

## The Effectiveness of Live Bee Sting Acupuncture on Depression

Safaa Diab Abd El- Wahab<sup>1</sup>, Lamiaa Hassnein Eita<sup>2</sup>

Psychiatric Mental Health Nursing, Faculty of Nursing, Minofya University, Minofya, Egypt

---

**Abstract:** People with depressed mood can feel sad, anxious, empty, hopeless, helpless, worthless, meaningless, guilty, irritable, ashamed and restless. They may lose interest in activities that were once pleasurable, experience loss of appetite or overeating, have problems related to concentrating, remembering details or making decisions, and may contemplate, attempt or commit suicide. Insomnia, excessive sleeping, fatigue, aches, pains, digestive problems or reduced energy may also be present. Depression will be the second leading cause of disease burden worldwide 2020. Despite these considerable costs, current pharmacological and psychological interventions have limited acceptability and effectiveness, up to 60% of depressed persons do not adequately respond to pharmacological antidepressant treatment and 30% do not adhere to medication.

The exact origins of apitherapy are difficult to pinpoint and can be traced back to ancient Egypt, Greece and has been practiced in China for 3-5000 years. Use of bee products in human treatments traced back thousands of years and healing properties are included in many religious texts including the Veda, Bible and Quran. Now it is being practical all over the world. In the USA the history of apitherapy goes back about 100 years. Bees are very important instruments in the health world, such as treating depression, neurological disease, muscle cramps, skin tumors, and nerve pain. Property to cure the disease obtained from some natural products such as; honey bee, royal jelly and sting/bee venom. Method of using bee products as one form of treatment eventually led to apitherapy technique. This therapy has been known since ancient Egyptian times, about 1870 BC.

**Aim** of this study was to evaluate the effectiveness of live bee sting acupuncture on first episode depression.

**Setting:** the study was carried out at Minofya University Hospital, psychiatric outpatient clinic.

**Subjects:** A total of 37 young adult volunteers who met the inclusion and exclusion criteria during the period from December 2013 to December 2014. **Tools:** Two tools were utilized by the researchers for data collection. I- structure interview demographic data: structure interview schedule. II- Beck Depression Inventory (BDI).

**The results:** The results revealed that volunteers had moderate and severe depression (59.5, 40.5) respectively before live bee sting acupuncture. The volunteers had no and mild depression (59.5, 40.5) respectively after 6 months of live bee sting acupuncture and absolutely no depression after 12 months.

**Conclusion and recommendation:** Volunteers who receiving live bee sting acupuncture intervention exhibited significantly decreased level of depression.

**Keywords:** Depression, Bee Sting Acupuncture, Acupuncture, Complementary Alternative Medicine, Traditional Chinese Medicine, Bee Venom

---

### I. Introduction

Today's world, people frequently have more complex problems including the typical or expected problems of life difficulties in relationships and developmental issues, as well as, they more severe problems, such as depression or thoughts suicide. Depression is characterized by both physical and psychological symptoms that can be detrimental to one's normal daily functioning, depressed individuals often suffer from poor sleeping habits, crying spells, anxiety, worry, poor memory, inability to concentrate, body aches, stomach disturbances and a lack of interest in activities previously enjoyed. In extreme cases, individuals become helpless and hopeless about their lives and suicide is often considered [1]. Depression will be the second leading cause of disease burden worldwide 2020. Despite these considerable costs, current pharmacological and psychological interventions have limited acceptability and effectiveness. Up to 60% of depressed persons do not adequately respond to pharmacological antidepressant treatment and 30% do not adhere to medication [2].

Recently, more doubts have been cast on the effectiveness of newer antidepressants, particularly in their effectiveness in lower severity depression [3]. Depressive symptoms can be treated by pharmacological and non- pharmacological methods. Complementary and alternative medicine (CAM) interventions are a non pharmacological treatment and a growing area of treatment and research. Complementary therapies are those used in conjunction with conventional medical practices. Alternative therapies are those that are used instead of conventional medicine. Nursing, with its tradition of holistic care- providing care for the whole person (mind, body, and spirit) in all its uniqueness- is especially well suited to deliver integrative therapy [1]. Recent polls indicate that a majority of mainstream citizens are now using CAM therapeutics of one sort or another [4]. Some people concluded that they wanted to be treated as "whole persons", and believed that complementary therapies were more effective than orthodox treatment for their particular problems [4]. In light of the significant

limitations of conventional therapy, interest is increasing in complementary and alternative therapies. Acupuncture is one of the most popular alternative therapies used by depressed persons [1]. A growing number of people are seeking alternatives to antidepressant medications, and new research suggests that acupuncture could be a promising option. Acupuncture, as a typical traditional Chinese medicine (TCM), has been applied for thousands of years. The rapid development of acupuncture both within and outside China over the last few decades has itself led to great, in ovations in practice. Many studies have investigated the benefits and success of acupuncture in relieving depressive symptoms [6]. Although the exact mechanism of action for acupuncture is unknown, it is associated with an increase in the level of neurobiological active substances, such as endorphins and enkephalin. There are also data indicating that acupuncture induces the release of nor epinephrine, serotonin, and dopamine [5]. Acupuncture is known to help improving the flow of blood circulations allowing oxygen, blood and lymph to support the body's healing process. Inserting needles is believed to restore the proper flow of the patient's life force [7]. Acupuncture is using for treatment of chronic pain, back pain, nausea, asthma, neurological conditions headache, circulatory functions, mood- related mental disorders and schizophrenia. Although the exact mechanism of action for acupuncture is unknown, it is associated with an increase in the level of endorphins, nor epinephrine, serotonin, and dopamine [1].

