

## Overgeneral Autobiographical Memory and Depression: A Study on Reduced Specificity in Autobiographical Memory and Vulnerabilities in Depression

Torsa Chatteraj<sup>1\*</sup>

### ABSTRACT

Autobiographical memory (AM) is defined by self-relevant memories that have been accumulated for a period of one's life, the specificity of said memories is determined by the retrieval of events in an individual's life that has occurred within a span of 24 hours and overgeneral retrieval of such memories is determined by extended, categoric, repeated memories along with semantic associates and omissions. This study highlights the predictive quality of testing autobiographical memory in terms of assessing depression. The current research aims to highlight the differences in retrieval of autobiographical memories in individuals diagnosed with depression and minimal depression with the help of the Beck's Depression Inventory-II (BDI-II). A total of 102 individuals within 3 different age groups (18-35, 36-55 and 56 and above) were assessed for the test. The Autobiographical Memory Test and BDI-II were used to measure the two variables. The findings of the study demonstrated a significant positive correlation between depression scores and overgenerality of AM and significant negative correlation with specific memories. There was no significant difference found between ages and recall of AM along with no significant differences in gender and the recall of AM.

**Keywords:** *Autobiographical Memory (AM), Overgeneral Autobiographical Memory (OGM), Specific Autobiographical Memory, Beck's Depression Inventory-II (BDI-II), Self-reported Depression and Minimal Depression*

Research pertaining to the field of Overgeneral Autobiographical Memory has conclusively shown a predisposition towards depressive symptoms, their development and onset amongst participants displaying a reduced specificity in autobiographical memory. Reduced specificity implies the retrieval of fewer specific memories surrounding oneself and increased recall of overgeneral memories. As defined by Williams & Dritschel (1992) OGM is a categorical summary of recurrent memories or an extended period. It is also noted that the nature of overgeneral memories differs vastly in depression and PTSD from other disorders. To better understand this risk factor OGM poses for depression amongst adolescents in comparison with other disorders, Rawal, A., & Rice,

<sup>1</sup>Student, Vasant Kanya Mahavidyalaya, Banaras Hindu University, Varanasi, India

\*Corresponding Author

Received: December 09, 2021; Revision Received: February 10, 2022; Accepted: March 04, 2022

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F. (2012) conducted a longitudinal study for a year to assess OGM and depressive symptoms at baseline and follow-up. The results conclusively provided evidence to the fact that adolescents diagnosed with depression at baseline showed a clear OGM bias compared to adolescents not diagnosed with depression or diagnosed with disorders within the anxiety spectrum disorders or other externalising disorders (ADHD, Conduct disorder etc.). In the follow-up, it was observed that adolescents that eventually developed depression displayed OGM to negative cues at the onset of depressive symptoms and no other disorder.

Research has been directed towards OGM with regards to depression specifically to draw attention towards cognitive vulnerabilities that were once outlined in Beck's Cognitive Model; wherein it was proposed that the two main identifying markers within this model allow us to determine the onset of depressive symptoms, depressogenic schemas and depressive cognitions. The latter is responsible for a propensity towards negative recall of memories as opposed to positive, this negative bias is regardless of whether depressed patients have experienced higher negative events than individuals not diagnosed with depression. The importance of such a finding in research related to OGM and depression was delineated by an investigation of autobiographical memory done by Williams & Scott (1988) which has displayed that in a comparison of controls and depressed individuals, the latter were more likely to respond to prompted words that are emotionally intoned by providing an overgeneral autobiographical memory as opposed to a specific memory surrounding them, this finding is associated with the aforementioned model in terms of identifying this tendency of resorting to overgenerality being much more pronounced for cue words that are positive, which in turn is partially responsible for the extensive delay in recall of positive memories. In a similar study on a sample of 195 African American girls aged 11 and 12 years, by Hipwell, A. E., et al (2011) to substantiate the association between OGM and vulnerability to depressive symptom markers, especially as an onset in adolescence while controlling variables such as race, poverty etc. It was noted that autobiographical memory recall of positive cues as opposed to negative was overgeneral and unspecified.

Therefore, it is indisputable how these two variables are linked and why a vast amount of depression-related research must be directed towards ascertaining these cognitive markers and developing and instating interventions based on an educated prognosis of depressive symptoms.

