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The role of negative beliefs as a pre-trauma vulnerability factor in posttraumatic stress disorder: A pre-survey

KRARZIA Mohamed Akram * SOUALMIA Farida BENLOUCIF Houria

Laboratoire d'Analyse des Processus Sociaux et Institutionnels
University of Constantine 2 - Algeria

mohamed.krarzia@univ-constantine2.dz farida.soualmia@univ-constantine2.dz houria.benloucif@univ-constantine2.dz

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Abstract:

Post-traumatic syndromes are pathological reactions to traumatic events. Most people recover within a relatively short timescale, for others, the symptoms persist for a substantial period. It is stated that post-traumatic syndromes such as PTSD become persistent in individuals with vulnerability factors. This paper reviews the statistical contrast within the prevalence and examines through a pre-survey the importance of negative beliefs as a vulnerability that exacerbates trauma. The survey included 21 individuals (13 men and 8 women) suffering from post-traumatic syndromes. Based on semi-structured interviews, we performed a thematic discourse content analysis. The results show themes relating to thoughts and beliefs, physical sensations, memories of the event, emotional states, and social support. Out of 759 themes, 239 featured negative beliefs, accounting for 29.54% of the corpus – the highest percentage of textual units in the analysis. The themes concern thoughts of rumination, devaluation, low self-esteem, control, blame, responsibility, and pessimism. These findings suggest an important relationship between pre-trauma negative beliefs and the occurrence of post-traumatic syndromes.

Keywords:

Trauma, PTSD, vulnerability, negative beliefs.

* Correspondent author

1 Introduction

1.1 Background

There is considerable evidence in the current literature illustrating the significant differences in the likelihood of developing post-traumatic syndromes following a traumatic event, whether it's before the occurrence of the trauma or in the aftermath. Historically, Kinzie and Goetz reported that post-traumatic reactions were clinically identified as early as the nineteenth century with railway disaster victims, particularly in England (1996). However, authors reported descriptions that go back to 2000 BC, such as the Epic of Gilgamesh and the Lamentation of Nippur and other Sumerian cities, where there is a description of constant revival of the traumatic event, recurrent and intrusive memories, emotional numbing, and a sense of impotence and an impeded future; with warriors and witnesses (Figley, 2012; Ford et al., 2015).

Despite the controversy around this foundation, the appearance of the symptoms for some types of traumatic syndromes such as posttraumatic stress disorder (PTSD) is still the same: related-event memories intrusion, avoidance, hyperstimulation, numbing of emotions (Ford et al., 2015; Reyes et al., 2008). in the early 80^{s}, PTSD was finally established as a psychiatric diagnosis and depicted as the most common mental health disorder that develops following exposure to traumatic events (Bremner, 2016). Being part of the anxiety disorders category, the PTSD criteria were constantly reviewed until DSM-IV-TR (APA, 2000). In 2013, with the release of DSM-5, PTSD is no longer considered part of this category and henceforth will be included in a fully-fledged category called Trauma- and Stressor-Related Disorders (APA, 2013). The diagnosis of PTSD requires several criteria, starting with criterion *A* as a *sine-qua-non* condition to be relevant (APA, 2013), which implies that it had to develop after exposure to a potentially traumatic event. Among this new category, PTSD presents a unique clinical picture, depending on the presence criterion A. But even if the spectrum of events is defined, defining its potentiality remains debatable. Consequently, the statistics around the syndrome will be affected, whether it's the prevalence of the exposure or the syndrome itself. Factors such as gender differences, ethnic and cultural characteristics or the type of event have an influence on the statistics (Breslau, 2002).

1.2 Prevalence of exposure to traumatic events

In the early 90s, Breslau et al. (1991) reported that 39.1% of young adults, aged from 21 to 30 years old had been exposed to traumatic events. The study also stated that men (43,01%) were at greater risk of exposure than women (36,71%). In a larger sample, Norris (1992) found a rate of 69% of a sample of southern Americans, that had experienced traumatic events at least once in their lifetime and 21% in the previous year alone. There was only one study representative of the general population in the United States using face-to-face interviews. The sample counted 5877 people aged from 15 to 54 years old. According to Kessler, more than half the general population percent reported they had experienced a traumatic event once in their lives (Kessler et al., 1995).

In Europe, some studies like were conducted among the general population. One of these is the SMPG survey, which took place in France from 1999 to 2003 among more than 36,000 individuals. The lifetime prevalence of exposure to potentially traumatic events in this population shows that 30.2% have encountered at least one event considered to be traumatic during their lifetime (Vaiva et al., 2008). These results show that the European data are quite different from the rates found in America. They are still at odds with the results of studies conducted in countries that have experienced war or conflict, Friedman (2015) highlighted the notion of higher risk in these countries.

