

Role of Self-Defining Autobiographical Memories in Major Depressive Disorder: An Exploratory Study

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ABSTRACT

Aims/Objectives: The current study intended to explore the differences between two types of autobiographical memories, self-defining (SDM) and non-self-defining (NSDM), with reference to the phenomenological dimensions, age at incident, and personal significance of the memories across two groups of middle-aged adults (40-50 years of age) (N=10 in each group): (a) persons with Major Depressive Disorder (MDD), and (b) their matched healthy counterparts (HC).

Methods: The sample was obtained through convenience method, participants being screened with the help of General Health Questionnaire-28 and Beck Depression Inventory-II, followed by eliciting SDMs and NSDMs, three of each type, from any period of their lives, and to rating each of the memories on 10 phenomenological dimensions (in Memory Experiences Questionnaire-Short Form) and personal significance of the memories, mentioning the age at incident.

Results: Statistical analyses revealed significant difference in different phenomenological characteristics across the two types of memories (SDM and NSDM) as well as the two groups (MDD and HC). However, age at incident and personal significance were found to differ significantly across types of memories, but not across groups. Further, significant interaction effect was observed with respect to visual perspective and personal significance of memories. The present study, thus, delineates how the persons with MDD differ from healthy individuals in remembering their life events and embedding those into their selfhood.

Keywords: *Autobiographical memories, Self-defining memories, Phenomenological characteristics, Major Depressive Disorder*

INTRODUCTION

An individual's sense of identity is commonly assumed to be intimately connected to their memories of their own life, known as autobiographical memories. Brewer (1996) defines autobiographical memory as a memory for information related to self. However, remembering an event from one's life involves mentally reconstructing past experiences by reintegrating information from various sources (e.g., perceptual, contextual, semantic, emotional details) (D'Armentano, Raffard & van der Linden et al, 2008).

Autobiographical memory and the self are two global psychological constructs, interacting, shaping, delimiting and reconstructing each other (Conway et al., 2004). A Self Memory System (SMS), as proposed by Conway and Pleydell-Pearce (2000), constitutes two chief components: the long-term self, and the episodic memory system. While the former includes all the information about the self, consisting of the autobiographical knowledge base that hierarchically organizes factual knowledge of one's experiences, and the conceptual self, comprising self-schemas and beliefs, values, attitudes that are shaped by sociocultural factors, the latter contributes to the feeling of reliving of an event specific knowledge. It is the working self that brings the two components together, on the basis of a hierarchy of goals and sub-goals that are retrieved from the conceptual self. (Conway, Singer & Tagini, 2004).

Pillemer (2001) attempted to conceptualize a personal event memory as the episodic memory of a specific event with a particular temporal and spatial occurrence, and emotional

association, that results in evoking some sensory imagery and the feeling of reliving the event.

Singer and his colleagues proposed that certain structural characteristics of autobiographical memories increase their impact on personality (Singer & Moffit, 1991-92; Singer & Salovey, 1993). They called this class of memories as "self-defining memory (SDM)", and defined it as a vivid autobiographical memory which is affectively intense, linked to other similar memories, repetitively recalled, and relevant to one's enduring concerns or conflicts (Blagov & Singer, 2004). Being associated to multiple similar memories, this type of memory is easy to recall when prompted by appropriate external or internal cues. The presence of intense goal-relevant information in these memories also make them elicit stronger emotions. In essence, an SDM is characterized by a rich phenomenology as well as by a greater personal significance.

The role played by the phenomenology of autobiographical memory in many clinical disorders, though scarcely studied, previous literature suggests that autobiographical memories, especially SDMs, are found to be deeply affected by the history of depression (Williams et al., 2004, 2000).

There is a remarkable gap in the literature, created by the lack of comparative studies between the characteristics of self-defining and non-self-defining memories. Also, very few studies examining self-defining memories in depression investigated underlying concerns related to depression. The present study attempted to bridge the gap

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by comparing the profiles of the two types of autobiographical memories: self-defining memories (SDM) and non-self-defining memories (NSDM), across two groups of middle-aged adults with and without diagnosis of Major Depressive Disorder (MDD).

METHODS

Aims

The aim of the present study was to investigate the differences between SDM and NSDM with respect to different dimensions of autobiographical memories in persons with MDD and healthy controls (HC).

