

## **Repetition of Spiritual Mantra Meditation: A Review**

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DOI: <https://doi.org/10.51200/kitab.v1i1.5204>

### **ABSTRACT**

**Introduction:** Studies on spiritual mantra meditation represent a growing field. **Objectives:** This review paper aims on several repetitions of spiritual mantra meditation including the practices and its effect on health. **Methods:** The selected papers were searched by using PubMed and Scopus databases from 2007-2017. The terms used were 'mantra', 'chanting', 'religious chanting', 'zikr' or 'dhikr' and other relevant terms. **Result:** Twenty-six original papers consist of several spiritual mantra meditations were identified; OM chanting, Gayatri mantra, Dhikr (remembrance of Allah), Kirtan Kriya and Mantram Repetition Program (MRP). The vast majority of studies were quantitative intervention study, 4 observational studies, 2 comparative study and qualitative study and a case study. Among the 26 papers that met the criteria, 84 percent (%) papers gave positive results on the outcomes in various domains and 12% and 4% did not show particular result and mixed results respectively. **Discussion:** New mantra meditation such as MRP and dhikr were found in this review. The participants covered for this study majority from healthy individuals, cancer patient, Post Traumatic Syndrome Disorder (PTSD), chronic kidney disease (CKD) and patient undergoing coronary artery bypass graft surgery. However, a definite conclusion cannot be drawn. **Conclusion:** Spiritual mantra meditation has positive impact in physical and mental health. Future study on the ability and feasibility of repetition of spiritual mantra meditation need to be explored.

**Keywords:** Dhikr, mantra, spirituality, chanting, meditation, religiosity

### **Introduction**

Meditation has served as spiritual and healing practice during ancient times (Walters, 2002). Most meditations are encountered in nearly every culture and may be related with religious practice (Newberg & Waldman, 2010). These factors may explain the relatively good correlation between spirituality/religiosity and meditation experience. In this era, there are many adapted meditation techniques or known as the secular meditation are being applied in modern medicine such as mindfulness from Buddhism influence (Kabat-Zinn, 2003), transcendental meditation from Hinduism meditation (Alexander et al., 1989; Corsini, 1994). More recently, the new program such as mantram repetition program (Bormann & Oman, 2007) was also emerged as meditation by repetition the holy or spiritual or religious name in daily activity and practice. In eastern culture, meditation is more common due to the culture, tradition and belief system. Hence, there are tremendous studies about the meditation in eastern. The most popular one are yoga, qigong and Zen (Ospina et. al, 2007). Recently, the Islamic meditation such as Salah and dhikr also become more highlighted in their contribution to health (Saniotis, 2015). Furthermore, meditation also known as 'frontier medicine' because its nature cannot be explained (Krucoff, 2005). Nowadays, with the aid of brain imaging technology, there are many researchers tried to untwine the mystic in meditation as one of the integrative

medicine in promoting health and well-being (Tomasino, Chiesa & Fabbro, 2014; Jasmin et al., 2016). In the last few decades, there has been a surge of interest in the therapeutics effects and contribution of mantra meditation on human population.

Mental training practice is a key point of meditation which aims for attention, perception, physiology and emotion (Fox & Cahn, 2018). Traditionally, it was used by the religious meditator to attain perception and bring mind consciousness (Perez de Albeniz & Holmes, 2000). This can be achieved by focusing on self-contemplation, complying with own emotions and focusing attention on the present time. Meditation can be classified as focus attention, mindfulness and mantra meditation (Chan, 2014; Fox et al. 2016; Lang et al, 2012). First, contemplative or thoughtful meditations; contemplative meditation involves the use of a mental task, such as focusing on feelings of compassion for self and others. This process can be achieved by listening to guiding instructions during meditation. Second, non-judgemental or Mindfulness; mindfulness meditation involves how to develop awareness and non-judgemental thoughts. It can be achieved by practising self-regulation attention into present moment or changing individual orientation from experiences into present moment (Bishop et al., 2004). Last but not least, concentrative or mantra meditation; the fundamental characteristics of mantra meditation involves repetition a short word, phrase or set of syllables to control mind distractions (Szász, 1992). The repetition of sound or mantra provides an effective vehicle for directing and focusing the attention and awareness of the body and mind. Mantra meditation is proposed to act as a beginning skill to improve a person's ability to attend to the present moment (Lolla, 2017; Burchett, 2008; Alpher & Blanton, 1991).