In Algeria, even though the concept of *trauma exposure* (or exposure to potentially traumatic events) is relatively unknown in the research field of trauma, the study of DeJong et al. (2001) did report valuable data. The study reviews epidemiological surveys conducted in the late 90s in 4 countries in a conflict situation. The exposure to conflict-related events after the age of 12 years was reported by 91.9% in Algeria, 59.3% in the region of Gaza, Palestine, 74.4 % in Cambodia, and 78% in Ethiopia. The Algerian sample included 653 participants from the peri-urban area of Algiers (the Governorate of Algiers at that time). The inhabitants of this area were considered survivors of armed conflict due to the random terrorist attacks that involved massacres of hundreds of people.

1.3 Prevalence of PTSD

On the other hand, studies on PTSD prevalence are more common and well-documented and also show a wide range of PTSD rates across epidemiologic studies (Sareen, 2014).

In the Breslau sample, the rate of PTSD among the 394 people exposed was 23.6%, bringing the prevalence down to 9.2% of the sample. In addition, post-traumatic stress disorder was not randomly distributed in the population; certain groups were at higher risk than others, as for the sex ratio. The prevalence for women was about 11 % compared to 6% for men, a difference accounted for by women's greater likelihood of developing PTSD after experiencing traumatic events, although men were more exposed to traumatic events (Breslau, 1991). In Norris (1992), the overall PTSD rate was about 6%, even if the sample was larger, despite the disparities within groups. This study also found a higher rate for women than men, 15 % vs 6%. These data were collected based on the DSM-III-R and are fairly close to the 3rd major study, finding a rate of approximately 8 % (Kessler et al., 1995), with a prevalence rate of 10.4% among women as opposed to only 5% for men. The rates were ranged from 1.4 % (physical attack) to 24.3 % (witnessing) among men, 1.8 % (neglect) to 29.9 % (rape) for women. On the European side, studies ranged the lifetime prevalence of PTSD from 1.1% to 3.9% (Vaiva et al., 2008).

In Eastern countries, the rates are much higher. The prevalence of PTSD symptoms based on DSM-IV is about 15.8% in Ethiopia, 17.8% in Gaza, 28.4% in Cambodia, and 37.4% in Algeria. With a notable difference between women and men; women had more PTSD symptoms than men both in Cambodia and in Algeria (de Jong et al., 2001). In a meta-analysis of Iranian population studies, the highest prevalence was found among victims of the 2003 earthquake, where the rate of people with PTSD reached 58% of survivors, and the overall rates for different types of events varied between 30 and 60%, covering war-related events, disasters, and interpersonal violence (Sepahvand et al., 2019). Most recently, in African sub-Saharan countries, a systematic review and meta-analysis found a pooled rate of PTSD from high-quality studies estimated to be 20%. Half of the studies that reported a significant difference in the prevalence between men and women revealed higher rates of PTSD in women. Most of the other studies didn’t show a significant difference (Ng et al., 2020).

Based on that, approximately two-thirds of individuals exposed to a traumatic event will not develop PTSD. Plus, in light of the variation in the prevalence of PTSD, scientists who contest the existence of a single specific post-traumatic syndrome, have put forward the main hypothesis of the presence of vulnerability core, otherwise, individuals exposed to traumatic events should not develop psychiatric disorders (McFarlane & Yehuda, 2007). A key to understanding this heterogeneous trajectory is therefore investigating predictors of the syndrome, which several authors consider as vulnerability factors (Brewin et al., 2000; Pineles et al., 2017).

1.4 Defining vulnerability factors

Vulnerability refers to specific characteristics or conditions that increase an individual's susceptibility to experiencing mental health challenges or emotional distress, it can be understood as an inability to withstand the constraints of the environment. These factors can heighten the risk of developing conditions such as post-traumatic responses. Some authors also refer to it as a diathesis, a term popularized in psychology by the *diathesis-stress model*, also known as the *vulnerability-stress model* (Ingram & Price, 2010). The theory attempts to explain the appearance of a given disorder - or its trajectory - as the result of an interaction between a pre-existing vulnerability and the stress caused by life experiences (Ingram & Luxton, 2005; Ingram & Price, 2001, 2010; McKeever & Huff, 2003). Some authors use the terms diathesis and vulnerability interchangeably (Bomyea et al., 2012).

A diathesis can take the form of psychological, biological, or external factors. Individual variances in vulnerability to the onset of a condition are quite diverse. A vulnerability makes it more likely for the individual to succumb to the development of a psychopathological issue if a stress factor is encountered. Diatheses are inherent to the individual and are typically conceptualized as stable, but not immutable, throughout a lifetime. They are also often regarded as latent (i.e., dormant) because they are more difficult to recognize unless triggered by stressors (Elwood et al., 2009).