Early acupuncture needles were made from bamboo and bone and they were rather thick, their insertion was painful. In spite of there being no knowledge of sterilization before the 19<sup>th</sup> century, it is surprising to note that infection rarely occurred with acupuncture. This is because of acupuncture stimulates the immune system enhancing the body's protective mechanisms. The use of bee acupuncture comes at a time when colonies of the insect around the world are mysteriously collapsing. Environmentalists warn that dwindling (to grow less) numbers of bees, which help pollinate crops, could have a serious effect on agricultural production. Bee acupuncture is one of the most frequently performed pharmacopuncture to alleviate depressive symptoms [3]. A bee sting is strictly a sting from a bee. The sting of bee can be used for treatment of the most common diseases of the lower limbs and multiple sclerosis (MS). Bee sting therapy is treatment with live honeybees. Bee sting has beneficial effects as action on the immune system; it is immune supportive and immune activating [8].

Bees are very important instruments in the health world, such as treating depression, neurological disease, muscle cramps, skin tumors, and nerve pain. Property to cure the disease obtained from some natural products such as; honey bee, royal jelly and sting/bee venom. Method of using of bee products as one form of treatment eventually led to apitherapy technique. This therapy has been known since ancient Egyptian times, about 1870 BC. It is known from the writings of papyrus Theban, about the habits of the Egyptians used honey for healing and improving the vitality of the body [9]. Apispuncture is the combination of bee sting therapy and traditional acupuncture by applying bee sting into specific acupuncture point or points. Benefits of bee sting include: improved circulation, less fatigue and a feeling of "well-being", asthma, light coughs, seasonal allergies, epilepsy, emotional distress, burnout, exhaustion, irritability, anxiety, grief, heaviness in the head and depression [10, 11]. A sting from the honey bee, though painful, could be a great booster for the nerves. Apamin is a toxic chemical found in the honey bee venom could hold the key to make the person rides of an array of ailments (not serious illness or dangerous) including muscular dystrophy, depression and dementia. This may be a target for designing new drugs against dementia and depression, bee stings can be also used to treat diseases of lower limbs [12, 13]. This method is safe, effective, and less expensive than other therapies. One obstacle is fear of the pain from a sting, but when participants realize the benefits gained in pain relief, the sting becomes unimportant [16] While regular acupuncture involves inserting thin needles into the skin to treat illnesses, a much more painful type of treatment uses bee stings instead [9]. Bee venom (sting) is safe for human treatments. However, BV administration was reported to stimulate the function of immune system and to affect the release of cortisol production which is known as natural anti-inflammatory agent [15]. Lee et al. [16] reported that bee venom includes enzymes, peptides and amines are associated with anti- inflammatory, anti arthritic and analgesic effects.

### **1.1 Significance of the study**

Nurses have important roles in relationship to complementary and alternative medicine (CAM) approaches. They encourage clients to consider using CAM appropriate therapy. Also, nurses may be CAM practitioners themselves, nurses may be practitioners of CAM therapies in a variety of setting – hospital, outpatient, clinic, home, community and private practice office. The burden of depression, in both human and financial terms is enormous. It exerts a negative impact on mental, physical health and quality of life. In light of the significant limitation of conventional therapy, interest is increasing in complementary and alternative therapies. Acupuncture is one of the most popular alternative therapies used by depressed persons and bee acupuncture is one of the most frequently performed pharmacopuncture to alleviate depressive symptoms. Yet there is little empirical evidence of this attribute, so, researchers suggest that live bee sting acupuncture can help in decreasing depression

**1.2 Purpose of the study:** The aim of this study was to evaluate the effectiveness of live bee sting acupuncture on first episode of depression

**1.3 Research hypothesis:** Bee sting acupuncture is capable of reducing levels of first depressive episode among young adult volunteers.

## **II. Subjects And Methods**

**2.1 Research Design:** A quasi-experimental research (pre test, post test design) design was utilized to achieve the aim of this study. Participants receive optimized live bee sting acupuncture.

**2.2 Subjects:** A convenient sample of 37 adult volunteers. Criteria for inclusion were; outpatient, adult. Participants were not undergoing any psychiatric management; all participants were volunteers, negative allergic test, medically diagnosed the first depressive episode.