There is also another type of meditation known as spiritual meditation. It is focussing on the practice that involve with higher power, divine entity or Holy Spirit (Miller & Thoresen, 2003). Spiritual meditation influenced by a specific religious or spiritual practice for instance Sufi dhikr in Islamic way and contemplative prayer in Christian beliefs. The techniques of spiritual meditation may have common characteristics with other type of meditations. For many years, mantra meditations have shown an increased attention. Therefore, this paper intends to investigate and summarize the report on repetition of spiritual mantra meditation including the practices and its effect on physical and mental health.

## **Methodology**

The findings were searched by using database PubMed and Scopus from 2007 until December 2017. The search terms used were 'mantra', 'chanting', 'religious chanting', 'zikr' or 'dhikr' and only paper with English language were selected. Total 1667 and 841 papers were found in PubMed and Scopus respectively. Sixty seven papers selected after removal of duplicated paper and relevant titles. After full text screening, only 26 papers were found matched the criteria. Insufficient outcomes detail on mantra meditation and not original paper such as review paper and report case were excluded from these criteria. Out of 26 studies, there was one case study [P3], two studies comparative studies [P1-P2], two qualitative studies [P4-P5], four analytical studies [P6-P9] and the rest were intervention studies. Intervention studies divided into pre and post study without control [P10], randomized controlled trial [P11-P17] and quasi experimental study [P18-P26].

The quality of the intervention studies were rated by using Jadad score (Jadad et al., 1996) consists of pre and post study, randomized and nonrandomized control trial. Then, for analytical studies, Newcastle Ottawa score (NOS) (Stang, 2009; Modesti et al, 2016) was used and the evaluation for qualitative study by Russel and Gregory (2003) for qualitative study. Jaded score consists three parts which are randomization (2 sub score), blinding (2 sub score) and account on study (1 score). Therefore 5 marks are the highest. The 3 considered fair and below 3 are poor and

above 3 considered good. For modified Jadad score for non-randomized, the score is reducing for one mark for each part. So the 3 was the highest. The 2 is considered good quality of study. The selection, comparability and exposure criteria were taken into account for the observational study based on NOS. The quality of study divided into three which are low (0-3) moderate (4-6) and high quality (7-10). For the qualitative score, the quality was assessed by the meaning of the findings, validity of findings and application of the finding to patient. There is no common scale used to evaluate the comparative and case study.

There were different measures on effects of mantra in the different studies, thus, the outcomes of the each paper were classified based on domain; clinical, physiological, healthcare utilization, psychosocial, cognitive and neuropsychological. Then, the findings were categorized as POS, NP and MIX; POS: the outcome has positive impact on mental or physical health; NP: the outcome did not show any changes or impact on mental or physical health; MIX: the outcome has shown both of positive and no impact result on mental and physical health.

## **Results**

The findings were summarized in Table 1 presented by the order of the study design. Most of findings were dominated by AUM/OM chanting, Gayatri mantra, Kirtan Kirya, Islamic religious chanting or known as Dhikr and self-chosen mantra by the participant such as MRP. The practices of the mantra reported different in range from 5 to 45 minutes for a day or without specific time and place such as MRP protocol. The outcomes were divided into domains which are healthcare utilization, physiological, psychosocial, clinical and cognitive and neuropsychological. In total, 84% findings have shown positive result and 12% and 4% were found not particular changes and mixture of positive and not particular changes. Surprisingly, there was no negative result reported from these findings.