While the concept of *vulnerability* means injury in Latin, the word *risk* in common usage is synonymous with inconvenience or danger. In fields such as finance and economics, it has a more precise meaning and refers to the possibility of an event that does not depend exclusively on the individual's will and that could cause damage. Strictly speaking, it is the possibility of an uncertain event that does not depend on people, and which may cause loss or damage. Risk is therefore an unfortunate occurrence that should be avoided (Jolibert, 2014).

In psychology, we use the concept of risk factors when it is impossible to isolate the exact cause of a phenomenon, such as trauma. This makes our interest in vulnerability factors more legitimate. Ford et al. (2015) combine risk factors and vulnerability factors. The vulnerability factor would be one of the types of risk factors, considering that there are three types: causal factors, vulnerability factors, and outcome factors.

1.5 Types of vulnerability factors

Vulnerability factors include those aspects related to the individual and his environment that make a person more likely to suffer from a causal risk factor or to develop a pathology or disturbance after having suffered from the causal risk factor. Several vulnerability factors to exposure to stressful events can be mentioned, such as social environment, age, gender, ethnic origin, previous life events, and the individual's characteristics (personality, beliefs…etc.).

Among the different vulnerability factors developed in the literature, there is no consensus on their classification. However, we found out that numerous authors use similar categories to describe the different types of factors, mostly factors inherent to the individual (not the environment or the event), which are thought to have a major role to play in understanding the occurrence of PTSD (Brewin et al., 2000). It includes lifetime occurrence of psychiatric disorders, exposure to traumatic events and adversities during childhood (Bremner, 2016), Social isolation and lack of social support (Josse, 2019), biological vulnerability such as genetics factors, serotonin genes, neuroendocrine responses; and cognitive vulnerability (Aupperle et al., 2012; Bomyea et al., 2012), but also maladaptive cognitive responses such as negative beliefs and rumination (Moulds et al., 2020).

The Ehlers and Clark model suggested that individuals suffering from PTSD are characterized by idiosyncratic negative appraisals of the traumatic event and/or its sequelae (Ehlers & Clark, 2000). In addition to the processing type of trauma memory, the authors showed a range of cognitive strategies (e.g., rumination) that are thought to predict and maintain PTSD (Ehlers & Clark, 2000; Ehring et al., 2006). This is not new, some authors attempted to address arguments suggesting that negative beliefs are not only associated with the maintenance of post-trauma symptoms, but also with the relationship between the beliefs held by those victims before the traumatic event and the appearance of psychotrauma. Foa and Riggs (1993, in Ali et al., 2002) stated that vulnerability to psychotrauma may be linked to negative beliefs before the trauma.

Later studies were more focused on the effect of such factors prior to trauma. For example, Ali et al., in a study comparing two groups, one with PTSD and the other without, showed that the no PTSD group may have been protected from developing the syndrome by their more positive pre-assault beliefs. it suggests that these positive beliefs may have played a helpful role, in reducing the impact of the event (2002). It therefore implies that negative beliefs are more likely to lead to PTSD. Bryant and Guthrie assessed the cognitive style of 68 firemen before they were exposed to trauma during training, then retested them a year after they started working. The results demonstrated that negative self-appraisals before trauma exposure predict PTSD (2007). Another study was conducted to explore whether usual rumination, measured before trauma exposure, makes individuals more vulnerable to developing PTSD. It is hypothesized that those individuals are more likely to cognitively appraise trauma exposure in a negative way (Spinhoven et al., 2015). Their results confirmed the hypothesis concluding that trait rumination can lead to vulnerability for PTSD following a traumatic event. The same conclusion with the Wild et al. study, conducted with 453 newly recruited paramedics, assessed for 2 years. The results during the follow-up period found more than 8% of participants developed an episode of PTSD and identified with several pre-trauma predictors, such as rumination about memories of stressful events at the beginning of training.

2 Method

The aim of the survey stemming from our thesis work was to explore possible vulnerability factors in people suffering from post-traumatic reactions. This survey enabled us to identify negative beliefs as one of these factors and constitutes a key aspect of the onset of psychotrauma.

2.1 Participants:

The survey involved a group of 21 subjects, men (n= 13) and women (n = 8), with different levels of education and socio-professional situations, aged between 27 and 42 years old. The subjects were included following an inventory of admissions to the psychotrauma ward in the external consultation units of the psychiatric emergency department at Djebel Ouahech (Constantine) and Errazi (Annaba) specialized hospitals. As inclusion criteria, the participants had to be exposed to a traumatic event that occurred 3–12 months ago. They received a diagnosis of PTSD using DSM-5 and PCL-5. The diagnosis was made by a psychiatric assistant accompanied by a clinical psychologist and then approved by the senior assistant in charge of the unit.