Objectives

1. To compare SDMs and NSDMs with respect to their ratings on 10 different phenomenological characteristics of autobiographical memory, a) vividness b) coherence, c) accessibility, d) time perspective, e) visual perspective, f) sensory details, g) emotional intensity, h) sharing, i) distancing, and j) emotional valence.
2. To compare SDMs and NSDMs with respect to (a) age of participants at the incidents described in the memories and (b) personal significance of memories.
3. To compare the SDMs and NSDMs of participants diagnosed with and currently under therapy for MDD with those of a matched HC group having no history of MDD with respect to the above-mentioned dimensions.

Hypotheses

We hypothesized that SDMs would be phenomenologically more vivid, coherent, accessible, sensorially detailed, experienced from 1st person perspective, emotionally intense, and more shared, personally significant, and events occurring at a relatively higher age than NSDMs. We also hypothesized that the phenomenological characteristics and personal significance of autobiographical memories would be different for persons with MDD, and the SDMs would be more significant for the HC individuals than those with MDD.

Participants

10 participants diagnosed by experienced psychiatrists with MDD who were undergoing psychotherapy under the supervision of trained clinical psychologists for a minimum of one to a maximum of six months comprised the MDD group, having no other comorbid psychological disorders. All of them were outpatients in the Department of Psychology, University of Calcutta, and the Clinical Psychology Center of University of Calcutta, and were contacted through their respective consultant clinical psychologists.

The HC group consisted of 10 participants without reported history of any psychological disorders. They were matched for age, sex and socioeconomic status with the MDD group. The participants were screened for presence of psychiatric disorders and subjective distress with the help of the General Health Questionnaire-28 (GHQ-28) and the Beck Depression Inventory-II (BDI-II) respectively. The inclusion criteria for the MDD group were a score of 4 or more on the former and that of 20 or more on the latter, while the same for the HC group were a score of less than 4 on the former and that of less than 13 on the latter. The

detailed sociodemographic profiles of the participants are given in Table 1.

Table 1. Sociodemographic Profiles of the Participants

	Total Sample	MDD Group	HC Group	Value of Appropriate Test Statistic	p-value
Cases [n(%)]	20	10(50)	10(50)		
No. of Male Participants [n(%)]	6	3(15)	3(15)		
Age [M(SD)]	45.05 (2.91)	45.2 (2.97)	44.9 (3.00)	0.23 ^a	>0.05
Educational Qualification					
Higher Secondary Level	7	4	3	0.48 ^b	>0.05
Graduate	10	5	5		
Post Graduate	3	1	2		
Relationship Status					
Unmarried	1	0	1	0.00 ^b	>0.05
Married	18	9	9		
Widowed	1	1	0		
Nature of Family					
Nuclear	15	7	8	0.40 ^b	>0.05
Joint	2	1	1		
Extended	3	2	1		
No. of Children					
None	4	3	1	1.29 ^b	>0.05
One	14	6	8		
Two	2	1	1		
Occupational Status					
Non-working	7	4	3	0.34 ^b	>0.05
Service	8	4	4		
Self-Employed	5	2	3		
Total SES Index Score¹ [M(SD)]	21.45 (1.93)	21.6 (1.96)	21.3 (2.00)	0.34 ^a	>0.05
History of Significant Event in Last 5 Years					
Reported	4	3	1	1.25 ^b	>0.05
Not reported	16	7	9		
History of Significant Physical Illness					
Reported	1	0	1	0.00 ^b	>0.05
Not reported	19	10	9		
History of Any Psychological Disorder					
Reported	10	10	0	12.8 ^b	<0.05
Not reported	10	0	10		
GHQ Score	8.15 (5.15)	13.9 (2.28)	2.40 (1.07)	14.41 ^a	<0.01
BDI-II Score	16.15 (12.44)	28.10 (2.69)	4.2 (1.55)	21.38 ^a	<0.01

MDD= Major Depressive Disorder

¹Computed following the latest revision of Kuppaswamy's Socio-Economic Status Scale (Sharma, 2017)

n=No. of individuals; M=Mean; SD=Standard Deviation

^aIndependent Samples t-test, ^b Pearson's Chi Square Test

Measures

Information Schedule

The Information Schedule was used to know the basic demographic details of the participants, like age, sex, relationship status, employment status, number of children, monthly family income, history of any significant life event in the last five years, history of any significant physical illness, and history of any psychological illness (along with the year of diagnosis and the duration of treatment).