**Criteria for exclusion** were medically diagnosed with major depression or bipolar disorders. Under medical treatment

**2.3 Research Setting:** this study was carried out at Minofya University Hospital, psychiatric outpatient clinic.

**2.4 Tools for data collection:** Two tools were utilized by the researchers for data collection.

**2.4.1 Demographic data: structure interview schedule:** This tool was developed by the researcher after reviewing the related literature [17] for the purpose of collecting socio-demographic characteristics which include age, gender, residence and level of education.

**2.4.2: Beck Depression Inventory (BDI):** Symptom scale, which may be administered by a health professional or by the patient. Designed to measure attitude and symptoms that are characteristic of depression. Rating performed by: Trained professional or self-administered. Time required to complete rating: 5–10 minutes.

**Scoring system:** Rates 21 items, each with four or five response categories ordered by severity. Each item is scored on a scale of 0 (no problem) to 3. Total score is the simple sum of the 21 item scores. Generally, a score <9 indicates no or minimal depression, 10–18 indicates mild-to-moderate depression, 19–29 indicates moderate-to-severe depression, and >30 indicates severe depression. However, a score of 0–4 may suggest possible denial of depression and a score of 40–63 may suggest possible exaggeration of depression or a histrionic or borderline personality disorder. Reading age of about 10 is required for a patient who is self-administering the test. The previous tool was translated into Arabic then back translation was done into English to ensure translation accuracy

**2.5 Ethical consideration:** A written approval was obtained by the researchers from responsible authorities after explaining the purpose of the study. The researchers introduced themselves to every participant and explain the purpose of the study and assured them that confidentiality would be maintained throughout the study if the participant needs it. Also, the researchers emphasized that participation in the study is entirely voluntary and withdrawal from it can be done at any time, then an informed consent was obtained from participants who accepted to participate in the study.

### **2.6 Validity and reliability**

The first tool was constructed by the researchers after reviewing the relevant literature. Tool II was translated into arabic by the researchers then was tested for content validity by 5 experts in nursing and medical psychiatric fields. Modifications were done according to as certain relevance and completeness. This tool was tested using a test retest method and a Pearson correlation coefficient formula was used. It was ( $r = 0.756$ ) for tool.

### **2.7 Pilot study**

Prior to the actual study, a pilot study was conducted on 10% of the study sample (4 volunteers) to test feasibility and applicability of the tools and then necessary modifications were carried out accordingly. Data obtained from the pilot study were not included in the current study.

## **2.8 Procedure**

Official written permissions to conduct this study were obtained from the head of outpatient psychiatric clinic. Volunteers who met the criteria for inclusion and exclusion were approached by the investigator. The main aim of this study to evaluate the effectiveness of live bee sting acupuncture as an adjunctive treatment in adults. At that time, the purpose and nature of the study were explained. This study was conducted according to the following steps: 1<sup>st</sup> step: Designing the treatment to be implemented through review of related literature and research results regarding information about the live bee sting. It was in simple information and supplemented to help the volunteers understanding of the technique. Also, study tool was tested for content validity by a jury of 5 experts in nursing and medical fields were sought to ensure content comprehensiveness, clarity, relevance and applicability. Live bee sting acupuncture is practiced by healthcare providers and apitherapists who follow certain treatment protocols. The therapy starts with the determination of whether the volunteer is allergic to the venom (production of live bee sting). 2<sup>nd</sup> step; the researcher met the selected volunteers from setting. At the initial session, data were collected regarding sociodemographic data pertinent to age, gender, and residence. Also pre test Beck Depression Inventory (BDI) was administered to measure levels of depression.

### **The physical characteristics and composition of bee venom**

The venoms of most stinging insects including honey bees consisted of enzymes, protein, peptides, and a verity of smaller molecules .The pharmacological and biochemical activities of the various stinging insect venoms remarkably convergent. Most venoms induce immediate pain, contain phosphlipases, hyaluronidase, and other enzymatic activities, and are capable of destroying red blood cells [15]. Most hymenopterous venoms also contain low molecular weight peptides that are highly basic and have isoelectric points ranging from pH 9-12 [15]. In theory any stinging insect species can cause allergic reaction in humans. This because an insect sting introduces venom-which essentially is a blend of foreign proteins- into the body where it contacts the immune system and can induce production of allergy- causing antibodies. Apamin and a natural peptide toxin which were found in bee venom, is known for its ability to block a type of ion channel that enables a high-speed and selective flow of potassium ions out of nerves. The blocking of these channels in brain causes nerves to become hyperexcitable, producing improved learning that has implications for the treatment of dementia and depression. An allergic reaction typically occurs after the second or subsequent stinging event by the same or a closely related species. The first sting, (or stings), induces the production of the allergy causing antibody, immunoglobulin E (IgE), by the body resulting in the sensitization of the individual to the venom. Later when the now hipper sensitive individual is stung again, the venom causes an IgE-mediate allergic reaction. Normal and allergic reaction to stings can vary enormously from individual to individual [18]. Normal reactions are those that virtually everybody experiences and are characterized mainly by pain and burning that typically are in tense for a few minutes and then decrees over time. After the intense pain decreases a redness and swelling are oven observed and this can last several hours to a day or more. Like normal (non-allergic) reactions, large local reaction is nothing to be feared. Though they are thought to be immunologically based reactions, they rarely progress to systemic reaction. Moreover, the frequency of individual who experience large local reaction later having systemic reactions is no greater than that of people not experiences large local [19].

