

# The Effect of Prenatal Yoga on Mental Health In Pregnant Women: A Systematic Review

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Abstract: Background: Mental health has become a worldwide concern so that the promotion of mental health and prevention and treatment of mental illness are included in the Sustainable Development Goals 2030. Pregnant women often face the challenge of adapting to the physical, mental, and social changes associated with their pregnancies. Response to these changes can lead to common perinatal mental health disorders including depression, anxiety and stress. Methods: The design used is systematic review. Journal searches are performed on online databases such as Scopus, Science Direct, ProQuest, Google Scholar and Ebsco Host in 2007-2017. Search journals, articles and literature reviews using keywords of prenatal yoga, mental health, and pregnant women. Results: That there are fifteen articles selected from 17,196 articles obtained from five databases. All articles suggest that prenatal yoga practices are significant in lowering depression, anxiety, and stress levels during pregnancy. Conclusions: Based on the literature that has been reviewed, prenatal yoga has been done from many countries to overcome mental health problems (depression, anxiety, stress) in pregnant women who aim to improve the quality of life of mother and fetus. Therefore, this intervention is very useful for women in improving mental health during pregnancy.

## 1 BACKGROUND

Mental health has been a particular concern in worldwide, so that the promotion, precaution, and medication of mental illness has come under Sustainable Development Goals 2030 (Rebar and Taylor, 2017) and is a part of healthy family indicator (Mapping, Sustainable and Goals, 2015). Pregnant women frequently experience some challenges to conform to physical, mental, and social changes that relate with the pregnancy (Kusaka *et al.*, 2016). The response of some changes can cause prenatal mental disorder, such as depression, anxiety, and Post-traumatic Stress Disorder (PTSD) (Yildiz, Ayers and Phillips, 2017).

Depression is commonly defined where the mood level is at the lowest, losing pleasure or indulgence when doing some activities (Fink, 2010), and categorized as mental disorder that prevalently influence women up to 25% (Schuver and Lewis, 2016). Meanwhile, anxiety can be identified when there are physical changes, feeling uptight, and anxious (Fink, 2010). The prevalence of prenatal anxiety is assumed as high as 25% during the first

three months (Vinicius *et al.*, 2015), and up to 21% during the third three months (Ct, 2017). Several studies have logged obstetric complications which relate to prenatal anxiety cases. It includes the more serious medical risks and the risk of perceived complications (Dunkel-Schetter *et al.*, 2016). The assessment of prenatal related anxiety (PrA) indicates that the perceived anxiety involves the feeling of worried about the baby's sanity and safety, the labor, and health and hospital experiences during pregnancy period. Whereas, psychological stress emerges when an individual finds any environmental demands that transcend the capacity of adaptive response (Hewett *et al.*, 2017). Recently, there are several studies discover the prevalence of PTSD as 3.3% during pregnancy (Yildiz, Ayers and Phillips, 2017). Higher level of stress during pregnancy can cause mental disorder and inhibit the growth of the fetus (Kusaka *et al.*, 2016).

Yoga is getting familiar as a therapeutic practice. More than of two-thirds practice uses yoga as a way to improve their health status and level (Cramer *et al.*, 2016). Prenatal yoga implicates some practices and exercises, such as breathing, physical posture,

and meditation. (Rakhshani *et al.*, 2012) which have been assigned as a positive intervention (Battle *et al.*, 2015). The review is conducted to find out the influence of prenatal yoga towards mental health in pregnant women.

## 2 METHODS

The design used in the present study is a systematic review. The considered research design is not limited to a particular research design. The journals were browsed on online database, such as *Scopus*, *Science Direct*, *ProQuest*, *Google Scholar*, and *Ebsco Hostby* by using keywords of prenatal yoga, mental health, depression, anxiety, and stress in the range time of ten years (2007-2017).

However, there were merely 15 articles selected out of 16.095 corresponding with the inclusion criteria, which are: 1) the given intervention is yoga; 2) the sample of the study was pregnant women, participants who suffer complications, smoke, and consume narcotics.

