

How to Cite:

Singhal, S., & Singh, R. (2022). Enhancing positive-affect by autobiographical method in subjects balanced on positive and negative mood. *International Journal of Health Sciences*, 6(S1), 9603–9610. <https://doi.org/10.53730/ijhs.v6nS1.7245>

Enhancing positive-affect by autobiographical method in subjects balanced on positive and negative mood

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Abstract---A physiological, cognitive and expressive activity channelized through the autonomic nervous system of the body is called affect. For many decades, researchers have been trying to induce affect experimentally. In the present research study, positive mood enhancement was experimentally done with the help of the autobiographical recall method in the sample of 160 college-going students from the Delhi-NCR region, who were balanced on positive and negative affect based on their scores of positive and negative affect on the PANAS. The mean age of the research subjects was 22.28 years (SD=2.89). All the subjects were rated on subjective mood rate, pulse rate, and oxygen saturation before and after the autobiographical recall. The significance of the difference between means of pre and postcondition on all three measures was verified by paired sample t-test. The results indicated that the mood induction method was effective which enhanced positive affect and reduced pulse rate significantly after the autobiographical recall. The differences in oxygen saturation were not beyond chance. It was verified in persons having a balance of positive and negative mood for the last one week and all were given a session of deep-breathe relaxation before the experimental intervention.

Keywords---Autobiographical Recall Method, Autobiographical Method, Subjective Mood Ratings, PANAS, Mood Induction Method.

Introduction

Emotions and mood both are coined under the umbrella term “affect”. The affect is the physiological, cognitive and expressive activity channelised through the

body's autonomic nervous system (Scherer, 2005). The formation of experiences by perceiving and evaluating events reflects certain emotions and moods (Scherer, 2005). Emotions are like state means for a very brief time and mood trait means for hours or days. Emotions are transitory and moods are stable across the period (Lischetzke & Eid, 2011). The mood is the perception of subjective experience which is expressed in the form of behaviour, body gestures, non-verbal expressions, restriction of social activities and biochemical changes in the body (Steyer, Schwenkmezger, Notz, & Eid, 1997).

The human brain structures such as the amygdala and hypothalamus are responsible for the production of emotions and mood (Frijda, 1986; Lazarus, 1991). These brain structures produce positive and negative emotions which if persistent for long time results in the formation of mood. Positive emotions such as joy, interest, exploration, excitement, savour, and gratitude and negative emotions such as fear, escape, disgust, guilt, shame, envy, and sadness are felt by the person as the result of the perception of a stimulus and associated similar past experiences. PANAS reported twenty types of positive and negative affect, among those. Positive affect is interest, excitement, strong, enthusiastic, proud, alert, determined, attentive and active. Whereas, negative affect are: distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid (Watson, Clark, & Tellegan, 1988). Positive emotions improve cognition by expanding cognitive range, flexibility, mapping, improving coping, increasing open-minded thinking, and promoting social adaptation (Yin, 2019). Negative emotions are aroused when the person is not able to overcome the situation, or handle problems, but they are useful in life-threatening situations, for survival. However, negative emotions decrease coping, narrow down the thinking process, disturb interpersonal relationships and impact the person's performance and productivity (Fredrickson, 1998; Isen, 2002).

Emotions and moods are different in terms of pleasantness and arousal level. If someone had experienced positive emotions then his/her mood will be happy for a long last but experiences negative emotions such as anger, then their mood will be unhappy and will perceive things negatively (Thagard, 2018). According to PANAS (Positive and Negative Affect Schedule), when a person is in positive affect, he/she perceives interpersonal relationships positively with overcoming all the challenges of life whereas negative affect such as anger, fear, or sadness, involves experiencing the world more negatively also experiencing negativity in interpersonal relationships or to their surroundings (Watson, Clark, & Tellegan, 1988). As thoughts determine feelings and actions and when a person deals with a stressful situation, the previous coping style is based on thinking and automatic thoughts are triggered. For example, a positive thinker will take action/advice/help from others to deal with a difficult situation rather than being frustrated by not being able to handle the situation. Positive thinking does impact stress, the body's immune system and psychological coping thus increasing well-being. Positive thinkers will also use gratitude, savouring and cherish small moments of life.