These areas frequently relate to acupuncture points and when stings are applied to them, the benefit is enhanced [20, 21]. This technique is sometimes called 'bee acupuncture'. The stings are applied to areas provoking an immune response. The red and swollen areas demonstrate the vasodilator effects of bee venom, drawing blood to the site of the stings and activating the body's healing process. After 30 seconds or so the pain has gone and is replaced by a feeling of warmth.

Bee venom therapy can be performed by a beekeeper, or by researchers who is taught to use the bees. After biting the bee to retard its movement, a bee is removed with tweezers, and held over an area of the body, which it then stings. The number, sites, and frequency of the stings depend on the sites (acupuncture points). A simple tendonitis might just take a few stings, perhaps 2 or 3 at a session for 2 sessions per week, for 6 months. Multiple sclerosis takes months to respond, though sometimes volunteers feel more energetic after a few treatments. Depressed patients who use bee sting insist that one must keep it up 2 times per week for six months in order to give it a full trial.

A live bee used to sting the volunteer directly. This is the way to apply the venom in its freshest, most complete and cheapest form [22].

**Sites of biting:** Working on these points can help you get better quicker. You do not have to use all of these points [21,22& 17].

**Points (A) -- Gates of Consciousness:** Location: Below the base of the skull, in the hollows between two large neck muscles, two to three inches apart depending on the size of the head. Benefits: Relieves depression, headaches, dizziness, stiff necks, and irritability.

**Points (B) -- Heavenly Pillar**

**Location:** One-half inch below the base of the skull, on the ropy muscles located one-half inch out from the spine. Benefits: Relieves emotional distress, burnout, exhaustion, depression and heaviness in the head.

**Points (C) -- Vital Diaphragm**

**Location:** Between the shoulder blades and the spine at the level of the heart. Benefits: This calming point helps to balance the emotions. It relieves anxiety, grief and other emotional imbalances.

**Points (D) & Points (E) -- Sea of Vitality**

**Location:** In the lower back two (Point E) and four (Point D) finger widths from the spine at waist level. Benefits: Relieves depression, fatigue, exhaustion, trauma and fear.

**Points (F) -- Third Eye Point**

**Location:** Directly between the eyebrows in the indentation where the bridge of the nose meets the center of the forehead. Benefits: Relieves depression as well as glandular and emotional imbalances.

**Points (G) -- Elegant Mansion**

**Location:** In the indentation between the first rib and the lower border of the collarbone, just outside the upper breastbone. Benefits: Relieves anxiety, depression, and chest congestion.

**Points (H) -- Letting Go** Location: On the outer part of the upper chest, four finger widths up from the armpit crease and one finger width inward. Benefits: Relieves depression, grief, repressed emotions.

**Points (I) -- Sea of Tranquility**

**Location:** On the center of the breastbone three thumb widths up from the base of the bone. Benefits: Relieves nervousness, grief, depression, hysteria and other emotional imbalances.

**Points (J) -- Three Mile Point**

**Location:** Four finger widths below the kneecap, one finger width on the outside of the shinbone. Benefits: balances the emotions, and relieves fatigue and counteracts depression.

**Points (K) -- Anterior Summit**

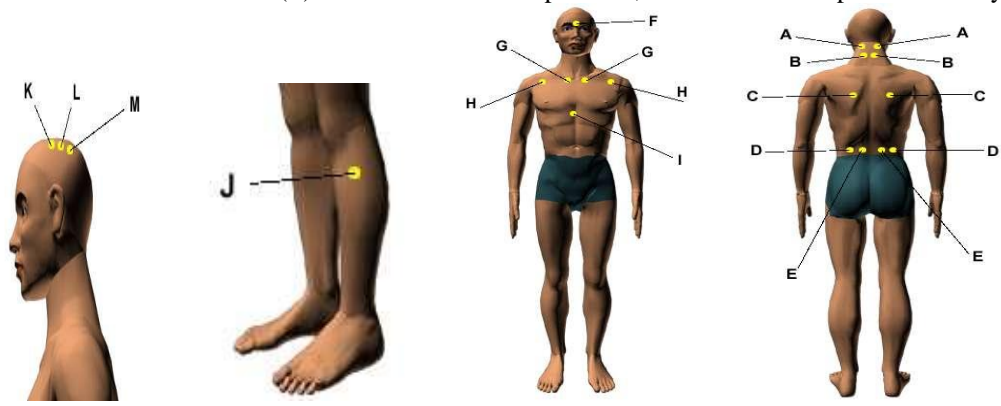
Location: one inch in front of Points (L) Benefits: Relieves depression, headaches and improves memory.

**Points (L) -- One Hundred Meeting Point**

**Location:** on top center of the head, by placing the left fingers behind the left ear; the right fingers behind the right ear. Move the fingertips up to the top of the head, center of the head. Benefits: Relieves depression, headaches and improves memory.