## **Specification of mantra**

### **AUM/OM chanting**

OM or AUM is the sacred word originated from Hinduism, Buddhism, Jainism, Sikhism and Zoroastrianism (Dudeja, 2017). It is the most known mantra and called as pranava mantra as the source of all mantra. (Gurjar and Ladhake, 2008) Apart from that, it also described as primordial sound than other mantras. Sound of AUM consist three letters. Each letter carries out its own significant meaning. The first letter A-define the beginning, the middle letter U-define the growth and the last letter M-portray dissolution. These letters carry a meaning of creation, preservation and resolution (Kumar et al., 2010). The mantra meditation can be performing based on four techniques whereby loud AUM chanting, mental soft chanting, listening AUM chanting and witnessing and merging respectively. In addition, the sound of AUM can be divided into four steps. There are, waking, dream, deep sleep and turiya. Turiya represent an indication for the practitioner in a subtlest state or the transcendental meditation state in which the body is completely at rest but the mind is fully alert (Dudeja, 2017). Moreover, AUM can be chanted during ritual activities, performances, sacrament and sacrifices, meditation and several worship activities (Lolla, 2017). As a meditation, AUM chanting can be includes altogether in yoga and prayanama or breathing practice (Ivanković, 2017). Several lines of evidence suggest that AUM sound can take a role as the bridge to our self-realization. It has the influences on mental consciousness spirituality, psychology and health benefits (Ray, 2010). Not only that, it also can give energy and mental power, rides consciousness, bring mindfulness and give strength in negative situation such as depress and gives away a worldly and unwanted thoughts (Gurjar and Ladhake, 2008). There is several method of AUM chanting. First method is by imagining the sound of AUM mantra internally, in the mind only without making any external

sound. At the same time, allow the mantra to flow with the breath and start chanting continuously (Gurjar, Ladhake and Thakare, 2009).

Exhale: "OMmmmmmmmm..."  
Inhale: "OMmmmmmmmm..."  
Exhale: "OMmmmmmmmm..."  
Inhale: "OMmmmmmmmm..."  
Exhale: "OMmmmmmmmm..."  
Inhale: "OMmmmmmmmm..."

Second method is by alternating between mantra and rest and quite sound. It suggested imagining the OM mantra only on exhalation to make it more comfortable.

Exhale: "OMmmmmmmmm..."  
Inhale: "(silence)"  
Exhale: "OMmmmmmmmm..."  
Inhale: "(silence)"

### **Gayatri mantra**

Gayatri mantra is also one of the mantra that roots from Hinduism. It is one of the ancient mantra that been stated in the Veda, the holy book of Hinduism (Pathar, 2010). Gayatri mantra that stated in the Veda is honoured as Vedamata, Mother of the Vedas. It holds a special place in Hindu ideology and practices, repeated and cited widely in the philosophical scripture (Rejimon, 2018; Zubko, 2006). Gayatri mantra can be performed in spiritual ritual in Hindu traditionalist (Ramabrahmam, 2006). For example Gayatri mantra is recited during the opening traditional dance.

The mantra is repeated as:

Om bhur bhuvah svah

Tat savitur vareYJyamBhargo

devasya dhimahi

Dhiyo yo nah pracodayat Om, earth, atmosphere, sky.

Let us meditate on the light of the sun god Savitr.

May he guide our intellect

Research shown that chanting Gayatri mantra for 2 to 5 minutes a day in the morning can promote the brain. This mantra can generate vibrations which increase the intellect by activating different glands. This relates to the line 'May God guide our intellect' in Gayatri mantra (Sharma, 2017). Gayatri mantra can remove and drive away the negative thoughts in human mind and subsequently bring positive thoughts and happiness (Pathar, 2010).

### **Kirtan Kirya**

Kirtan Kirya is one of the mantra meditations which in a part of Kundalini Yoga practice. This practice was introduced by Yogi Bhajan and its followers and had been influenced by Hindu principles (Wayne, 2018). Kirtan Kirya involved two specific practices; repetitive of mantra called "Saa, Taa, Naa, Maa," and also the movement of fingers known as 'sudra'. The meaning of "Saa, Taa, Naa, Maa," is "Birth, Life, Death, and Rebirth". This repeated mantra is come from "Sat Nam" which means "my true essence". (Alzheimer research and prevention foundation, 2018). Review by Laird and others (2018) stated that Kirtan Kirya promote cognitive aspect, reducing distress symptoms and assist in memory enhancement. The protocols of the Kirtan Kriya are well known since there are many studies using Kirtan Kriya as the meditation and therapy. First the chanting and the synchronized hand movement during Kirtan Kriya practice; touch the index finger during "saa", touch the middle finger during "taa", touch the ring finger during "saa", touch the little finger during "maa" respectively with the thumbs. Second, it start with aloud chant for the first