2.2 Procedure:

The procedure was carried out in two phases: first, the formulation of the grid questions followed by the conduct of the semi-structured interviews for data collection, and second, the analysis of the corpus.

Open-ended questions for semi-structured interviews were addressed to the subjects, with probes necessary to elaborate on the responses. The interview grid's questions were designed according to the objectives set beforehand and discussed with our research supervisors while being equipped with a rich literature review. The interviews were conducted at Djebel Ouahech and Errazi specialized hospitals. After obtaining the approval of the head physicians at each facility. All participants gave their consent before being interviewed. Data collection took place over different periods. First, 11 individuals were interviewed between December 2020 and April 2021, with a further 10 from November 2021 to April 2022.

To gather information about each participant's experiences, perspectives of the phenomenon of psychological trauma, and experiences after it occurred, the interviews were audio recorded. Twenty-nine interviews were conducted, lasting an average of 75 minutes, using open-ended questions and encouraging the participants to repeat what they had said. We followed an interview grid based on open-ended questions about:

- The subject's current experience (what he/she is currently enduring, feeling, what are the disturbing situations, affects, behaviors, etc.).
- The traumatic event: how they felt about it, how they responded to it, and how long it lasted (within the subject's tolerance).
- Experiences before the trauma: any significant stressor, disturbing or painful event, emotional state, etc.

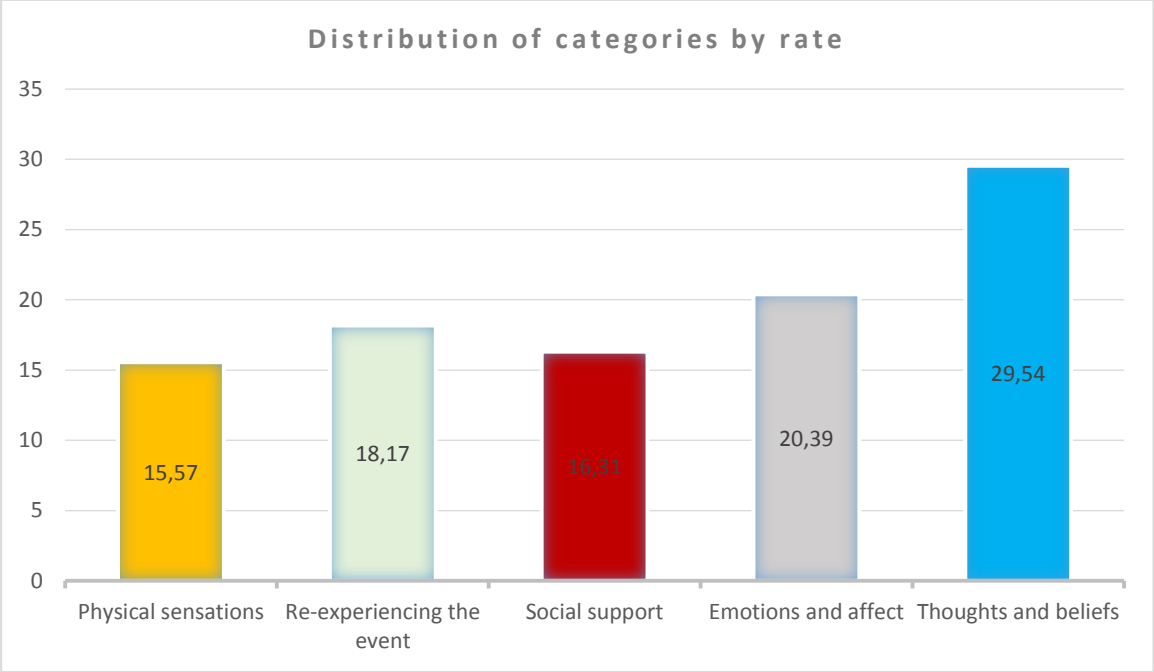
The data saturation level for a thematic analysis was reached. By the 27th interview, we had collected no new themes or categories relevant to our research objective. We did, however, add two further interviews with two different interviewees. We then carried out a content analysis to process the interviewees' speeches based on the themes that emerged.

The audio recordings were transcribed verbatim into text, word for word, everything the interviewee said, without modifying the text, without interpretation or abbreviation, except for out-of-context speech such as pauses, repetitions, hesitations, laughter, sighs, language idioms such as " هيه ", "معليش", "آسيدي"…etc. This type of content was noted but not considered in the analysis. A transcription is an interpretation of an information-collection situation and carries with it a certain loss (deliberately or not) of information which must be as little prejudicial as possible to the object of our study.

2.3 Content Analysis

The content analysis of the data covered a corpus of 1306 items, based on Bardin's method (2013). We familiarized the data by reading the transcripts several times. To derive categories and themes from the participants' responses we performed a verbatim transcription of the recorded samples following the *thematic analysis* method, in which we identify the different themes or specifications contained in the text and then classify these themes into more general categories. Meaningful units related to the questions were selected and sorted into themes followed by categories. A frequency count of occurrences of each theme during the analysis of all the samples was done.