### ***Autobiographical Memory***

*“Autobiographical memories include specific episodic memories of past events and more conceptual, self-relevant information”* -(Williams et al. 2007; Williams and Broadbent 1986). (“Rumination and Overgeneral Autobiographical Memory in ...”)

The term autobiography is self-explanatory in that it implies an individual's account of the course of their life, the events that have occurred and shaped their identity over time, by the individual themselves. Therefore, when discussing autobiographical memories in the same vein, we can define it as a part of the individual's system that involves the integrated memories of their past and current experiences that shape the individual's overarching account of their life. It is believed that AM is the ability to derive perspective from self-schemas and enhance interpretation of real-life situations while evaluating scenarios that revolve around the self, others related to the self and across time. This construct of memory moves past the retrieval of experienced events and considers how various situations in life interact with the individual to shape their life history/story. Therefore, “autobiographical

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memory is the memory of the self, interacting with others in the service of both short-term and long-term goals that define our being and our purpose in the world.” (“Collective narratives, false memories, and the origins of ...”) (Conway et al. 2004). It is evident that the self and AM are intricately linked, and the AM processing and retrieval has characteristic features of a lack of specificity and an impaired episodic AM amongst depressed individuals. Lemogne, C., et al (2006) studied 21 inpatients diagnosed with depression and a similar number of controls. Each participant was expected to complete an episodic AM task that measured specificity with regards to positive and negative emotions, auto-noetic consciousness (an understanding of oneself and one’s reaction to simulated situations either in the present or the future, therefore, an understanding of oneself) and self-perspective. Results suggested that a global episodic AM impairment of positive memory retrieval and its specificity is reduced in depression along with auto-noetic consciousness and self-perspective.

Although the terms episodic memory and autobiographical memory are used interchangeably, there is a clear distinction between the two and within the context of this paper, it is important to establish this difference. According to a definition by Tulving (2002) episodic memory conflates two separate components one deals with the specificity of an event with regards to the following queries- what, when and where, i.e., the memory of an event that has already occurred in the past at a particular place and time. The second is auto-noetic awareness which deals with explaining a concept that specifically revolves around the lines of self-mental time-travel, which explains subjective time and an individual’s sense of self. This component deals with establishing the individual as a self-aware experiencer of an event, remembering it, and piecing together all this information to develop their personal history. Fivush, R. (2010) contends with this definition and creates a distinction along the lines of Tulving’s definition stating that the first component occurs across species and irrespective of auto-noetic awareness, therefore, episodic memory is limited to piecing together singular events of the past that allows an individual to place themselves in recurring situations and learn. Contrarily, autobiographical memory is when the individual is aware of the experience pieced together in the episodic memory which involves extremely specific events of the past. Where episodic memory is the memory of single events in the past, autobiographical memory pieces these events or the series of events together as a whole to develop the overarching life narrative. Lastly, episodic memory is responsible for acting as a guide and directing current behaviour based on past experiences and autobiographical memory is involved in developing a sense of self, self-regulation, self-in-relation along with abetting the learning episodic memory provides within a social and emotional context. (Bluck & Alea 2002, Fivush 1988, Fivush et al. 2003, Pillemer 1998). (“The Development of Autobiographical Memory”)

Therefore, what we glean from the definitions is, that autobiographical memory is a facet within memory systems of humans which is primarily concerned with recollecting past events experienced personally, it is essential and central to the functioning of this memory system and contributes extensively to an individual’s sense of self, their ability to maintain an oriented goal pursuit efficiently especially in view of past problem-solving techniques. “Such orientation and goal pursuit are particularly important for interpersonal goals, where autobiographical memory arises from and then, in turn, contributes to a shared social world.” (“Autobiographical Memory Specificity and Emotional Disorder”) (Conway & Pleydell-Pearce, 2000; Nelson & Fivush, 2000).

