and Jones (2012) explained the phenomenon of PTG and religious coping, where deliberate cognitive processing was the mediator variable in a sample of hurricane threatened women. Results implied that deliberate cognitive processing mediated fully the association between PTG and religious coping.

Min et al. (2013) investigated the contribution of cognitive emotion regulation strategies to resilience in 230 depression and anxiety patients. Results proved that constructive strategies had higher correlation with resilience as compared to the negative ones. Refocus on planning and positive reappraisal was the most frequently used strategy in resilient and depressed individuals.

Linstrom, Arnie, Calhoun and Tedeschi (2013) explored the associations between core belief challenges, rumination, disclosure, and sociocultural elements with posttraumatic growth in students who reported having gone through a traumatic event in the past 2 years. Results indicated towards challenge to core beliefs being the main predictor of PTG.

Many studies have pointed out to the positive relationship between cognitive emotion regulation strategies like positive reappraisal (Prati & Pietrantoni 2009; Schroevers, Kraaij & Garnefski 2011); religious coping (Prati & Pietrantoni 2009; Bosson, Kelley & Jones 2012) and PTG yet there is no ultimate opinion on this
relationship. The review also has studies which document no significant relationship (Linstrom, Arnie, Calhoun & Tedeschi, 2013) and maintain that PTG and cognitive emotion regulation are independent of each other. There is a need to conduct more research on this relationship to arrive at definite answers.

2.10 Measurement of Cognitive Emotion Regulation

The review of literature shows that cognitive coping has been measured using various scales such as Rumination Scale given by Calhoun et al. (2000) & Cope Scale given by Carver et al. (1989) used by Hallam (2012); Rumination Scale given by Calhoun et al. (2000) used by Lindstrom et al. (2013) & Bosson et al. (2012); Coping Scale developed by Xiao & Xu (1996) used by researcher He et al. (2013).

2.11 Posttraumatic Growth in the Indian Context

PTG is prevalent in the Indian continent also, but till date there is lack of systematic empirical investigation. We come across accounts of growth following adversity in contemporary prominent Indian personalities. I would like to quote few examples.

Indian public figures also have not remained untouched by the transformative power of pain and suffering, which includes Sudha Chandran, Liza Ray, Yuvraj Singh to name a few.

Sudha Chandran, a trained Bharatnatyam and Kathak dancer overcame all obstacles that came her way after a tragic accident which cost her right leg. Due to her strong will power and determination, four years post accident she began dancing
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once again with the help of Jaipur foot (artificial leg). She views the accident as a blessing in disguise because without it she would not have been able to be an exceptional dancer; dancing with the Jaipur foot. She continues to be a real life inspiration not only to specially challenged but also to the common man.

Liza Ray, a Canadian–Indian actress triumphed against all odds of being diagnosed with a rare type of incurable cancer of the white blood cells- multiple myeloma, six years ago. In the past six years she has realized the value of her life and views it as an extended adventure. Life to her is beyond just chasing professional goals or getting intimated by the agonies of her life threatening illness. Her life’s motto being “Never Stop”.

Yuvraj Singh, famous Indian cricketer was diagnosed with lung cancer- mediastinal seminoma which had spread to his heart. After undergoing three depressive and demanding sessions of chemotherapy he states that his battle with cancer has made him a stronger, positive and better person. He asserts that the most important thing in life is happiness and contentment, as money cannot buy them both. Before cancer, cricket, career and thinking about future prospects was his major concern. Post cancer his thoughts have completely changed as he is happy to get his normal life back. In the end, he quotes as follows- “Cancer doesn’t mean that you’re going to die.” Yuvraj has also penned down his thoughts in a book entitled ‘The Test of My Life’ which was released on 19th March 2013.

The phenomenon of PTG is not new to us, the systematic efforts to understand it are like putting old wine into new bottle. Reviewing the literature on
PTG, in the Indian context was not a very fruitful exercise. I came across only one study conducted on an Indian sample.

Thombre, Sherman & Simonton (2010) studied PTG and cognitive processes among 61 Indian cancer patients. PTG was significantly related with greater meaning focused coping (sense-making, benefit finding) and with reappraisal of world views emerging as the strongest predictor of PTG.