minutes, and then it will slow down into a whisper until it become silent. The average duration for Kirtan Kriya is around 15 to 30 minutes (Russel-Williams et al, 2018). At the same time, meditator wills “tuning in” for the first minute then deep breathing relaxation accompanied with the visualization (Lavretsky, 2013).

### **Dhikr**

Literally, dhikr is an Arabic language from root words (ذَكَرَ-يَذْكُرُ-ذِكْرٌ) means remembrance; something comes out from individual tongue (Syed Hadzrulathfi Syed Omar, 2014). Specifically, in Islamic content dhikr means remembrance the glory of God, it means the magnifying, celebration, lauding or praising of God which is Allah (Swan, 1912). There are several verses from Quran command Muslims to always remembering Allah throughout the day and night and its connection to the well-being of Muslims.

“O you who believe! Remember God with much remembrance.” [33:41] (Hamza, 2007)  
“Verily by God’s remembrance are hearts reassured, that is, the hearts of the believers;” [13:28] (Hamza 2007).

This meditative religious practice can be performed either individually or collectively such as Sufi Dhikr Circle and Majlis Dhikr in Indonesia (Aslan Guemuesay, 2012; Zamhari, 2010). Dhikr ritual practice plays an important role in Sufism as one of basic aspect in Islamic psychotherapy (Isgandarova, 2018). One of the Muslim scholars, Az-Zarqashi stated that dhikr is the pillar in Sufism Order. Although, there are many types of Order such as as Tijaniyah, Qadiriyyah, Naqshabandiyah, Qadiriyyah wa Naqshabandiyah, Shatariah and Muhammadiyyah (Syed Hadzrulathfi Syed Omar, 2014). But, the fundamental activity maintains the same which is dhikr. All of these Orders are linked with the Prophet, and its teachings and doctrines are not contradicted to the Islamic principles. The dhikr can be expressed silently just say it in the heart or loudly and say it by tongue which also called dhikr khafi or dhikr jali respectively. Both of the dhikr techniques are adapted from the Prophet practice based on scholars understanding on Quranic verses and hadith of the Prophet (Zamhari, 2010). In addition, dhikr is a structured practice that can give a sensation to the mental and body. The constant repetitive of Allah combine focus mind with His attributes or names will bring His reality and imminence most intensely to mind subconsciously. Then, with the growing attention in the mind eventually bring excitement and affect the physiology of the body (Swan, 1912; Saniotis, 2015). Geels (2009) postulated the effects of dhikr by Jerrahi order in term of ego in psychology level from society, individuals and somatic level. Moreover, the acts of dhikr can bring annihilation into individuals or the unity with God.

### **Mantram repetition program**

Mantram repetition program is modified repetitive mantra meditation that introduced by the researcher Dr. Bormann based on the practice and outline from Sri Eknath Aswaran (Bormann, 2005). The idea comes from the Sanskrit term "mantra". However, mantram repetition emphasizes repetition of self-selected sacred word or phrase. The mantram word or phrase will be chosen based on individual’s belief (Bormann, Oman, Kemppainen, & Becker, 2006) that hold connection with the highest power either God, the ultimate reality or Self within. Conceptually, the sacred word carries a kind of transforming “charge” from having been repeated by millions of people over the centuries. Meaning can assist by concentrating the mind and subsequently help on transforming thought, cognitive and intention. The mantram will be repeated silently without specific place and time either during stress or non-stress situation as much as possible throughout the day (Bormann, Hurst & Kelly 2013). Repetition practice can serve to train concentration and attention for suppress negative thoughts, enhancing performance and manage unwanted emotions, thus, bringing attention to the present moment. Moreover, focussing on the word helps to

penetrate subconscious state and produce something inspirational, comforting, and positive. Thus, this practice can bring a peaceful and calm mind, cognitive and emotional stability to overcome distress moment and experience.