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### ***Overgeneral Autobiographical Memory***

Overgeneral as the term suggests directly contrasts the term 'specific', therefore, when accompanied by the term autobiographical memory, implies the propensity towards recall of categorical events as opposed to precise and distinct instances from one's life, it is a putative marker of vulnerability in depression which is usually seen to develop in early childhood although the onset of early depression is purported to be in adolescence especially amongst girls. It is only with recent research into overgeneral autobiographical memory that such a specific cognitive style has been associated with MDD and new research on onset and identification of predispositions have been set in place. An overgeneral memory could be a memory along the lines of a general liking towards something e.g., "Swimming makes me happy", as opposed to a specific memory which would be e.g., "When I last swam on Saturday, I felt happy".

An abundance of studies has revealed the tendency of recall with regards to specific events from the past usually leads to retrieval of an inordinate amount of OGM amongst individuals diagnosed with MDD as compared to their non-depressed counterparts (Goddard, Dritschel, & Burton, 1996; Kuyken & Dalgleish, 1995; van Vreeswijk & de Wilde, 2004; J. M. G. Williams et al., 2007).

Van Vreeswijk, M. F., & De Wilde, E. J. (2004) conducted a meta-analysis of fourteen case studies to evaluate specificity recall of overgeneral memories in psychiatric and non-psychiatric samples. Upon reviewing these studies, a Spearman rho correlation shows that significant differences in specific positive memories between the clinical and non-clinical sample have low depression scores whereas significant differences in negative overgeneral memories also tend to display significant differences in depression scores amongst the two samples. Therefore, the notion that AMT scores are manipulated by depression scores holds true regardless of a negative or positive cue.

Research believes that for depressive symptoms in adolescence that were specifically initiated by stressful life events, the factors that most make the adolescent vulnerable are overgeneral autobiographical memory and rumination. Based on this hypothesis, Hamlat, E. J., et al (2015) conducted a longitudinal study on 160 adolescents. At baseline three tests were conducted, one to check the status of their current depressive symptoms, the nature of their autobiographical memories, especially the specificity of said memories and rumination. 9 months later their depressive symptoms and a record of their stressful life events that had occurred from the baseline up to the follow-up was evaluated, it was observed that depressive symptoms due to stressful life events drastically increased amongst girls with a predisposition to OGM and rumination.

Compelling evidence supports memory impairment predicting depression especially including AM impairment (Burt, Zembar, & Niederehe, 1995). Previous research has claimed that "AM retrieval in depression is characterized by overgenerality, a tendency to recall repeated events (occurring more than one time) or extended events (lasting more than 1 day) rather than specific events" (Williams, 1996). The nature of overgenerality is persistent and lasting over time, it is sturdy and maintains stability, which is related to poor short-term prognosis, (Brittlebank, Scott, Williams, & Ferrier, 1993). With recent research, it has become an objective to reduce OGM and lower the chances of a relapse into depression, with treatment interventions such as cognitive behavioural therapy which often incorporates mindfulness techniques.

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Keeping the general idea of OGM conferring risks in the development of depression in mind Stange, J. P., et al (2013) conducted another longitudinal study to review this along with the added variable of environmental stressors surrounding adolescents. 174 seventh graders were evaluated for OGM and familial emotional abuse to understand the interaction of these two variables in the development of depressive symptoms over a period of 8 months. This paper concluded that the nature of the relationship that exists between these two variables and exacerbates the risk for depression is cognitive vulnerability-stress.

Sumner, J. A., et al (2011) investigated OGM and its interaction with interpersonal stress and its impact on the development or course of depression. They conducted a longitudinal study on fifty-five adolescents with a history of major and minor depressive disorder and administered the Autobiographical Memory Test and conducted follow-ups over a 16-month period. It was observed that when the memories reduced in specificity over time the risk for MDE increased especially when combined with higher interpersonal stress that was measured with UCLA Life Stress Interview.

### ***Major depressive disorder***

Depression also known as major depressive disorder (MDD), or clinical depression is a mood disorder that is extremely common and severe. Individuals diagnosed with depression undergo consistent unrelenting feelings of sorrow, loss of interest in activities that were previously enjoyed, loss of purpose and hope. Apart from the emotional problems faced, symptoms of depression can extend to the physical being and disrupt the digestive system, lead to chronic pains in parts of the body and its lasting effect can impair functioning in work and social life. To be diagnosed with depressive symptoms mentioned in DSM-V these symptoms must persist for at least 2 weeks.