A person feels positive in several ways like when he earns profits, builds trust, respect, and reputation, has a good interpersonal relationship, feels socially acceptable, improves performance and getting opportunities, boosts morale, felt

enthusiasm. To feel positivity or the mind automatically capable to elicit positive thoughts, there are some positive mood induction strategies or methods through which positivity can be generated. These induction methods are the video induction method, positive mood statements, visual-imagery method, music induction method, and autobiographical recall method. These affect induction methods have been used for many years to elicit positive and negative affect in the clinical and non-clinical populations. Like, Jallais and Gilet (2010) and Brewer, Doughtie, and Lubin (1980) conducted a comparative study of different induction methods with autobiographical methods among the clinical and non-clinical populations. Talarico, Berntsen and Rubin (2016) conducted an experimental study on positive and negative emotions through autobiographical recall among 170 undergraduate students in North Carolina and concluded that the autobiographical method is an effective method to elicit positive and negative emotions through positive and negative recall. Whereas Kohn, Falkenderg, Kellermann, Eickhoff, Gur, and Habel (2014) conducted a study on positive emotions by using autobiographical recall on 54 German non-clinical populations to carry out the efficacy of the autobiographical recall induction method. In this present research, only the positive affect has been induced with the help of the autobiographical recall of positive life events among young adults. As per the review, of the literature, no study has been conducted on the person with a balanced affect state but this present research was conducted to carry out the efficacy of the selected induction method on the balanced affect state of the person.

Objective of the study

The present study was conducted to assess the efficacy of the autobiographical recall method in positive mood induction among people who were balanced between positive and negative affect

Hypothesis

There will be a significant improvement in positive mood after engagement in the autobiographical recall of positive life events in comparison to the basal mood ratings.

Material and Methods

Design of the Study: A single group pre and post design was used

Sample:

300 subjects ranging in 20-30 years age group comprised the study sample. All the subjects were neither high nor low in a positive mood as well on a negative mood. That is to say, all the subjects were balanced on positive and negative moods to draw the sample. It was ensured to have a three-stage sampling as under firstly, 300 college going boys and girls were administered PANAS and mean as well standard deviation on positive and negative states were computed (Mean age= 22.28 years and SD= 2.89). Secondly, all the subjects who were having more than 1 SD to mean and less than 1 SD to mean on positive scales

were screened out. The number of subjects that remained was 240 (140 boys and 100 girls).

Thirdly, among 240 subjects, those who were having more than 1 SD and less than -1 SD score on the negative affect scale were also screened out. So, the remaining 160 subjects were constituted in the study sample.

Tools

PANAS-SF (Watson, Clark, & Tellegan, 1988) widely used scale measuring mood based on the past 1 week and contains 20-item statements (10 positive statements and 10 negative statements) on the scale of 5-point Likert Scale ranging from "1-not at all to 5-very much". Biological measurement Pulse Oximeter (Urbanmac Company) to detect pulse rate and per cent oxygen saturation, and autobiographical recall method (Abele, 1992) as a mood induction method were used for the condition of this research study.

Procedure

In single group pre-post experimental design every subject was requested to report their subjective mood on a 5-point Likert Scale. Their pulse rate and oxygen saturation were also recorded before they were asked to engage in the autobiographical method. Post-intervention, every subject was again asked to give their subjective mood rating, pulse rate, and oxygen saturation sample. Thus, the design yielded 3 pre and 3 post dependent scores.

Subjects were contacted individually for the conduction of the experiment. The consent form including basic socio-demographical details about the subject was obtained. The subject was brought into the experimental laboratory and before starting the experiment, every subject was asked to give their subjective current mood state by rating it on a five-point Likert scale "very low (1) to very high (5) positive affect". After rating, a brief session of "deep-breathing relaxation" for 8 minutes was introduced to the experimental subject, so that any kind of disturbing experience can be controlled. PANAS-SF scale (Positive and Negative Affect Schedule-State Factor) were administered to identify the subjects into positive, negative, and balanced affect states. Later then, the selected biological measurement Pulse Oximeter hard clip was put on the right-hand first finger of the subject to note down the stabilized reading of the subject's pulse rate and oxygen saturation level. As the oximeter takes time to give a stabilized reading so, after 10 seconds, the final reading of pulse rate and per cent oxygen saturation is noted. After noting the readings of the oximeter, the selected induction method i.e., the Autobiographical Recall Method (AR) was applied for the positive enhancement of the experimental subject.

The subjects were given an A4 size white blank sheet and a pen and instructed that "on the given blank A4 size sheet paper, you have to write down your positive experiences/events of your life for 8 minutes without stopping and you can elaborate your subjective positive experiences/events in the Hindi/English language. The positive experiences or events can be related to their childhood, relationship, travel, and spending time with their family and friends. You can write down anything which you can call positive moments or experiences of your

life". After finishing the writing by the subject, again the selected biological measurement Pulse Oximeter hard clip was put on the right-hand first finger of the subject to note down the stabilized reading of pulse rate and per cent oxygen saturation. Hence, the pulse oximeter was applied to the subject two times before and after the introduction of the selected mood induction method. This whole experimental plan was ethically approved by the departmental ethical committee.