General Health Questionnaire-28

The General Health Questionnaire-28 (GHQ-28), developed by Goldberg (1978) is a screener tool used to detect probable non-psychotic psychiatric disorder in community settings, comprising of four subscales: somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression. It can be scored on a binary scale, with a cutoff score of 4 (Sterling, 2011). The GHQ-28 has been found to have high test-retest reliability (0.78 to 0.9) (Robinson and Price, 1982), excellent interrater and intrarater reliability (Cronbach's α 0.9–0.95) (Failde and Ramos, 2000), and high internal consistency (Failde and Ramos, 2000). It also correlates well with the Hospital Anxiety and Depression Scale (Sakakibara et al., 2009) and other measures of depression (Robinson and Price, 1982).

Beck Depression Inventory-II

The Beck Depression Inventory Second Edition (BDI-II) is a 21-item self-report inventory, intended to assess the presence and severity of cognitive-affective and somatic-vegetative symptoms of depression. Each item is scored on a four-point Likert scale from 0 to 3, with higher total scores representing greater depression severity. The scale has a high internal consistency, with Cronbach's α of about 0.92 for outpatients and 0.93 for college students, along with high test-retest (administered 1 week apart) reliability of 0.93 (Beck, Steer & Brown, 1996).

Request for Autobiographical Memories

• Request for Self-Defining Memories

The request for SDMs was the one used by Sutin and Robins (2007) in Memory Experiences Questionnaire that was adapted from Moffit and Singer's Instructions for the Self-Defining Memory Request (Singer & Moffit, 1991-92), as follows:

"Please describe a memory that is personally meaningful to you. It can be either positive or negative, but it should convey the most important experience you have had that helps you to understand who you are and how you arrived at your current identity. It may be a memory about any kind of experience, but it should be something you have thought about many times and is still important to you, even as you are recalling it now. Please describe the memory in detail: what happened and when, whom you were with (if anyone), and how you felt or reacted."

Please describe two other such memories.

• Request for Non-Self-Defining Memories

The request for NSDMs was generated by the researcher adapting it from Moffit and Singer's Instructions for the

Autobiographical Memory Request (Singer & Moffit, 1991-92), as follows:

Now please describe another memory of your life which you yourself was a part of. It can be either positive or negative. It should convey an important experience you have had but not necessarily helps you to understand who you are or how you arrived at your current identity. It may be a memory about any kind of experience, but it should be something you have thought about many times. Please describe the memory in detail: what happened and when, whom you were with (if anyone), and how you felt or reacted.

Please describe two other such memories.

Memory Experiences Questionnaire-Short Form (MEQ-SF)

Luchetti and Sutin (2016) developed a short form for developed a psychometrically sound instrument, Memory Experiences Questionnaire (MEQ) (Sutin and Robins, 2007), to use in case of eliciting several memories from the same individual within limited time, and also to conduct research on specific populations where literacy, attention and cognition are limited. It includes 31 items across 10 phenomenological dimensions (*vividness, coherence, accessibility, time perspective, sensory details, visual perspective, emotional intensity, sharing, distancing, and valence*) of autobiographical memories.

Each scale showed acceptable internal consistency (median α = .79), along with high correlation with its corresponding long-form scale (median r = .95) (Luchetti & Sutin, 2016).

Data Collection

Data were collected from the participants individually after getting informed consent from them, at a quiet place comfortable for them in a particular order: a) Information Schedule, b) General Health Questionnaire and Beck Depression Inventory-II (BDI-II) as screening inventories, c) Request for 3 SDMs, d) Request for 3 NSDMs (requests for SDMs and NSDMs were counterbalanced across the participants), e) Rating the 6 memories on the Memory Experiences Questionnaire-Short Form (MEQ-SF) and two supplementary statements assessing participants' age at incident and level of personal significance of the memory. For the MEQ-SF, instructions were read aloud first, followed by probing as required.

The memories recalled audio-recorded with consent of the participants. Rest of the responses were taken in pen and paper. The data collection session was followed by debriefing.

There was no limitation of time. The average time taken for collecting data from each participant was about 90 to 120 minutes, allowing for short breaks as and when required.

Scoring

The responses of each participant on each of the inventories (GHQ-28, BDI-II, and MEQ-SF) were scored by the researcher following the respective scoring manuals.