### ***Depression DSM-5 Diagnostic Criteria:***

DSM-5 provides an outline of the criteria that must be met to make a diagnosis of depression. The individual must be experiencing five or more symptoms within the 2-week period and exhibit at least one of the following symptoms of 1) depressed mood or (2) loss of interest or pleasure.

1. For nearly every single day and the entirety of the day a depressed (despondent) mood must persist.
2. For most of the day and nearly every single day a noticeable/marked decline in interest/pleasure in all, or almost all, activities most of the day must be observed.
3. Nearly every day a marked decrease/increase in appetite is seen which contributes to a consequential/significant loss/ gain in weight when not dieting.
4. A reduction in thought and physical movement (objective slackening that is observed by others and is not limited to self-evaluation/ subjective feelings).
5. Exhaustion, fatigue, loss of energy nearly every day.
6. Persistently feeling worthless, inconsequential, and experiencing an excessive and inappropriate amount of guilt almost every day.
7. The ability to think and concentrate reduces significantly, and a sense of ambivalence/indecisiveness sets in.
8. Recurrent ideation of death and suicide without any concrete plans, or an attempt at suicide or creating an elaborate plan to commit suicide.

To receive a diagnosis of depression, these symptoms must cause the individual clinically significant distress or impairment in social, occupational, or other important areas of

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functioning. The symptoms must also not be a result of substance abuse or another medical condition.

MDD has a high mortality rate due to its association with suicide, it is important to be on the lookout for signs of suicidal ideation and take statements even vaguely insinuating suicide seriously. Other additional or associated features for MDD are phobias, distress leading to irritability, anxiety, deterioration in physical health.

### ***Beck's Cognitive Model of Depression (1967)***

Within this paper's context, it is important to highlight Beck's Cognitive Model of Depression, as was earlier mentioned depressogenic schemas aid OGM which predisposes an individual towards depression. Aaron Beck was a cognitive theorist who investigated a group of people diagnosed with depression and detected three mechanisms that could attribute to depression:

1. The Cognitive Triad of negative automatic thinking
2. Negative self-schemas
3. Errors in logic i.e., errors in processing information.

The triad accounts for three forms of negative thought processes which are typically seen in individuals with depression and pertaining to their view of self, the world around them in general and their future. These thoughts were termed as automatic as they were spontaneously observed in all participants that Beck studied. When these three components interact with each other there is an overall interference in cognitive tasks.

Beck noticed a predisposition to negative self-schemas, wherein most of their thoughts are pessimistic and their expectations and beliefs are negative. Certain strenuous experiences make the individual partial to symptoms of depression by virtue of this developing negative self-schema. Due to this development of schemas individuals make logical fallacies in their thinking, directing their focus to selective aspects of a situation and in turn creating errors in memory retrieval.

Aligning with the core tenets of this model, Dalgleish, T., & Werner-Seidler, A. (2014) reviewed four main problem areas or disruptions in the processing of autobiographical memory in depression and how it is maintained and represented during depression. The core concept upon which their paper relies is the idea that individuals diagnosed with depression remember the past much differently from individuals who are not. Therefore, their review paper extends the understanding of how autobiographical memory is compromised and how the four disruptions continuously interact to maintain depressive episodes and create further vulnerabilities during newer episodes in remission. These four vulnerabilities are negative memories recollection biases, poor access to positive memories, maladjusted rumination processing and the inability or reduction in access to specificity in personal past/ OGM.

### ***Overview of overgeneral autobiographical memory in depression***

There is ample evidence to support studying OGM as a cogent vulnerability factor in studies dealing with depression. First, evidence points to the consistency and duration of OGM as lasting well into remission and persisting. (Brittlebank et al., 1993; Mackinger, Loschin, & Leibetseder, 2000; Park et al., 2002). ("Overgeneral Autobiographical Memory as Depression ...") Most studies have worked to understand how OGM predicts a vulnerability in depression, Hermans, D., et al (2008) conducted a study to investigate whether an

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understanding of this reduced specificity can be used to predict and delineate the clinical status at follow-up. Patients admitted upon criteria for MDD being fulfilled were evaluated and then retested after a few weeks. The low levels of specificity and increased categorical memories were associated with a high probability of continuing diagnosis in MDD.

Second, when clinical groups of suicidal and depressed individuals are observed, the presence of OGM has consistently shown poor prognoses, even though the severity of depression has no correlation with it.