## **Mantra outcomes on health domain**

### **Healthcare utilization**

Two studies were in the domain of healthcare utilization (Burke, 2012; Ku & Koo, 2011). Healthcare utilization or the healthcare services is one of the most important in maintaining the health care and service for the patient (Philips et al., 1998). Both of these studies proposed that mantra meditation is one of the common alternative and complementary preferred meditations. A first study has shown that mantra meditation was chosen significantly by the participant other than Qigong visualization and Zen meditation as their self-regulatory practice. This is because, the simplest and convenient characteristics of mantra meditation are one of the reasons based on the self-report of the participants as the novice meditators. Moreover, the focus attention element in mantra meditation by repetition of specific words and breathing technique can lead into mind concentration and relaxation without complexity than other meditations (Burke, 2012). The second study by Ku and Koo (2011) has given evidences that chanting therapy was widely used as the alternative and complementary medicine in order to engage with distress symptom after cancer treatments. In addition, result has revealed that chanting practice can help them manage 13 symptoms of side effects treatment which are fatigue, loss of appetite, depression, anxiety, disturbed sleep, pain, dizziness, dry mouth, numbness, chest distress, shortness of breath, oedema, and cough.

### **Physiological**

Twelve studies were discussed on the effects of mantra meditation on physiological changes (Engstrom & Soderfeldt, 2010; Berkovich-ohana, Wilf, Kahana, Arieli, & Malach, 2015; Engström et al., 2010; Kalyani et al 2011; Thomas, Jamieson & Cohen, 2014; Gao et al., 2017; Chanu & Devi, 2014; Selvaraj et al., 2008; Khalsa, Amen, Hanks, Money, & Newberg, 2009; Bhargav et al., 2016; Hosseini, Lotfi Kashani, Akbari, Akbari, & Sarafrazmehr, 2016; Mooventhan, 2014). Most of the study examined by using neuroimaging study such as functional magnetic resonance imaging (fMRI), single photon emission computed tomography (SPECT), electroencephalogram (EEG) and Functional near-infrared spectroscopy (fNIRS) to detect region of interest on the brain, computerized spirometric equipment for pulmonary test and electrocardiogram (ECG) on Heart Rate Variability for the heart function and genomic by targeting specific targeted gene.

Four studies (Engstrom & Soderfeldt, 2010; Berkovich-ohana, Wilf, Kahana, Arieli, & Malach, 2015; Engström et al., 2010; Kalyani et al 2011) examined by using fMRI. A pilot study by Kalyani and colleagues (2011) has shown deactivation in amygdala, anterior cingulate gyrus, hippocampus, insula, orbitofrontal cortex, parahippocampal gyrus and thalamus during 'OM' chanting. Next, a case study supported by revealing the influence of mantra meditation on emotional involvement by the activation of the medial prefrontal cortex specified for empathy and activation of cingulate gyrus proposed a happy and pleasant feeling (Engstrom & Soderfeldt, 2010). Other fMRI study has investigated that (Engström et al., 2010) mantra meditation response a significant activation at bilateral hippocampal, middle cingulate cortex and bilateral precentral cortex regions. Activation of hippocampal hypothesized for memory function while the middle cingulate and bilateral precentral cortex elicit for motor control and position of the body during meditation. Another study (Berkovich-ohana et al, 2015) has shown somewhat surprising that mantra do not elicit response on human cortex that commonly practiced for cognitive and

emotional impact. The results are conflicting and further studies need to be clarified on the impact of mantra meditation.

Three studies (Thomas, Jamieson & Cohen, 2014; Gao et al., 2017; Chanu & Devi, 2014) of EEG have shown positive outcomes during meditation process. Thomas and others (2014) have shown that mantra meditation brought the highest depth in meditation state. This is parallel with the production of alpha and theta bands during meditation practice that gave significant signs for deep meditative state and emotional calmness respectively. This finding is consistent with research by Chanu and Devi (2014) who stated that mantra can bring calmness by eliciting alpha and theta band during meditation state and decreasing the reading of blood pressure after short term chanting intervention. Moreover, mantra meditation also results on the activation of right insula and inferior prefrontal gyrus, but its roles in meditative state still not fully understood. Another study by Cao et al. (2017) has shown interesting finding that religious chanting Amitabha increased the amplitude of late positive potential during stress provoking picture. Furthermore, there are no significant changes between neutral and stress provoking pictures during meditation. This is because the chanting produces a religious scheme and neutralized the effect of the negative stimulant.