**Points (M) -- Posterior Summit**

Location: one inch behind of Points (L) Benefits: Relieves depression, headaches and improves memory.



**Test allergy:** The allergy test should be done by giving the person who will be recruited to the study with only one sting by a live bee, either direct sting or just scrape it on his/her skin. The stinger should be removed with tweezers immediately after stung, just leave it for about 10 seconds, it is often done on the knee, because it is far away from the heart and wait for the body reaction [23]. If no allergic reaction develops 15-20 minutes after stung, the bee stings is continued, but in case allergic reaction happened, the person shouldn't use bee stings for treating and should avoid exposure to honey bees stings. If no allergic reaction develops, the therapy is continued. The therapy is carried out every other day by gradually increasing the number of bee stings. The length of treatment is determined by the condition that is being treated. Traditionally, live bees that were stimulated to sting the affected area, trigger points or acupuncture points were used in bee venom therapy. Bee venom is thought to be most effective when it comes directly from a live bee during the late spring to early fall season.

### III. Results

**Table (1)** revealed that the mean age of studied sample was 21.892±8.109 years. Above two third of studied sample (64.9%) were females. As regard residence (70.27%) were urban. Regard depressive symptoms about three fifth (59.5%) were moderate depression and 40.5% were had severe depression.

**Table (2)** showed that there were significant improvements of volunteers who were applying the three assessments. This table supports the hypothesis.

**Table (3)** Illustrated that there is significant difference between mean and stander deviation for studied sample pre and post 3, 6&12 month of intervention.

**Table 4:** Showed that there is significant difference between mean and stander deviation for studied sample pre and post 3,3& 6,6&12 month of intervention..

**Table (1) Socio-demographic Data and Baseline Characteristics of the studied sample (n=37)**

| Biosocial characters             | Residence |                                  |       |    | Total |    |       |
|----------------------------------|-----------|----------------------------------|-------|----|-------|----|-------|
|                                  | Urban     |                                  | Rural |    | No    | %  |       |
|                                  | No        | %                                | No    | %  |       |    |       |
| <b>Sex :</b>                     | Male      | 10                               | 38.5  | 3  | 27.3  | 13 | 35.1  |
|                                  | Female    | 16                               | 61.5  | 8  | 72.7  | 24 | 64.9  |
| $\chi^2 : 0.711$<br>$P : >0.05$  |           |                                  |       |    |       |    |       |
| <b>Age :</b>                     | ( - ≥20)  | 8                                | 30.8  | 1  | 9.1   | 9  | 24.3  |
|                                  | (20 ≥25)  | 13                               | 50.01 | 3  | 27.3  | 16 | 43.3  |
|                                  | (25-30)   | 5                                | 19.2  | 7  | 63.6  | 12 | 32.4  |
| <b>Mean :</b>                    | 21.892    | $\chi^2 : 0.016$<br>$P : < 0.05$ |       |    |       |    |       |
| <b>St.D :</b>                    | 8.109     |                                  |       |    |       |    |       |
| <b>Depressive symptoms:</b>      | Moderate  | 21                               | 80.8  | 1  | 9.1   | 22 | 59.5  |
|                                  | Severe    | 5                                | 19.2  | 10 | 90.9  | 15 | 40.5  |
| $\chi^2 : 0.0000$<br>$P : <0.05$ |           |                                  |       |    |       |    |       |
| <b>Total</b>                     |           | 26                               | 100.0 | 11 | 100.0 | 37 | 100.0 |

**Table 2 Comparisons between before intervention and after 3 months, 6 months and 12 months regarding the residence(n=37).**

|                            | residence |       |       |       | Total |       |                    |
|----------------------------|-----------|-------|-------|-------|-------|-------|--------------------|
|                            | Urbane    |       | Rural |       | No    | %     |                    |
|                            | No        | %     | No    | %     |       |       |                    |
| <b>Before intervention</b> |           |       |       |       |       |       | 0.000<br>P: <0.05  |
| Moderate                   | 21        | 80.8  | 1     | 9.1   | 22    | 59.5  |                    |
| Severe                     | 5         | 19.2  | 10    | 90.9  | 15    | 40.5  |                    |
| <b>After 3 month</b>       |           |       |       |       |       |       | 0.0134<br>P: <0.05 |
| Absent                     | 4         | 15.4  | 0     | 0.0   | 4     | 10.8  |                    |
| Mild                       | 18        | 69.2  | 5     | 45.5  | 23    | 62.2  |                    |
| Moderate                   | 4         | 15.4  | 6     | 54.5  | 10    | 27.0  |                    |
| <b>After 6 month</b>       |           |       |       |       |       |       | 0.0128<br>P: <0.05 |
| Absent                     | 18        | 69.8  | 4     | 36.4  | 22    | 59.5  |                    |
| Mild                       | 8         | 30.2  | 7     | 63.6  | 15    | 40.5  |                    |
| <b>After 12 month</b>      |           |       |       |       |       |       | -                  |
| Absent                     | 26        | 100.0 | 11    | 100.0 | 37    | 100.0 |                    |
| <b>Total</b>               | 26        | 100.0 | 11    | 100.0 | 37    | 100.0 |                    |