Adaptive coping is essential as an intervention for depression, wherein an individual takes effort, usually behavioural and cognitive, to govern stressful situations. The last and significant role that OGM plays in maintaining depression vulnerability is in its association with accompanying characteristics that debilitate this coping, leading to depression.

“Depressed individuals who report more overgeneral memories tend to suffer more from intrusive thoughts,” (Brewin, Reynolds, & Tata, 1999), even though the symptoms of depression may not be severe. They are also likely to display deficits while describing counterfactual events in the future and have extremely poor interpersonal tasks on problem-solving.

In a research paper by Whalley, M. G., Rugg, M. D., & Brewin, C. R. (2012) emphasis was drawn towards the neural correlates in the processing of autobiographical memory amongst controlled and depressed participants. An fMRI was used to assess the participants while conducting an autobiographical memory task. To assess the 3 alterations in AM functioning i.e., overgenerality, intrusive thoughts and memories and mood-congruent recall, 3 specific regions in the prefrontal cortex were identified with regards to cognitive, emotional and memory inhibition which showed markedly reduced activity in the depressed group.

Although initial studies in this field expressed the functionality of OGM in terms of a process that acts in self-preservation, it is expected to attenuate emotional experiences as short-term relief from experiencing painful emotions but with additional maladjustments in a long-term setting especially while experiencing life problems. A study by Raes, Hermans, de Decker, Williams, and Eelen (2003) discovered that participants that displayed more OGM were less disturbed during a test that manipulated their frustration immediately after checking the specificity of their AM as opposed to their more specific equivalents whereas recent studies have conducted and examined longitudinal tests to ascertain this adjustment and have noted poor prognoses for depression and an evaluative review by Moore, S. A., & Zoellner, L. A. (2007) assessed trauma exposure and its relationship with overgenerality across 24 case studies. The theory this notion is based on was also the belief that overgenerality is a mechanism that acts as self-preservation by attenuating painful memories especially those associated with trauma. The studies ranged from samples of PTSD, traumatic event exposure, acute stress, depression, and other clinical disorders. The results decisively stated that trauma exposure is an unlikely cause for overgenerality, while disorders with psychopathological features such as depression and PTSD have been consistently seen to associate with overgenerality, this research provides further evidence for the OGM and depression vulnerability.

Utilising a prospective design Anderson, R. J., Goddard, L., & Powell, J. H. (2010) investigated the role of autobiographical memory as that of a moderator in the association between life stressors and depression in a non-clinical college sample. It was noted that

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enhanced predisposition towards categoric recall as a subset of AM performance surfaced as a factor for susceptibility to depressive symptoms not dependent on life stress whereas reduced specificity functioned as both a vulnerability and a moderator between daily life stress and depression.

### *Purpose*

The purpose of the study is to assess the reduction of specificity in autobiographical memory and its effects on self-reported depression amongst non-clinical participants.

### *Hypothesis*

1. There will be significant positive correlation between reduced specificity in autobiographical memory and self-reported depression diagnosed in participants.
2. There will be significant positive correlation in overgeneral recall of memories with positively valenced cue words.
3. There will be no correlation between overgeneral recall of memories and old age.
4. There will be no significant gender related differences in overgeneral recall of autobiographical memory.

## METHODOLOGY

### *Sample*

A total of 102 adults (from a non-clinical setting) from across Jharkhand, West-Bengal and Delhi-NCR participated in the study, the age range of the participants was 20-60.