There is only one study (Selvaraj et al., 2008) effects of chanting on heart rate dynamics by using ECG. A significant increase in sympathetic tone has been produced by synchronization of heart rate and breathing during meditation. This study also found similar results where mantra helps in respiratory response as eloquently by Mooventhan (2014). These actions gave relaxation and calmness by synchronizing between cardiovascular and pulmonary systems. Another study (Khalsa, et al., 2009) demonstrated the mapping of brain changes during meditation by using SPECT. Results postulated significant increase in the right temporal lobe and posterior cingulate gyrus and significant decrease in left parietal temporal and occipital gyri. Thus, these results show that Kirtan Kriya chanting has positive influences on the memory, emotional regulations and can bring sense of transcendence and spiritual ecstasy. Next, pilot study experiment using fNIRS on chanting meditation (Bhargav et al., 2016) has shown no significant findings on brain haemodynamic. A sole genomic study (Hosseini, et al., 2016) on Islamic repetition supplication (dhikr) has shown significant reduction in the dopamine gene expression among cancer breast patients. Dopamine is the marker for the level of stress in humans.

## **Clinical**

There were several studies that fall into clinical domain (Kathol & Sgoutas-Emch, 2017; (Burke, Lam, Stussman, & Yang, 2017; Bormann et al, 2017; Oman, & Bormann, 2015). Study by Kathol and Sgoutas-Emch (2016) has revealed that religious practice which is chanting as the best predictor in controlling the alcohol consumption among participants. These results are likely to be related to the roles of religious coping that play an important act to quit, suppress and reduce drinking habit. Therefore, finding reflected that there has positive result between the religious attitude and the prospective attitude towards alcohol consumption. A cross sectional study in United States (Burke, et al., 2017) reported that mantra meditation is among the popular meditation practice. It has been suggested that mantra meditation was used to reduce pain, promoting wellness, improve health status and control smoking and alcohol attitude. Next, MRP has shown positive result on spiritual well-being (Bormann et al, 2017; Oman, & Bormann, 2015). Apart from that, it also has shown positive response on managing PTSD symptoms among veterans (Oman, & Bormann, 2015) after introduced by MRP interventions. Overall findings have shown a variety of positive effects of mantra into human health.

### **Cognitive and neurophysiological**

Three studies have shown positive feedback on cognitive and neurophysiological in term of mind attention (Bormann & Carrico, 2009; Malhotra et al, 2016; Pradhan & Derle, 2012). Repetition of specific mantra can increase focus attention and mindfulness. Two studies on Gayathri mantra (Malhotra et al, 2016; Pradhan & Derle, 2012) have shown repetition of mantra can increase concentration and attention level. It also proposed that concentration have a relation with auditory system that made the mantra mediation is the best technique in promoting concentration level. Apart from that, these effects also may because mantra can decrease other sensations such as sight, hearing, touch and smell from disturbing the thought. Therefore, promote the brain concentration and focus attention.