Figure 01: "Distribution of categories"



The overall analysis of the data obtained from 21 participants generated 759 units related to the trauma, clustered in 5 major categories. Meaningful themes under each category are summarized in Table 1. Categories included (1) Physical sensations; (2) Re-experiencing the traumatic event; (3) Emotions and affect; (4) Social Support; and (5) Thoughts and beliefs.

Categories	Themes
Physical sensations	Fluttering heartbeats, rapid breathing, shivering, stomach knots, knee pain, hot flushes, and excessive sweating.
Re-experiencing the event	Flashbacks, nightmares, intrusive memories about the event…
Emotions and affect	severe fear, anger, guilt, anxiety, emotional numbness, psychological distress
Social Support	Colleagues' supportive comments, worries of loved ones, isolation in terms of friendships, unemployment worries... etc.
Thoughts and beliefs	Rumination, self-blame, devaluation, low self-esteem, control, blame, responsibility, pessimism, and guilt.

Table 01: "Summary of meaningful themes and categories"

As we are primarily interested in the effects of **negative beliefs**, we will exclusively draw up the results for this category, and then identifying its specific themes, in order to delimit the scope of our analysis.

3 Results

3.1 General characteristics

The categories covered were identified intuitively, during the familiarization phase with the corpus. For each category identified, we counted its absolute and relative frequency of

occurrence. The rates derived from textual unit segmentation are displayed in Table 2 and Figure 1. The first finding is that the categories are relevant and accurately depict the clinical picture of post-traumatic conditions. This finding shows that the targeted sample does represent the clinical population studied, i.e. people with post-traumatic syndromes (PTSD or ASD).

Categories **N = 21**	Physical sensations	Re-experiencing the event	Thoughts and beliefs	Affective and Emotional State	Social support
Frequency **Rate** %	**126** **15,57%**	**147** **18,17%**	**239** **29,54%**	**165** **20.39%**	**132** **16.31%**

Table 2: "Frequency and rates of textual units"

- For the Physical Sensations category, the analysis reveals 126 themes, representing 15.57% of the themes in the entire corpus. These themes mainly concern physiological reactions that subjects complain of, such as fluttering heartbeats, a lump in the stomach, headaches, tingling fingers and heavy knees.
- For the category Re-experiencing the Event, the analysis finds 147 themes, representing 18.17% of the themes in the entire corpus. These themes concern memories of the event, some of which are intrusive (flashbacks), others are fuzzy memories, nightmares most often depicting the event being replayed, images of people, of places, and other elements associated with the event.
- For the Affective and Emotional State category, the analysis found 165 themes, representing 20.39% of the themes in the entire corpus. These themes concern the feelings expressed by the person, such as general fear or the fear of reoccurring adversity, anger, shame...etc.
- Lastly, the Social Support category was mentioned 132 times, representing 16.31%, with a variety of themes, such as the reactions of work colleagues, supportive and sympathetic comments, the worries of loved ones, the family's financial situation, the emotional quality parents' behaviors, spouses and friends, isolation in terms of friendships, unemployment worries... etc.
- In the Thoughts and Beliefs category, the analysis found 239 themes or 29.54% of the corpus. Which makes it the largest in terms of textual unit rate. The themes concern thoughts of devaluation (I deserve what's happening to me), blame, responsibility (it's my fault), low self-esteem, control, pessimism, and guilt.

3.2 Negative beliefs as objectives and outcomes

The targeted category concerns a dimension intrinsically linked to the trauma phenomenon: the dimension of thoughts and beliefs, specifically negative beliefs. Unlike emotions (psychological states that involve physiological changes), and perceptions (the process of interpreting sensory information); what is called beliefs are mental representations that reflect our understanding of the world. This process of understanding is at the core of several different models of adjustment and maladjustment. Negative beliefs are part of these last ones, as we can see in Table 3, a range of negative belief themes emerge from our segmenting.

Table 3: "Themes of the category Thoughts & Beliefs"

Category	Themes	Example of meaningful unit
Thoughts & Beliefs	**Thoughts of devaluation**	I deserve what's happens to me (نستاهل واش صرالي) My fate is always a mess (زهري ديما معوج) I'm meaningless (ما عندي حتى قيمة)
	Blame	Why did I go to such place? (واش داني لي البلاصة كيما هذيك)
	Self-esteem	I'm not brave / I'm a coward (مانيش فحل)
	Responsibility	It's all my fault (هذي كل الغلطة تاعي)
	Pessimism	Life/the world is insecure (الدنيا ما فيهاش الآمان) We can never avoid disasters (واحد ما يسلك من الكوارث)
	Control	These things do not happen to me usually (انا ما يصروليش هذا الحوايج) I'm supposed to be cautious (زعمة انا ديما نحاذر)
	Rumination	For sure it will happen to me again (اكيد تعاود تصرالي)

4 Discussion

This exploratory survey focused on individuals' appraisals about their trauma-related beliefs, employing thematic content analysis in order to identify statements involving beliefs within the trauma narrative. As predicted, we found that individuals automatically use negative beliefs when referring to their judgment about traumatic experiences, but not only.