### *Measure*

- **Beck's Depression Inventory:** The BDI was developed by Beck, Ward, Mendelson, Mock, & Erbaugh, (1961) to measure depressive symptomatology with the help of a 21-item self-report over the previous week. The inventory is a scale with 21 items the severity of which ranges from 0-3. A higher score is indicative of more depressive symptomatology. The BDI demonstrates high internal consistency with alpha coefficients ranging from .73 to .92. ("Social Problem-Solving and Depressive Symptom ...") It also has good test-retest reliability correlations ( $r=.75$ ) after one week (Beck, Steer, & Garbin, 1988).
- **Autobiographical Memory Test:** The Autobiographical Memory Test by Williams and Broadbent (1986) was administered orally to each participant over call and required them to retrieve specific cue words following the procedure given by Williams et al. Participants were provided instructions along with what autobiographical memory entails, they were given two examples one of a specific memory and one with the cue word- 'relieved'. They were told to recall a memory on a specific day in their past that had occurred at least a week ago. Thirteen cue words (5 positives, 5 negatives, 3 neutral) were provided with the intention of retrieving specific memories within 60 seconds. In the modified AMT research conducted by Hamlat et al., three neutral cue words were also used to gauge whether the recall of OGM in depression was specific to emotionally valenced cue words. This selection was based on earlier research to show low emotionality with the given words, they were as follows- search, huge, nature, similarly based on previous research, five positive and negative cue words were selected based on their high ratings of emotionality- Happy, Safe, Interested, Successful, Surprised and Sorry, Angry, Clumsy, Hurt and Lonely, respectively. For each cue word the participant was asked to recall a memory of a particular day or situation with regards to the cue word and



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each memory had to differ. All memories are coded on the level of their specificity, this distinction is measured accordingly: when memories span over a second, minutes, hours, or less than 24 hours, (e.g., My graduation day)- Specific Memories. Memories were coded as Extended when they lasted over a prolonged period (e.g., when I was in college). Categorical memories were coded when the memories were classified into certain brackets, classes, categories etc. such as certain activities, people etc. (e.g., every outing with my brother). Memories that were general semantic knowledge were coded as Semantic Associates (e.g., My dog checkers). Memories that were from within a week, repeated or omitted were coded as No Response/Omission.

### Procedure

The purpose of the research along with the nature of participation was explained by the researcher prior to conduction, measures were taken to maintain confidentiality and participants were assured of the same. Standardised tests were administered through google forms keeping the formats intact. For the AMT, participants were interviewed over the phone keeping Covid-19 protocols in mind, the instructions for the same were provided. They were addressed by the pseudonyms of their choice and were asked to answer for each cue word within 60 seconds and were timed accordingly. Participants were later thanked for their cooperation. Responses by each participant was individually assessed for the kind of memory associated and divided according to the earlier mentioned variables.

## RESULTS

Data collected, was analysed using SPSS and the responses were examined using independent sample t-test to assess the difference in specificity and overgenerality of autobiographical memory between individuals with self-reported depression and individuals with minimal depression. Table 1 depicts N, mean and standard deviation. Table 2 shows the correlation between depression and overgeneral memory and Table 3 shows correlation between all variables.

*Table 1: N, mean and standard deviation*

	N	Minimum	Maximum	Mean	Std. Deviation
DEPRESSION SCORES TOTAL	102	0	38	13.61	9.733
SPECIFIC	102	0	13	6.47	3.806
OGM	102	0	13	6.54	3.804
Categoric	102	0	7	2.52	1.881
Extended	102	0	7	2.37	1.888
Semantic Associate	102	0	6	1.24	1.436
Omission	102	0	3	.41	.736
Valid N (listwise)	102				

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**Table 2: Independent Samples t-test**

		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OGM	Equal variances assumed	13.872	.000	9.727	100	.000	5.40565	.55572	4.30311	6.50818
	Equal variances not assumed			10.738	99.810	.000	5.40565	.50343	4.40684	6.40445
SPECIFIC	Equal variances assumed	13.298	.000	-9.770	100	.000	-5.42177	.55492	-6.52271	-4.32084
	Equal variances not assumed			-10.782	99.825	.000	-5.42177	.50286	-6.41945	-4.42410