### **Psychosocial**

Repetition of mantra helps to cope with illness and in reducing the distress symptoms. Studies demonstrated that mantra can manage stress level by broaden the perspective, increase motivation and positive emotions, promote contemplation and suppress negative mood and emotion (Margolin, 2014; Lane, Seskevich, & Pieper, 2007& Gao et al. 2017). In placing more emphasis, Tahir and others (2017) claimed that religious chanting is used to overcome the stress from workload as a deputy head teacher in Malaysia. The religious chanting can be define as one of the ibadah or Islamic practice that can bring calmness and peaceful subsequently bring them nearer to the Creator. In addition, another randomized controlled trial study proposed that dhikr practice can reduce anxiety. A significant reduction has revealed on anxiety level among patient prior to coronary artery bypass graft surgery (Hosseini et al, 2013) after dhikr treatments. Apart from that, two studies on MRP also supported that chanting can promotes health status by suppressing anger among HIV patient, helped to cope with positive attitude living as HIV patient (Bormann & Carrico, 2009) and managed to handle distress symptoms among PTSD patient subsequently increase self-efficacy and mental health status (Oman and Bormann, 2015). Furthermore, a qualitative study has shown that the spirituality and the religiosity element in the chanting and praying made the patient feels happier and accept their problems. Moreover, it also gives them a hope to lead a better life and it also can reduce their suffering as CKD patients (Yodchai et al, 2017). As a nutshell, all the studies supported that repetition of spiritual mantra may give positive impact on stress and assist in coping management.

### **Discussion**

This present review identified 26 research studies that report on repetition of words or known as mantra or chanting specified in religious and spiritual meaning between 2007 until 2017. This review is followed up to review studies by Ospina and others (2007) on meditation practice. However, this paper focussing on specific meditation which is repetition of mantra, spiritual words or chanting. New studies on repetition of mantra were noticed for instance mantram repetition program and dhikr. Interestingly, both studies are repetition of spiritual and religious words with specific meaning based on the meditator. Not only that, these practices also can be done without specific movement, time, or place (Saniotis, 2015; Bormann et al., 2013). As expected, study on OM chanting still dominates the scope of studies especially in neuroimaging field. This result may be explained by the fact that research of OM mantra emerged early other than other mantra such as Transcendental Meditation and Relaxation Response.

Furthermore, meditation is a major area of interest within the field of complementary and alternative medicine (Afifuddin, 2014). In accordance with the present results, previous studies have selected mantra meditation as one of the most popular meditations by novice practiser. In several cases, the clinical population also



tends to choose alternative and complementary methods to treat their illness (B. Poonthananiwatkul, et al., 2016; Yodchai et al, 2017). This result may be explained by the fact that mantra meditation has a significant effect on health, convenience and economical (Lang et. al, 2012).

This finding broadly supports the work of other studies in this area linking spiritual mantra meditation with mental and physical health. Most studies investigating effects on mantra have given positive results especially in relating stress, emotions, anxiety, spirituality, mindfulness and coping mechanism; none of the findings have shown negative effects on body and mental health. Moreover, this current review found that majority of the target population was healthy individuals. However, findings also revealed some clinical population such as cancer patient, PTSD, CKD and patient undergoing coronary artery bypass graft surgery. Therefore, further research should be undertaken to investigate the effects of mantra meditation on wider populations such as substance use disorder, schizophrenia and sleeping disorder. Apart from that, further research on mechanism of mantra meditation on coping illness is also suggested.

The results of this review found that most of the studies were intervention studies. The instruments of studies were broad from psychometric instrument into neurophysiological instrument. However, the quality of study reported that methodology of the study is lacking and questionable. Results reported that 12 out of 17 intervention studies got a poor score. It is possible that these results were influenced by the lack of blinding element in intervention studies. A possible explanation for this might be that naturally meditation needs to be learned as a therapy process. Therefore, the patient needs to be taught and introduced into the therapy to know its effects. That's why to get the full mark in quality score may be not possible. The qualitative and analytic studies have shown a good quality of study but these finding cannot be extrapolated to all.

There are some limitations in this present review. First, this paper cannot draw the effects on the mantra meditation statistically. Meta-analysis cannot be performed due to the wide variety of outcomes measured. Second, a definite conclusion also cannot be achieved in this paper. However, the positive influence of spiritual mantra meditation cannot be overseen after this review. Therefore, a specific and more focussing discussion on the effects of mantra meditation to physical and mental health still need to be investigating further.

## **Conclusion**

As a conclusion, in the past decade, there were many studies on mantra meditation. Most of the findings have positive effects on physical and mental health. Most of the studies were intervention studies but the quality of methodology is still underscored. Even though most of the population were healthy, but there also test on clinical population. Future study on the ability and feasibility of repetition of spiritual mantra meditation need to be explored. Clearly, the potential of future study is limitless.

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