Exploratory aims were to find out: (1) the occurrence of statements about negative beliefs, (2) the types of negative beliefs and their meaning, (3) and finally, whether the participants used these statements often in daily life.

Although the results show a significant proportion of other categories, particularly *Emotion & Affect* (20.39%), it's important to note that the category we're interested in - *Thoughts and Beliefs* - still had the highest proportion (29.54%). This demonstrates the importance and the impact that trauma-related beliefs can have on the onset and maintenance of post-traumatic disorders in general, and PTSD in particular, as it is reported in the literature. Cox et al., and Brown et al. (2019; 2014) suggest that negative post-trauma cognitions contribute to maintaining PTSD symptoms, which leads individuals suffering from these symptoms to engage in avoidance and reinforces negative appraisals of themselves. The study also demonstrates how recurring the statements are. However, it is important to distinguish this characteristic from the intrusive memories, which represent the revival syndrome (APA, 2013). While the recurrence factor appears in both cases, the negative beliefs, ruminative thoughts, and other cognitions remain phenomenologically and functionally different than intrusive memories (Ehlers & Clark, 2000; Moulds et al., 2020).

Negative beliefs, also called negative cognitions, play a central role in the etiology and maintenance of posttraumatic stress disorder (PTSD). As mentioned in the literature, we found common examples of cognitions used by participants. Statements like "ما عندي حتى قيمة" are very similar to cognitions reported by Dell'Osso et al. (2019) such as "I am totally incompetent" or "I am worthless".

We can also notice a concordance between the type of cognitions that is often linked to the type of emotional response. individuals with PTSD, as shown in this study's outcomes, use beliefs related to blame and self-esteem themes to reflect emotional reactions such as shame and guilt. This interaction between beliefs and PTSD symptoms can be seen as a vicious cycle, especially because several types of beliefs can lead to a continuous type of emotional reaction, as for the guilt and shame example, Pugh et al. (2015) have shown in a review the implication of beliefs related to control, responsibility in addition to self-blame.

It is also important to point out the variability between genders in terms of the type of beliefs. Women tend to report themes about rumination and devaluation, while men report more about control and responsibility. Some statements combine devaluation and counterfactual, such as "كون جيت راجل ما تصرليش", "if I was a man, it wouldn't happen". Our findings are perfectly in line with what reported in previous studies (Pineles et al., 2017)

5 Conclusion

In conclusion, even if the study does not address whether a tendency to sustain negative thoughts before being exposed to trauma increases the risk of developing the disorder, the data show that people who have experienced psychological trauma and developed a pathological reaction show consistent variability in the responses type, which remains consistent across the different themes of the category *Thoughts and Beliefs*. Such variability in the emotional response style, the gender style, and most of all, the type of themes used,

demonstrates both the impact of this factor but also leads us back to the premise that people diagnosed with post-traumatic stress disorder may reflect the importance of factors prior to the event, which could provide a framework of vulnerability factors, especially negative beliefs/cognitions.

Considering cognitions to be thought patterns or schematic representations, that individuals use to overlay what they receive perceptually with what is encoded from previous experiences, or what Dalgleish described as representations that "bring order to the chaos of a lifetime of myriad experiences …" (2004, p. 256), we can assume that their shattering is due either to a rationality failure or to the pre-existence of negative beliefs, hence vulnerability. However, it is important to note how few studies mention negative cognitions as a predictor of the onset of PTSD or any other post-traumatic reaction, which makes this field still ripe for further investigation about counterfactual thinking, rumination, attributional and other belief styles, that could probably interfere with the appearance of trauma.

References

Ali, T., Dunmore, E., Clark, D., & Ehlers, A. (2002). The role of negative beliefs in posttraumatic stress disorder: A comparison of assault victims and non victims. *Behavioural and Cognitive Psychotherapy*, *30*(3), 249–257. https://doi.org/10.1017/S1352465802003016

APA. (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th Text Revision). American Psychiatric Association.