Statistical Analyses

All statistical analyses were performed using SPSS-16 after testing all for assumptions of statistics.

- **Means and standard deviations** of the scores on ten different phenomenological dimensions age at

incident, and personal significance were computed separately for SDMs and NSDMs.

- **2 X 2 Mixed Analyses of Variances (ANOVAs)** were conducted to test for the presence of significant main effects of within-group variable (SDM and NSDM) and within-group variable (MDD and HC) as well as their interaction effects with respect to various phenomenological dimensions, age at incident, and personal significance of the elicited memories.

RESULTS

Transformation of Data

Since three memories were recalled by each participant for each type of memory, the mean of the scores of each participant on a particular variable (except content, where frequencies were considered as scores) for the three memories of a type was considered as her/his score on that variable for that type of memory. This method was adopted from that employed by Moffit and Singer (Moffit & Singer, 1994).

Table 2. Means and Standard Deviations of the ratings of participants in the MDD and HC groups on the 10 phenomenological dimensions, age at incident, and personal significance of SDMs and NSDMs

	MDD Group		HC Group	
	SDM	NSDM	SDM	NSDM
	M(SD)	M(SD)	M(SD)	M(SD)
Vividness	4.12(0.46)	3.42(0.59)	4.46(0.37)	3.90(0.67)
Coherence	3.09(0.49)	3.71(0.47)	3.67(0.63)	4.11(0.36)
Accessibility	4.47(0.47)	3.21(0.83)	4.37(0.61)	3.26(0.64)
Time Perspective	3.56(0.59)	3.56(0.56)	3.77(0.65)	3.43(0.55)
Sensory Details	1.92(1.01)	1.70(0.81)	3.45(0.65)	3.07(0.73)
Visual Perspective	4.16(0.89)	2.66(0.43)	4.16(0.41)	3.64(0.69)
Emotional Intensity	3.69(1.35)	2.89(0.78)	4.11(0.59)	2.93(0.96)
Sharing	1.60(0.98)	1.65(0.61)	2.89(0.72)	2.97(0.68)
Distancing	2.27(1.15)	3.00(0.86)	2.68(0.68)	3.50(0.75)
Emotional Valence	1.80(0.80)	2.65(0.95)	2.99(0.91)	3.48(0.96)
Age at Incident	24.00 (5.16)	22.1(4.95)	28.47 (2.82)	20.30 (8.83)
Personal Significance of Memories	4.57(0.16)	2.47(0.57)	4.84(0.18)	1.77(0.57)

*N*_(Clinical)=10; *N*_(Control)=10;
 SDM= Self-Defining Memory; NSDM= Non-Self-Defining Memory
 M=Mean; SD= Standard Deviation

The values of F ratios for the main effects and interaction effects obtained from the series of 2 X 2 factorial mixed Analysis of Variance (ANOVA) conducted separately are tabulated in Table 3.

Significant main effects of type of memory were observed for the phenomenological dimensions of vividness, coherence, accessibility, visual perspective, emotional intensity, and distancing, as also for the age at incident and personal significance of the memories.

Significant main effects of group of participants were also found for the phenomenological dimensions of vividness, coherence, sensory details, visual perspective, sharing, and

emotional valence, as well as for personal significance of the memories.

Table 3. F ratios (at df=1,18) for the main effects of type of memory (SDM and NSDM) and group of participants (MDD and HC), and their interaction effects with respect to 10 phenomenological dimensions, age at incident, and personal significance. The corresponding effect sizes (partial eta squared) are given in parentheses.

	Main Effects		Interaction Effect
	Type of Memory	Group of Participants	Type of Memory* Group of Participants
Vividness	9.84* (0.353)	9.71* (0.350)	0.13 (0.007)
Coherence	9.39* (0.343)	12.02** (0.400)	1.11 (0.016)
Accessibility	29.48** (0.621)	0.02 (0.001)	0.11 (0.006)
Time Perspective	2.36 (0.116)	0.03 (0.002)	2.38 (0.117)
Sensory Details	1.60 (0.082)	27.25** (0.602)	0.12 (0.006)
Visual Perspective	37.62** (0.676)	5.59* (0.237)	9.12* (0.336)
Emotional Intensity	16.90** (0.484)	0.43 (0.023)	0.61 (0.033)
Sharing	0.14 (0.008)	20.39** (0.531)	0.01 (0.000)
Distancing	7.21* (0.286)	2.97 (0.142)	0.02 (0.001)
Emotional Valence	4.92 (0.215)	14.14** (0.440)	0.33 (0.018)
Age at Incident	7.66* (0.299)	0.50 (0.027)	2.97 (0.142)
Personal Significance	402.65** (0.957)	2.51 (0.123)	14.10** (0.439)