$\chi^2$  No statistics are computed because afr12m is a constant

**Table 3: Mean and stander deviation for studied sample pre and post 3, 6&12 month of intervention(n=37).**

| Outcomes variables       | Paired difference of the mean and stander deviation | T . Value | P. value         |
|--------------------------|---|-----------|------------------|
| Pair 1: before & aftr3m  | 1.24324± 0.43496                                    | 17.386    | 0.000<br>P< 0.05 |
| Pair 2: before & aftr6m  | 2.00000± 0.47140                                    | 25.807    | 0.000<br>P< 0.05 |
| Pair 3: before & aftr12m | 2.40541± 0.49774                                    | 29.396    | 0.000<br>P< 0.05 |

**Table 4: Mean and stander deviation for studied sample pre and post 3,3& 6,6&12 month of intervention(n=37).**

| Outcomes variables       | Paired difference of the mean and stander deviation | T . Value | P. value         |
|--------------------------|---|-----------|------------------|
| Pair 1: before & aftr3m  | 1.24324± 0.43496                                    | 17.386    | 0.000<br>P< 0.05 |
| Pair 2: aftr3m & aftr6m  | .89189± 0.31480                                     | 17.234    | 0.000<br>P< 0.05 |
| Pair 3: aftr6m & aftr12m | 0.40541 ± 0.49774                                   | 4.954     | 0.000<br>P< 0.05 |

#### IV. Discussion

People who experience depression may feel an oppressive sense of sadness, fatigue, guilt and hopelessness. Depression affects physical, psychological, social and quality of life [2].

In the present study, our volunteers consisted of 24 female and 13 male. It means that two thirds of the sample was females. That is may be due to fear of psychiatric stigma and she fears to continue with a psychiatric section or hospital. The current study revealed that, the urban volunteers were more than two thirds of the sample. That meant there is an increasing awareness of medical benefits of the bees. The mean age was 21.892±8.109 years of the total sample. All volunteers didn't continue any conventional therapy. They interested to participate in this study. Conventional treatments of the depression include psychopharmacology, psychological therapy and E.C.T. In the current study, the volunteers experienced moderate and severe levels of depression. The present results revealed reduction in depression levels after 3 months of live bee acupuncture; the severe cases changed to moderate level of depression. After 6 months, moderate levels of depression changed to mild level and mild level changed to no depressive symptoms after 12 months. So, the present results showed a statistical significant reduction in levels of depression during follow up period.

There was a highly significant difference between before and after 3 months intervention, there was a significant difference between after 3 months and after 6 months, and also significant difference after 6 and 12 month. In this study, the researchers reported an innovative protocol for reducing depressive symptoms by using live bee stings acupuncture and evaluated its clinical effectiveness in minimizing the levels of depression. This is the first reported study that assesses the value of living bee sting acupuncture in reducing depressive levels.

Bees are very instrumental in the health world. Important things are related to bees until now still being studied and developed. Using bee stings for therapy was reported in ancient Chinese medicine, where bee keepers found that accidental stings cleared up arthritis and other maladies. Bee acupuncture is commonly performed at sensitive nerve sites throughout the body similar to the sites of acupuncture (www. Google. Com). The theory is the immune response will occur more quickly whether suffering from a debilitating and progressive disease such as multiple sclerosis, or a- minor case of depression. The use of bee venom therapy had become widely accepted as a feasible approach to healing in and among the alternative medicine community [15].

In this study, the results revealed that there was significant reduction in depressive level after using living bee sting acupuncture. It is believed that bee venom from natural bees can cause improving in depressive levels and symptoms. On the same line, **Bristol [24]** stated that venom from honey bees sting could help combating symptoms of depression and dementia. **Seo, [25] et al** reported that bee venom exhibits several pharmacological actions, including analgesic, anti-inflammatory, anti- arthritis, and anti- cancer through multiple mechanisms such as activities of the central inhibitory, excitatory and modulation of the immune system. Scientists believe it can the way the immune system functions in the body and contribute to increased cortisol production [4]. Traditionally, bee venom was administered with live bees by stimulating them to sting in the affected area or acupuncture points.

In the same context, **Seo, [26] et al** reported that the use of CAM therapeutic modalities including acupuncture and herbal acupuncture has been increased. Also, **Jung et al (2013)** bee venom has anti-inflammatory and analgesic effects on osteoarthritis itself. Thus they used bee venom to relieve patient's hip joint pain and promote rehabilitation.

Benefits of Bee venom include improved circulation, better bladder control, less fatigue a feeling of "well-being", depression, asthma, epilepsy, psoriasis, some types of cancer, arthritis, rheumatism, multiple sclerosis, and pain relief. It has an effect to cure over 500 diseases, disorders, and mental conditions. It contains more than 40 pharmacologically active substances [27, 28]. Bee venom is a mean of limiting depressive symptoms. The toxin Apamin is a natural peptide toxin found in bee venom, is known for its ability to block a type of ion channel that enables a high-speed and selective flow of potassium ions out of nerves. The blocking of these channels in brain causes nerves to become hyper excitable, producing improved learning that has implications for the treatment of dementia and depression. In addition, injection of Apamin improves the symptoms experienced by sufferers of myotonic dystrophy (MD) [29]. The whole bee venom was composed of poly-peptides, enzymes, and amines.