APA. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

Aupperle, R. L., Melrose, A. J., Stein, M. B., & Paulus, M. P. (2012). Executive function and PTSD: Disengaging from trauma. In *Neuropharmacology* (Vol. 62, Issue 2, pp. 686–694). https://doi.org/10.1016/j.neuropharm.2011.02.008

Bomyea, J., Risbrough, V., & Lang, A. J. (2012). A consideration of select pre-trauma factors as key vulnerabilities in PTSD. *Clinical Psychology Review*, *32*(7), 630–641. https://doi.org/10.1016/j.cpr.2012.06.008

Bremner, J. D. (Ed.). (2016). *Posttraumatic Stress Disorder : From Neurobiology to Treatment*. Wiley. https://doi.org/10.1002/9781118356142

Breslau, N. (1991). Traumatic Events and Posttraumatic Stress Disorder in an Urban Population of Young Adults. *Archives of General Psychiatry*, *48*(3), 216. https://doi.org/10.1001/archpsyc.1991.01810270028003

Breslau, N. (2002). Epidemiologic Studies of Trauma, Posttraumatic Stress Disorder, and other Psychiatric Disorders. *The Canadian Journal of Psychiatry*, *47*(10), 923–929. https://doi.org/10.1177/070674370204701003

Breslau, N., Davis, G. C., Andreski, P., & Peterson, E. (1991). Traumatic Events and Posttraumatic Stress Disorder in an Urban Population of Young Adults. *Archives of General Psychiatry*, *48*(3), 216–222. https://doi.org/10.1001/archpsyc.1991.01810270028003

Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, *68*(5), 748–766. https://doi.org/10.1037/0022-006X.68.5.748

Brown, L. A., Belli, G. M., Asnaani, A., & Foa, E. B. (2019). A Review of the Role of Negative Cognitions About Oneself, Others, and the World in the Treatment of PTSD. *Cognitive Therapy and Research*, *43*(1), 143–173. https://doi.org/10.1007/s10608-018-9938-1

Bryant, R. A., & Guthrie, R. M. (2007). Maladaptive Self-Appraisals Before Trauma Exposure Predict Posttraumatic Stress Disorder. *Journal of Consulting and Clinical Psychology*, *75*(5), 812–815. https://doi.org/10.1037/0022-006X.75.5.812

Cox, K. S., Resnick, H. S., & Kilpatrick, D. G. (2014). Prevalence and correlates of posttrauma distorted beliefs: Evaluating dsm-5 ptsd expanded cognitive symptoms in a national sample. *Journal of Traumatic Stress*, *27*(3), 299–306. https://doi.org/10.1002/jts.21925

Dalgleish, T. (2004). Cognitive Approaches to Posttraumatic Stress Disorder: The Evolution of Multirepresentational Theorizing. *Psychological Bulletin*, *130*(2), 228–260. https://doi.org/10.1037/0033-2909.130.2.228

de Jong, J. T. V. M., Komproe, I. H., Van Ommeren, M., El Masri, M., Araya, M., Khaled, N., van de Put, W., & Somasundaram, D. (2001). Lifetime Events and Posttraumatic Stress Disorder in 4 Postconflict Settings. *JAMA*, *286*(5), 555. https://doi.org/10.1001/jama.286.5.555

Dell'Osso, L., Cremone, I. M., Carpita, B., Dell'Oste, V., Muti, D., Massimetti, G., Barlati, S., Vita, A., Fagiolini, A., Carmassi, C., & Gesi, C. (2019). Rumination, posttraumatic stress disorder, and mood symptoms in borderline personality disorder. *Neuropsychiatric Disease and Treatment*, *15*, 1231–1238. https://doi.org/10.2147/NDT.S198616

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*(4), 319–345. https://doi.org/10.1016/S0005-7967(99)00123-0

Ehring, T., Ehlers, A., & Glucksman, E. (2006). Contribution of cognitive factors to the prediction of post-traumatic stress disorder, phobia and depression after motor vehicle accidents. *Behaviour Research and Therapy*, *44*(12), 1699–1716. https://doi.org/10.1016/j.brat.2005.11.013

Elwood, L. S., Hahn, K. S., Olatunji, B. O., & Williams, N. L. (2009). Cognitive vulnerabilities to the development of PTSD: A review of four vulnerabilities and the proposal of an integrative vulnerability model. *Clinical Psychology Review*, *29*(1), 87–100. https://doi.org/10.1016/j.cpr.2008.10.002

Figley, C. (2012). *Encyclopedia of Trauma: An Interdisciplinary Guide*. SAGE Publications, Inc. https://doi.org/10.4135/9781452218595

Ford, J. D., Grasso, D. J., Elhai, J. D., & Courtois, C. A. (2015). *Posttraumatic Stress Disorder: Scientific and professional dimensions* (2nd ed.). Academic Press.

Friedman, M. J. (2015). *Posttraumatic and Acute Stress Disorders* (6th ed.). Springer International Publishing.