**Table 3: Correlation of all variables**

		DEPRESSION SCORES TOTAL	SPECIFIC	OGM	Categoric	Extended	Semantic Associate	Omission
DEPRESSION SCORES TOTAL	Pearson Correlation	1	-.692**	.689**	.416**	.436**	.547**	.307**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.002
	N	102	102	102	102	102	102	102
SPECIFIC	Pearson Correlation	-.692**	1	1.000**	-.679**	-.761**	-.651**	-.211*
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.033
	N	102	102	102	102	102	102	102
OGM	Pearson Correlation	.689**	-1.000**	1	.681**	.758**	.651**	.213*
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.031
	N	102	102	102	102	102	102	102
Categoric	Pearson Correlation	.416**	-.679**	.681**	1	.268**	.130	.023
	Sig. (2-tailed)	.000	.000	.000	.000	.006	.192	.821
	N	102	102	102	102	102	102	102
Extended	Pearson Correlation	.436**	-.761**	.758**	.268**	1	.376**	-.069
	Sig. (2-tailed)	.000	.000	.000	.006	.000	.000	.492
	N	102	102	102	102	102	102	102
Semantic Associate	Pearson Correlation	.547**	-.651**	.651**	.130	.376**	1	.114
	Sig. (2-tailed)	.000	.000	.000	.192	.000	.000	.256
	N	102	102	102	102	102	102	102
Omission	Pearson Correlation	.307**	-.211*	.213*	.023	-.069	.114	1
	Sig. (2-tailed)	.002	.033	.031	.821	.492	.256	
	N	102	102	102	102	102	102	102

### DISCUSSION

The aim of this paper was to illustrate the level of specificity in the recall of autobiographical memory amongst a group of participants that were divided on the basis of their scores in the Beck's Depression Inventory-II, into self-reported depression and minimal depression. It was hypothesised that overgenerality in recall is seen highly amongst individuals diagnosed with depression, this paper is one of a few conducted on non-clinical participants, therefore, the scores for depression were all self-reported. The results of this particular study conclusively display a negative correlation between depression scores and specificity in autobiographical memory ( $r=-.692$ ) and positive correlation between depression scores and overgeneral memory (OGM). Therefore, the hypothesis that overgeneral autobiographical memory is correlated with depression is found to be true and significant and specificity is negatively correlated, therefore, increased depression scores can justify higher overgeneral memory recall and reduced specificity in the recall of memory. Results also found that individuals with self-reported depression differ significantly from individuals with minimal depression during the recall of specific autobiographical memory ( $t=-9.770$ ) and overgeneral autobiographical memory ( $t=9.772$ ). The AMT is scored on the

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basis of specific memory recall therefore, OGM is a sum of categoric, extended, semantic associate recall along with omitted answers, which explains the positive correlation with depression scores. No significant correlation was found between positively valanced cue words and OGM despite researches such as work by Teasdale & Fogarty (1979) on non-clinical samples of college students showing, that in depressed moods as opposed to elevated moods recall of positive memories is significantly reduced. The overgeneral recall of memory with age does not show significant differences as was stated in the hypothesis but it is also likely that due to the lack of controlling of comorbid disorders the results may not be accurate as seen in most studies that do the above. The hypothesis stating differences in gender not contributing to OGM also holds true.

### CONCLUSION

Studies related to memory impairments with regards to depression have all stated that recall of autobiographical memory is marked by retrieval of events that have occurred multiple times or over a period of time, instead of being specific, according to Brittlebank (1993) a specific event is any event that has occurred within 24 hours, it has been proven through studies that overgenerality is persistent and stable which increases chances of relapse in depression. The following study emphasises this relationship and the reduced specificity in autobiographical memory can be attributed to predictions of vulnerabilities to depression by specifically conducting tests to highlight pre and post test scores. This test was conducted on a non-clinical sample and is the first of its kind within such a socio-cultural background, therefore, it barely scratches the surface of variables that can be taken into consideration for future studies but surely initiates the discourse on future works that can undertake similar routes. It must also be noted that reduced specificity in AMT has predicted the likelihood of depression in other non-clinical samples and therefore, introduction of similar measures can establish better prognosis for depression within similar samples in the future.

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### Acknowledgement

I would like to thank my supervisors at Ascend Psycare for their unwavering support, patience, encouragement, passion, and immense knowledge. Their expertise was paramount in generating a structure for the paper as well as identifying the key research techniques undertaken in the paper. Without their help, the final product would have been extremely lacking. Aside from my supervisors, I'd like to thank everyone who took part in the study and contributed to make the research process run smoothly.

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***Conflict of Interest***

No potential conflict of interest was reported by the author.

***How to cite this article:*** Chatteraj T. (2022). Overgeneral Autobiographical Memory and Depression: A Study on Reduced Specificity in Autobiographical Memory and Vulnerabilities in Depression. *International Journal of Indian Psychology*, 10(1), 610-622. DIP:18.01.061.20221001, DOI:10.25215/1001.061