Using bee venom dating back to Hippocrates who used bee venom to treat a variety of illnesses. The present participants experienced a reduction in, tension, restlessness, sadness, headache and loss of appetite. The authors viewed bee sting acupuncture as a safe and potentially effective method of treating depression. However, within this larger context of contentious claims regarding "unproven" versus "evidence based" medicine, there has been small but strong body of inquiry into what is about CAM that attracts consumers and what their perceptions about CAM might add to the policy debates [4].

Although the current study was designed as a pilot study, every step clinical study implementation will be restricted rigorously conducted, monitored and supervised to ensure methodological integrity and scientific validity. All procedures have been rigorously designed by a process of consensus with experts and previous research. However, there have been no studies on the effectiveness of bee sting in depression [26].

Result of **Cho et al [17]** revealed improvement in depression which is associated with parkinsonian disease. The mechanism by which acupuncture affects depression related behavior was found by some recent studies to include significant changes in hippocampus metabolites, reduction in corticosterone and adrenocorticotropin plasma hormone levels. In the same context, **Thorne et al [4]** reported that, responses from a mailed questionnaire from 422 women confirmed that their motives had included a desire to boost their immune system and thereby assist conventional treatment as well as an interest in improving their quality of life and feelings of control.

According to animal experiments, bee venom exhibits anti arthritic, anti-inflammatory and analgesic effects attributable to the suppression of cyclo-oxygenase-2 and phospholipase A2 and a decrease in the levels of tumor necrosis factor [27]. Although Bee venom acupuncture (BVA) for RA (Rheumatoid Arthritis) is used as an effective method for reducing RA-related symptoms and improving functioning, there is no critically appraised evidence regarding the safety and effectiveness of BVA for RA from a systematic review or meta-analysis [27].

It is thought that pain, hyperalgesia, and inflammation reactions associated with bee stings are most likely the result of injected bee venom, rather than the stinger itself [30].

## V. Conclusion

In the light of this study findings, it can be concluded that levels of depression were high in the pre-live bee acupuncture intervention phase. After implementation of the intervention considerable improvements were noticed in levels of depression. Therefore the live bee acupuncture intervention was successful in attaining its aims of positively changing the levels of depression.

## VI. Recommendation

The findings from this study made the researchers to suggest the following recommendations:

- 1- Reevaluate this study on large sample.
- 2- Emphasis on that live bee sting acupuncture is considered as a type of herbal acupuncture
- 3- Increase the awareness of people regarding the benefits of the bees.

## Limitation

This study has number of limitations. Most notably was the small sample size. Although few of references that treating our point of view, the participants in our study indicating significant improvement in a variety of levels of depression, thus a large study with long-term follow-up is needed to replicate our results and also, a randomized control study is needed.



## Abbreviations

CAM: complementary alternative medicine.

B.V: Bee Venom.

BVA: Bee Venom Acupuncture.

RA : Rheumatoid Arthritis

TCM: traditional Chinese medicine

## Acknowledgements

First of all, deepest thanks to "Allah" to give us the bees and the power to complete this work and give us the bees. All gratitude to all volunteers who share in this study. My respect to all who help me to complete this work.