Ingram, R. E., & Luxton, D. D. (2005). Vulnerability-Stress Models. In B. L. Hankin & J. R. Z. Abela (Eds.), *Development of psychopathology: A vulnerability-stress perspective* (pp. 32–46). Sage Publications, Inc.

Ingram, R. E., & Price, J. M. (Eds.). (2001). *Vulnerability to psychopathology: Risk across the lifespan*. The Guilford Press.

Ingram, R. E., & Price, J. M. (Eds.). (2010). *Vulnerability to psychopathology: Risk across the lifespan*. (2nd ed.). The Guilford Press.

Jolibert, B. (2014). Convient-il de prendre des risques ? In G. Ferréol (Ed.), *Risque et vulnérabilité* (pp. 6–23). EME éditions.

Josse, É. (2019). *Le traumatisme psychique chez l'adulte*. De Boeck Supérieur.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic Stress Disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, *52*(12), 1048. https://doi.org/10.1001/archpsyc.1995.03950240066012

Kinzie, J. D., & Goetz, R. R. (1996). A century of controversy surrounding posttraumatic stress-spectrum syndromes: The impact on DSM-III and DSM-IV. *Journal of Traumatic Stress*, *9*(2), 159–179. https://doi.org/10.1002/jts.2490090202

McFarlane, A. C., & Yehuda, R. (2007). Resilience, vulnerability, and the course of posttraumatic reactions. In B. A. van der Kolk, A. C. McFarlane, & Weisaeth Lars (Eds.), *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society* (pp. 155–181). The Guilford Press.

McKeever, V. M., & Huff, M. E. (2003). A Diathesis-Stress Model of Posttraumatic Stress Disorder: Ecological, Biological, and Residual Stress Pathways. In *Review of General Psychology* (Vol. 7, Issue 3, pp. 237–250). American Psychological Association Inc. https://doi.org/10.1037/1089-2680.7.3.237

Moulds, M. L., Bisby, M. A., Wild, J., & Bryant, R. A. (2020). Rumination in posttraumatic stress disorder: A systematic review. *Clinical Psychology Review*, *82*(101910), 1–16. https://doi.org/10.1016/j.cpr.2020.101910

Ng, L. C., Stevenson, A., Kalapurakkel, S. S., Hanlon, C., Seedat, S., Harerimana, B., Chiliza, B., & Koenen, K. C. (2020). National and regional prevalence of posttraumatic stress disorder in sub-Saharan Africa: A systematic review and meta-analysis. *PLoS Medicine*, *17*(5). https://doi.org/10.1371/journal.pmed.1003090

Norris, F. H. (1992). Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Consulting and Clinical Psychology*, *60*(3), 409–418. https://doi.org/10.1037/0022-006X.60.3.409

Pineles, S. L., Arditte Hall, K. A., & Rasmusson, A. M. (2017). Gender and PTSD: different pathways to a similar phenotype. *Current Opinion in Psychology*, *14*, 44–48. https://doi.org/10.1016/j.copsyc.2016.11.002

Pugh, L. R., Taylor, P. J., & Berry, K. (2015). The role of guilt in the development of post-traumatic stress disorder: A systematic review. In *Journal of Affective Disorders* (Vol. 182, pp. 138–150). Elsevier B.V. https://doi.org/10.1016/j.jad.2015.04.026

Reyes, G., Elhai, J. D., & Ford, J. D. (2008). The Encyclopedia of Psychological Trauma. In G. Reyes, J. D. Elhai, & J. D. Ford (Eds.), *The Encyclopedia of Psychological Trauma*. John Wiley & Sons, Inc. https://doi.org/10.1002/9781118269947

Sareen, J. (2014). *Posttraumatic Stress Disorder in Adults: Impact, Comorbidity, Risk Factors, and Treatment*. *59*(9), 460–467.

Sepahvand, H., Hashtjini, M. M., Salesi, M., Sahraei, H., & Pirzad, G. (2019). *Prevalence of Post-Traumatic Stress Disorder (PTSD) in Iranian Population Following Disasters and Wars : A Systematic Review and*. *13*(1), 1–12. https://doi.org/10.5812/ijpbs.66124.Review

Spinhoven, P., Penninx, B. W., Krempeniou, A., van Hemert, A. M., & Elzinga, B. (2015). Trait rumination predicts onset of Post-Traumatic Stress Disorder through trauma-related cognitive appraisals: A 4-year longitudinal study. *Behaviour Research and Therapy*, *71*, 101–109. https://doi.org/10.1016/j.brat.2015.06.004

Vaiva, G., Jehel, L., Cottencin, O., Ducrocq, F., Duchet, C., Omnes, C., Genest, P., Rouillon, F., & Roelandt, J. L. (2008). Prévalence des troubles psychotraumatiques en France métropolitaine. *Encephale*, *34*(6), 577–583. https://doi.org/10.1016/j.encep.2007.11.006