## 3 RESULTS

### Literature Quest

Four hundred and ninety eight journal articles were selected by particular criteria. Then, there were 21 articles picked up regarded the prenatal yoga. Yet, three articles were eliminated due to the inappropriate intervention which does not associate with mental health in pregnant women, and (Rakhshani and Maharana, 2010; Rakhshani *et al.*, 2012; Hewett *et al.*, 2017; dan Babbar *et al.*, 2016). In result, there were 15 articles selected considering the appropriate criteria (Satyapriya *et al.*, 2013; Chen *et al.*, 2017; Beddoe *et al.*, 2009; Battle *et al.*, 2015; Field *et al.*, 2012; Field *et al.*, 2013; Field, Diego, Delgado and Medina, 2013; Bershadsky *et al.*, 2014; Davis *et al.*, 2015; Kusaka *et al.*, 2016; Uebelacker *et al.*, 2016; Newham *et al.*, 2014; Satyapriya *et al.*, 2009; Mitchell *et al.*, 2012; dan Muzik *et al.*, 2012).

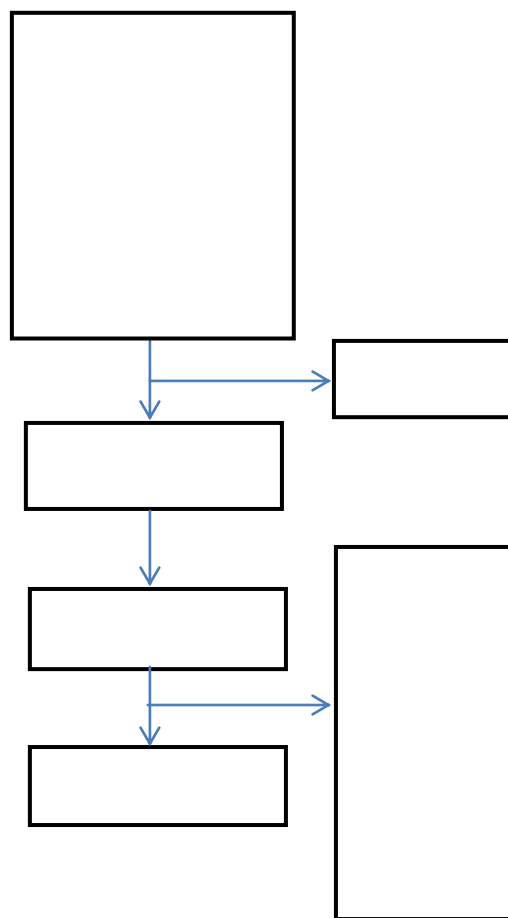


Figure 1: Schema for the result of literature quest

### Respondents Characteristics

There are eight RCT designs, two RCT pilots, one prospective RCT, two groups of pre-post designs, one feasibility study pilot, and one mixed within and between subject design, with participants in 18-45 years old. The respondents are drawn and recruited from a prenatal clinic, a prenatal psychiatric clinic, a community health center, obstetric referral, a prenatal clinic of medical school, midwifery unit, a hospital, and given leaflets from pregnancy service office.

Thirteen articles clarify that the pregnancy of the participants is categorized as primigravida, another article classifies primigravida and multigravida, and the other one does not mention either primigravida or multigravida. The involved respondents come with several criteria, such as not in multiple pregnancy, not a yoga instructor, and not in severe mental disorder. Those studies have been conducted in countries as well as Australia, Japan, India, California, Colorado, and The United States.

#### Interventions Characteristics

Given interventions to respondents in all articles consist of nine prenatal yoga, two mindfulness-based yoga, one prenatal yoga and social support, one prenatal yoga and massage, one tai chi/prenatal yoga, and also prenatal yoga along with treatment-as-usual (TAU).

There are active-control groups in some studies which are tai chi/prenatal yoga at the last session (1), relaxation technique (1), prenatal health education (1), parenting session (1), standard antenatal exercises (3), treatment-as-usual (TAU) (2). Whereas, the other six studies contain inactive-control groups.