**Conflicts of interest:** The authors have no conflict of interest to declare

**Finance support:** No financial support was received during the present study

## References

- [1]. Knesil, C., Wilson, H., and Trigoboff, E, (2004). Contemporary psychiatric- Mental Health Nursing. Pearson Education Press. New Jersey. Ch. 32: P.P. 762-800.
- [2]. Velayudhan, A., Gayatri Devi, S., and Rani, R. (2012). Efficacy of behavioral intervention in reducing anxiety and depression among medical students. Available on: [www. Industrial psychiatry. Org](http://www.industrialpsychiatry.org). Doi: 10.4103/0972-6748-77636.
- [3]. Macpherson, H., Richmond, S., Bland, J., Lansdown, H., Hopton, A., Kangombe, A., Morley, S., Perren, S., Spackman, E., Spilisbury, K., Torgerson, D., and Watt, I (2012). Acupuncture, counseling, and usual care for depression: study protocol for a randomized controlled trial. *Trials*, 13: 209. [www. Trials journal.com](http://www.trialsjournal.com).
- [4]. Throne, S., Patersan, B., Russell, C., and Schultz, A. (2002). Complementary/ alternative medicine in chronic illness as information self- care decision making. *Int. J. Nursing studies*, 39:67-683.
- [5]. Jalynytchev, V.(2009). Role of Acupuncture in the Treatment of Depression. Published on *Psychiatric Times*
- [6]. Chen, Y, Iiu, J., Yu, N., Liang, Z., Xu, Z., XU, S., and Fu, W. (2013). Effects of acupuncture treatment on depression insomnia: a study protocol of a multi center randomized controlled trial. *Trials J., Bio-med central*, [www. Trails journal. Com/content/14/1/2-14:2](http://www.trailsjournal.com/content/14/1/2-14:2).
- [7]. Tian, C. (2002). Acupuncture treatment for depression. *New England J. traditional medicine*, 1, 4-7.
- [8]. Bogdanov, S. (2014). Bee venom: Composition, health, medicine. [www. Bee- hexagon. Net](http://www.bee-hexagon.net). February 2014.
- [9]. Appert, S. (2013). Bee sting acupuncture increasingly. Popular in ching. *Epoch times*, August, 14 online.
- [10]. Huang Y, Jiang X, Zhuo Y, Tang A, Wik G. Complementary acupuncture treatment increases cerebral metabolism in patients with Parkinson's disease. *Int J Neurosci* 2009;119(8):1190e7.
- [11]. Cathy, W. (2014). Alternative medicine categories. *Alternative medicine expert*. March; 7.
- [12]. Jone, A. (2013). Bee sting therapy treats illnesses from arthritis to cancer in china. [www. Relax news](http://www.relaxnews.com). August, 19.
- [13]. Simics, M (2005). Bee venom therapy [www. Apivet.net](http://www.apivet.net). Apitronic Services, 9611 No. 4 Road, Richmond, B.C., Canada, V7A 2Z1, Ph./Fax (604) 271-9414
- [14]. [Www. Apitherapy. Org](http://www.apitherapy.org) Bee venom may help treat MS, depression and dementia.
- [15]. Ali, M.,(2012). Studies on Bee venom and its medical uses. *Int. J. advancements in research of technology*. 1 (2): 1-15.
- [16]. Lee, J., Park, H., Chae, Y., and Lim, S. (2005). An overview of bee venom acupuncture in the treatment of arthritis. *E CAM*; 2 (1): 79-84.
- [17]. Cho, S., Shim, S., Rhoe, H., Park, H., Jung, W., Moon, S., Park, J., Ko, C., Cho, K., and Park, K. (2012). Effectiveness of acupuncture and bee venom acupuncture in idiopathic Parkinson's disease. *Parkinsonism and related disorders*, 18: 948-52.
- [18]. Schmidt, J.O., "Allergy to venomous insects" (In *The Hive and the Honey Bee*, Edited by Joe M. Graham, Dadant and Sons, Hamilton, Illinois, 1999").
- [19]. Caldwell, J. R. "Venoms, copper and zinc in the treatment of arthritis Rheum". *Rheumatic diseases clinics of North America* 25: 919-928, 1999.
- [20]. Smith CA, Hay PP, Macpherson H: Acupuncture for depression. *Cochrane.Database Syst Rev* 2010, (1):CD004046. doi:10.1002/14651858.CD004046.pub3.
- [21]. Shi XM: Acupuncture and Moxibustion. Beijing: Traditional Chinese Medicine publishing house; 2002:166-167.
- [22]. Huang Y, Jiang X, Zhuo Y, Tang A, Wik G. Complementary acupuncture treatment increases cerebral metabolism in patients with Parkinson's disease. *Int J Neurosci* 2009;119(8):1190e7.
- [23]. <http://www.bristolpost.co.uk/Bee-Stings-tackle-depression>.
- [24]. Seo, B., Lee, J., Sung, W., Song, E., and Jo, D. (2013). Bee venom acupuncture for the treatment of chronic low back pain: study protocol.
- [25]. Seo, B., Lee, J., Kim, P., Baek, Y., Jo, D., and Lee, S. (2014). Bee venom acupuncture, NSAIDS or combined treatment for chronic neck pain. Study protocol for a randomized, assessor- blind trial. [www. Trails Journal.com](http://www.trailsjournal.com) [www. Bee venom.com](http://www.beevenom.com).
- [26]. Lee, J., Son, M., Cho, J., Jun, J., Kim, J., and Lee, M. (2014). Bee venom acupuncture for rheumatoid arthritis: a systematic review of randomized controlled trials. *BMJ*; 4: e 006140. doi: 10-1136.
- [27]. Cadena, C. (2006). Bee venom therapy; An overview on this alternative medicine. [Www. Nydialynews.com](http://www.nydialynews.com)
- [28]. Simics, M Titled "the effect of Bee sting on the human body. [http://www.aollhealth. Com/ 2010/07/12/bee- venom-eyed- as-treatment-for- depression- dementia](http://www.aollhealth.com/2010/07/12/bee-venom-eyed-as-treatment-for-depression-dementia).
- [29]. Lin, P., Wang, N., Hwang, Y., Kang and D., Yeh, L. (2011). Bee sting of the cornea and conjunctive management and outcomes. *Cornea*, 30 (4): 392-4.
- [30]. <http://www.informahealthcares.com2013>
- [31]. <http://www.psychiatrictimes.com>
- [32]. <http://www.apivet.net>.
- [33]. <http://www.beevenom.net>