Statistical Analysis

Single rating pre and post of subjective mood rating, pulse rate and per cent oxygen saturation recorded. Hence, 3 pre and 3 post scores were obtained after then applying paired sample t-test with the help of Statistical Package for Social Science (SPSS) 24 Version. The confidence level of probability was 0.05 level of significance or less.

Results

Pre and Post measures of all the subjects have been described in Table-1 along with their standard error mean

Table-1

Mean, Standard Deviation, Standard Error of Mean of male (n=88) and female (n=72) subjects (N=160) of pre and post subjective effect rating, per cent oxygen saturation, and pulse rate

Dependent Variable	Mean	Std. Deviation	Std. Error Mean
Pre-Rating of Affect	2.93	.77	.061
Post-Rating of Affect	4.55	.58	.045
Pre-Percent Oxygen Saturation	97.30	1.41	.112
Post-Percent Oxygen Saturation	96.77	7.09	.561
Pre-Pulse Rate per minute	81.02	.86	.869
Post-Pulse Rate per minute	78.19	.97	.972

The pattern emerged from the means on 3 measures. Suggest that autobiographical recall tends to uplift subjective affect toward positivity, whereas the biological indicators seem to be reduced. However, these differences were verified statistically by using a t-test, the findings are presented in Table-2

Table-2

A pair sample t-test between pre and post mood rating, oxygen saturation and pulse rate were calculated in the below table along with their mean and standard deviation of male (n=88) and female (n=72) subjects along with a value of t (df=159) and associated probability

Pairs	Mean Difference	Std. Error Difference	t	p
Pre-Mood Rating AR Post-Mood Rating AR	-1.61	.98	20.68	.001

Pre-Percent Saturation	Oxygen	.52	7.29	.910	.364
Post-Percent Saturation	Oxygen				
Pre-Pulse Rate per minute		3.01	13.61	2.79	.006
Post-Pulse Rate per minute					

The results of the paired t-test revealed that significant mean difference in pre and postcondition found in subjective mood ratings and pulse rate at a 0.01 level of significance. However, per cent oxygen saturation mean difference at pre and postcondition was not beyond chance. This means that the selected induction method “autobiographical recall” effectively enhanced the subjective mood.

Discussion

The autobiographical recall method was found to be an effective method as it significantly increased subjective mood, and decreased pulse rate but did not significantly change oxygen saturation in the post-condition. Recalling and writing about positive life events and moments does improve mood especially when a person remembers past positive experiences. It was observed during recalling positive life events and writing, that many subjects started crying and reported that after so many days they felt happy. Subjects reported that while writing about a particular positive event, the imagery emerged in their mind and experienced vivid memory. While analysing content, many subjects wrote about the episodes of spending time with their loved ones, friends, and family, enjoying the vacation, or trip, and spending time together with family.

Hence, it can be concluded that the autobiographical method is a good way to feel positive and just by recalling the past positive memories a person’s mood can be elevated and they can feel stress-free and positiveness lead to better mental health. So, it can recommend that such writings may be used in academics, and offices, and also can be used to do daily routine tasks to perform. Even, it will mostly help adolescence who face emotional issues through changes in the developmental stages of their lifespan. It can also lead people to do gratitude and savouring or cherish the little positive moments of their life and help people to become resilient toward psychological stressors (Cunha, Pellanda, & Reppold, 2019; Chamorro, Ramirez, & Ortega, 2021).

A few studies recommended general writing of positive events which is already popularly used in positive psychology interventions. Like Speer & Delgado (2020) conducted a study on the eliciting of positive social values by positive autobiographical memory retrieval among 47 samples and found that with a positive memory social values can be enhanced. Another study conducted by Boehm (2011) on Anglo and Asians Americans to found the relevance of positive induction through autobiographical recall of positive memories. The method also impacts sympathetic activity such as heart rate (carryout in the research study by Siedlecka & Denson, 2018; Speer & Delgado, 2020; Burton, 2004).

This study was conducted on the subjects who were balanced on PANAS, whereas uplifting positive mood in people high on positive affect is easy while difficult in people high on negative affect. Since, most of the people usually, therefore, the implication of the findings is on greater population. It is recommended for further research, that when using the autobiographical recall method, it can be verbally and vocally recorded depending upon the consent of the subject as many people are not able to write or are not willing to do. Further, the subjects maybe were given an option to allow their record events to be recorded and analysed. The writing should be in vernacular language to have the method more effective. The positive inducement and enhancement can be much greater and even the subjects should have the right to take back their written or verbal recordings with them to respect their privacy.

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