The amount of sample is about 16-101 respondents along with the given interventions for 20-120 minutes and two meetings of yoga class at least.

#### Measure Outcome

The results are measured by employing some instruments, for instances, Pregnancy Experiences Questionnaire (PEQ), State Trait Anxiety Inventory (STAI), Hospital Anxiety Depression Scale (HADS), cortisol saliva which is measured by immunoassay kit, enzyme linked immunoassay (ELISA), IgA saliva measured by ELISA double antibody, Prenatal Psychosocial Profile (PPP), Structured Clinical Interview for DSM-IV Axis I Disorder, Mood Module and Psychotic Screen, Interviewer-rated QIDS, Edinburgh Postnatal Depression Scale, Antidepressant Questionnaire, International Physical Activity Questionnaire, Five-Facet Mindfulness Questionnaire, State Anger Inventory (STAXI), Relationship Questionnaire, Center for Epidemiological Studies Depression Scale (CES-D), Profil of Mood States (POMS), International Physical Activity Questionnaire (IPAQ), Client Satisfaction Questionnaire (CSQ-8), The Positive and Negative Affect Schedule-Negative Subscale (PANAS-N), Yoga Adherence Scale, Credibility/Expectancy Questionnaire, Wijma Delivery Expectancy Questionnaire (WDEQ), Beck Depression Inventory (BDI-II), Five Facet Mindfulness Questionnaire-Revised (FFMQ- Revised), and Maternal Fetal Attachment Scale (MFAS).

## 4 DISCUSSION

There are fifteen journal articles have been reviewed and indicates that prenatal yoga is significant in decreasing the level of depression, anxiety, or stress

that is measured by equipping appropriate measuring instruments. There have been substantial number of conducted studies about variety of exercises for mental health (West *et al.*, no date). In addition, physical activities are presumed as one of the ways to intensify mental health significantly and able to subtract the symptoms of depression, anxiety and stress (Dilorenzo *et al.*, 1999).

These days, plenty of evidence indicates that mother's anxiety during the pregnancy can increase the emergence of some risks of preterm labor and the possibility of low birth weight (Newham *et al.*, 2014). Therefore, mental health is considered as the important for pregnant women. In this case, 13 studies have been conducted toward primigravida pregnant women, due to their level of anxiety tends to be much higher (Nieminen, Stephenson and Ryding, 2009).

The response of stress is modulated by hypothalamus-pituitary- adrenal (HPA), where the hypothalamus generates some factors to release corticotropin which stimulates the pituitary to produce adrenocorticotropin that ultimately induces the secretion of adrenal cortisol. Likewise, during the pregnancy, placenta produces some factors to release corticotropin which is able to increase the amount adrenal cortisol secretions (Chen *et al.*, 2017). However, consuming drugs to overcome the increasing level of stress in pregnant women is a wrong way, thus it is necessary and more appropriate to do non pharmacological therapy.

In order to undertake such therapy, yoga, an activity which combines physical activities, relaxation, and breathing techniques into an integrative practice (Kinser and Masho, 2015). Prenatal yoga techniques merely has low and very least effects (Rakhshani *et al.*, 2012), so that it is the most ideal way for pregnancy since the moves of yoga can be easily modified based on necessity and ability of pregnant women (Sun *et al.*, 2010). Once pregnant women's muscle happens to be more tense while doing yoga moves, it helps them to be gain more energy and be more relax (Dykema, 2006). Moreover, yoga assists pregnant women to lessen their exhaustion and inconvenience during the pregnancy (White, 2001).

## 5 CONCLUSIONS

Prenatal yoga has been a common and familiar practice in many countries worldwide to overcome various issues that relate to mental health (depression, anxiety, stress) in pregnant women

which purposes to improve quality of life of mother and the baby. According to numerous reviewed studies, they point prenatal yoga as a significant practice and exercise that can be performed simply to degrade the level depression, anxiety, and stress during the pregnancy, also when in intranatal and postnatal periods. Therefore, this intervention is highly worthwhile for women to improve their mental health during the pregnancy.

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