*N*_(Clinical)=10; *N*_(Control)=10;
 SDM= Self-Defining Memory; NSDM= Non-Self-Defining Memory
 * significant at 0.05 level of significance
 ** significant at 0.01 level of significance

Significant interaction effect was observed for the visual perspective of the memories.

The effect sizes of all the significant effects (main and interaction) were observed to be large (>0.14), according to the guidelines by Miles and Shevlin (2001).

DISCUSSION

Phenomenological Characteristics of Autobiographical Memories in Individuals Suffering from Depression

Across both types of memories, the participants with MDD rated their memories to be less vivid, impoverished in sensory details, and less coherent, compared to their HC counterparts. These findings are similar to the results obtained in earlier studies. In a study by Lolich and colleagues (2017), the group of individuals with MDD differed significantly from the control group on the numbers of visual imagery details recalled in their memories, (though not differing significantly on their intensity) and on the intensity of sensoriality irrespective of the modality involved. Luchetti and Sutin (2018) also reported an inverse relationship of loneliness and anhedonic depression with vividness and sensorial details of autobiographical memories. As Greenberg and Knowlton (2014) point, visual imagery plays a fundamental role in autobiographical

memories and in cognitive functioning in general, which is why preserving the evocative quality would offer considerable adaptive benefits. Again, sensory processing is a relevant function in the emergence of memory phenomena according to the experience-centered approaches (Holmes & Mathews, 2010). The results of the present study, further, support the studies that argue that the more specific the representation process in memory, the larger the amount of information that is accessible in an experience (Werner-Seidler & Moulds, 2011).

Overgeneralization of autobiographical memories of depressed individuals have also been reported in numerous previous studies (Luchetti, Rossi & Montebanacci, 2016; Kuyken, Howell & Dalgleish, 2006). Williams and Mathews (1996) has proposed a process that he refers to as “*mnemonic interlock*” to account for the observed data on overgeneralized memory. Williams’ model assumes that memory retrieval is a hierarchical process in which an individual first accesses a category of events and then uses the category to search for a specific exemplar (Rubin, 1996). Since the memories of depressed individuals are characterized by their more intrusion-related distress, negative emotions and interfering nature (Newby & Moulds, 2011) these individuals are more likely to develop a habitual tendency to passively avoid the “punishing consequence of recollection” of specific memories, and their searching process ends at the categorical level only, thereby resulting in overgeneralized memories. This may, therefore, be a coping strategy adopted by the persons suffering from depression. An alternative (though not mutually exclusive) explanation for overgeneralized memory is that it stems from depletion or diversion of processing resources to rumination and depression-related concerns (Rude et al., 1999)

Autobiographical memories of depressed individuals are further characterized by their being experienced from the 3rd person or “observer” perspective, a finding reported in a number of previous studies (Luchetti & Sutin, 2018; Werner-Seidler & Moulds, 2011). Previous studies revealed the influence of self-perspective on the self-relevance of the autobiographical memories (Libby & Eibach, 2002; Libby, Eibach & Gilovich; 2005). In the present study also, though the participants with MDD reported of having experienced the SDMs from the 1st person perspective as well like those in the control group, the NSDMs of the former were found to be experienced from a greater degree of 3rd person perspective than those of the latter. Therefore, it might be reflected that the memories where self is not well-represented are more likely to be seen from the observer perspective by both the depressed and non-depressed individuals, but this phenomenon is more prominent in case of the former.

While healthy subjects usually display an “observer” perspective towards their negative memories, and a “field” perspective towards the positive ones by attributing the former and the latter to an earlier different self and a current self respectively, (Libby & Eibach, 2002) depressed individuals have been found to display less “field” perspective for positive events, indicative of their possible difficulty in attributing their positive memories to their current self (Lemogne et al., 2006). This may also be a

relatively permanent cognitive style adopted by the individuals suffering from depression.

Among other purposes, the autobiographical recalls have been linked with socialization goals (Harris, Rasmussen & Bernsten, 2014). In the present study, the autobiographical memories of participants in the clinical group have been found less likely to be shared compared to those of the participants in the control group, irrespective of the type of memories. Such findings, having also been reported in previous studies (Lolich, Azzollini & Vazquez, 2017) are in line with the lack of social support characteristic of depression cases (Conway, 2005).

It is noteworthy here that all these phenomenological aspects of autobiographical memories of individuals suffering from depression are intricately related to both intensity as well as valence of the emotions associated with the memories. Unlike the previous studies reporting greater emotional intensity of the memories recalled by the depressed individuals (Lolich, Azzollini & Vazquez, 2017) the present study has not revealed any such difference in emotional intensity of memories between the clinical and control group. A possible reason accounting for such a finding may be the effect of therapy on the participants in the clinical group, that could not be controlled. However, their memories have been found to be more negatively valenced than those of the control group. This may be attributed to the negative views depressed individuals hold about themselves and the world constituting the *negative cognitive triad* (Clark, Beck & Alford, 1999).

Age at Incident of Self-Defining and Non-Self-Defining Memories in Major Depressive Disorder

Irrespective of their diagnosis of MDD, both the groups of participants reported the events in SDMs to have taken place significantly later in their lives, compared to those described in the NSDMs. This significant difference in age at incidence may be. It may also be observed that SDMs are more concentrated in the 20s of the participants, whereas NSDMs extend back in the late teens. These findings hint that the individuals must cross the threshold of a certain age for the episodes occurring in that period of their life to be strongly linked with their sense of self and identity, and encoded as SDMs, irrespective of presence of depressive features.

This further supports the evidence of *reminiscence bump* in the autobiographical memories of adults, which may be defined as the period of life, events from which, are most frequently elicited in a free recall task (Rubin, Wetzler & Nebes, 1986).

Personal Significance of Self-Defining and Non-Self-Defining Memories in Major Depressive Disorder

The participants with MDD reported their SDMs to be more personally significant than NSDMs, a trend congruent with their HC counterparts. However, it was also observed that the personal significance of SDMs was somewhat less and that of NSDMs was somewhat more in the MDD group than in the HC group. In other words, the participants with MDD were observed to have a relatively less differentiated sense of personal significance attached to the memories with

varying degrees of self-definitional aspects, compared to the control group participants.

According to Beck's cognitive theory of depression, the persons suffering from depression are characterized by dysfunctional beliefs known as *depressogenic schemas*, which are rigid, extreme, and counterproductive, which lead to the formation of the belief of an inadequate self, which is again a cognitive bias predominant in depression (Clark & Beck, 2010). Due to this cognitive bias, the individuals may consider their SDMs to testify to their negative views about themselves. But since these memories, painful for the sense of self, are not completely faded away, and are partially retained (as evident from the phenomenological characteristics), the individuals may reduce the personal significance of these memories to make them less painful.

LIMITATIONS

The present study is not beyond limitations. These are discussed as follows:

Firstly, the sample size was not adequately large to generalize the findings.

Secondly, the accuracy of the recalled memories could not be checked as no relatives/informants of the participants were interviewed. However, the focus of the present study was the memories of the events *recalled* by the participants rather than the accuracy of the actual events that had *happened*.

Thirdly, the findings may be affected to some extent by the procedural components like completing questionnaires as also by some experimenter-elicited demands in the recall of memories. Thus, the main challenge of this research was to strike a balance between the ability to maintain ecological validity and maintaining control over memory retrieval.

Fourthly, the use of antidepressant or other types of psychotropic drugs by the participants, which might have an effect on memory, could not be controlled.

Despite the research limitations, the results reached can be highly useful in further research on the theme.

IMPLICATIONS

Eliciting autobiographical memories and life stories of clients with different clinical conditions including depression being a critical aspect in the regular clinical practice (Singer et al., 2012), findings of the current study may provide valuable resources for practicing clinicians by shedding light on the role of autobiographical memory in the development and maintenance of depression, thereby contributing to a better understanding of as well as the therapeutic interventions for the same.

Scope for Further Research

The present study opens the window for a plethora of further studies on related topics. SDMs of persons with MDD may be studied with the help of qualitative paradigm to understand the role of narratives in self and autobiographical memories. Investigation of the neurocognitive basis of SDMs in MDD may also enlighten future researchers and clinicians.

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