CHAPTER 3

SCIENTIFIC LITERATURE REVIEW

3.1 INTRODUCTION

Present day workforce faces a multitude of challenges in producing more and more with lesser and lesser resources in the context of a fast changing socio economic business landscape. This is augmented by technological disruptions that is happening at an unprecedented pace in the history of mankind. Employees are under great stress in a highly volatile and insecure job environment, with consequences that are very costly on their personal wellbeing and organizational outcomes.

3.2 MINDFULNESS

Mindfulness and mindfulness based intervention studies has shown exponential growth over the past three decades.

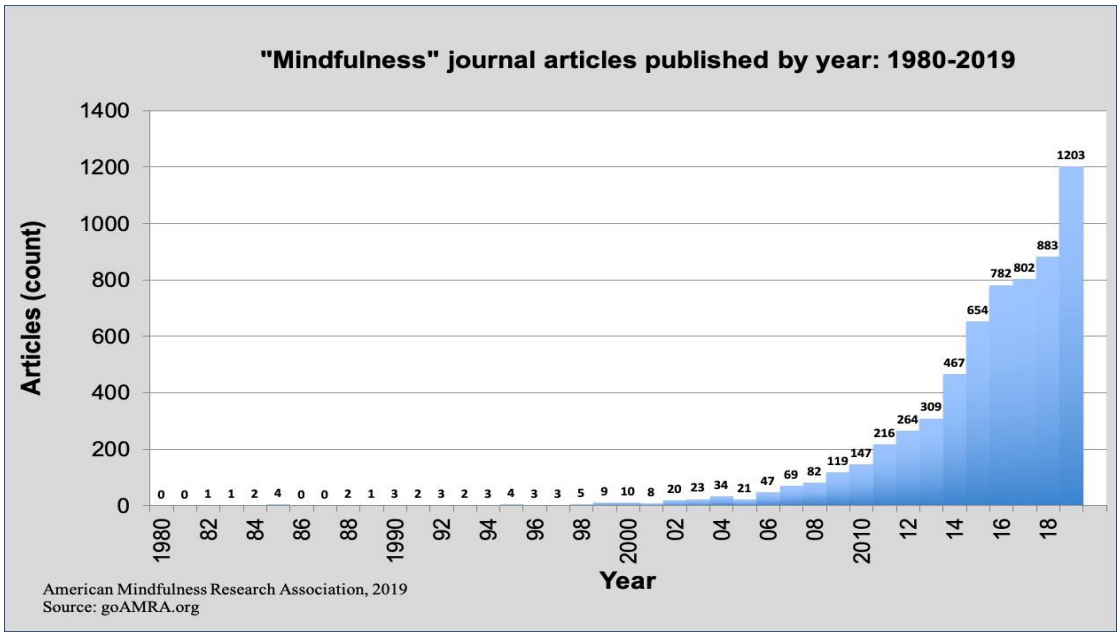

Figure 3.1: Mindfulness Publication Trend

Descriptions of mindfulness and methods of cultivating it originate in eastern spiritual traditions (Bodhi, 2011). The English word 'mindfulness' is an established translation of the Pali term 'sati' , and was first introduced by T.W. Rhys David's in 1881. Etymologically sati is memory, however, the Buddhist technical term refers to a doctrinal concept, which differs from mere 'remembering' or 'recollection' as the basic meanings of the word's root (Gethin 2011).

Theravada and early Buddhist traditions differ slightly on ethical quality of mindfulness (sati). It is implicitly implied knowing right; along with that inner verbalization (labeling, a process requiring memory) is required, to be called as mindfulness. Sati also means the stability of mind's attention- not to get distracted. Wisdom or insight also dawns due to practice of mindfulness (Analayo,2018). Three dimensions shown by Analayo are relationship between mindfulness and memory; awareness of body as tool to mindfulness; mindfulness to face diseases and pain (Analayo,2016). It can be seen more as a metacognitive awareness of the present moment experience (Gethin 2011).

There are divergent views on academic conceptualization and operationalization of mindfulness (Quaglia et al., 2015). Plurality of Buddhist traditions sometimes even makes the process of interpretation challenging. Much emphasis has been laid on lineage-based approaches in Buddhism, which attempts to ease the problem of interpretation (Husgafvel, 2016). Previous study has scrutinized definitions of mindfulness, which are described in detail and thematized to bring out the core elements (Nilsson & Kazemi, 2016). Jon Kabat-Zinn, who pioneered introduction of mindfulness practices in the clinical setup way back in 1979, defines mindfulness as "awareness that arises through paying attention, on purpose, in the present moment, and nonjudgmentally" (Kabat Zinn, 2015).

3.3 MINDFULNESS INTERVENTIONS

Potential benefits of mindfulness interventions range from mental and physical health outcomes to cognitive, affective and interpersonal outcomes(Creswell, 2017).Mindfulness based stress reduction (MBSR) is perhaps the most prominent mindfulness based intervention in the scientific literature. Many other mindfulness interventions have evolved as derivatives of MBSR which has been modified to treat specific populations or outcomes. Few of them are mindfulness-based cognitive therapy (MBCT)(Teasdale *et al.*, 2000) focused on treating depression, mindfulness-based relapse prevention (MBRP)(Bowen *et al.*, 2014)focused on drug addiction and mindfulness-based relationship enhancement (MBRE) (Carson et al., 2004) focused on improving relationship functioning. For review, see (Dimidjian and Segal, 2015). There are also mindfulness-related interventions that incorporate mindfulness training exercises as one component of a broader treatment program. Few examples are dialectical behavior therapy (DBT) for borderline personality disorder and impulse control conditions, acceptance and commitment therapy (ACT) which emphasizes non-reactive observation and metacognitive skills through the use of metaphors, cognitive behavioral stress management (CBSM), integrative body-mind training (IBMT). For review, see(Hayes et al.,2011).

MBSR intervention was originally developed by Jon Kabat Zinn as a clinical intervention for treating chronic pain patients at the University of Massachusetts medical centre (Kabat-Zinn, 1982).This has since then evolved to be applied to many other patient and community populations. MBSR program is for 8 weeks and consists of weekly 2-2.5 hour group based classes with a trained teacher, daily audio guided home practice for at least 45 minutes per day, 6 days a week for 8 weeks and a full day mindfulness retreat on week six (Kabat-Zinn, 1990). The program can be offered

in shorter or longer durations as well. The format is largely skill based and psycho educational. There are considerable discussions and sharing of practices to apply mindful awareness in daily life. (Bishop, 2002).These informal practices complement the formal practices. The program has three main formal practices: body scan (involves mindful attention of the body sensations through the entire body from feet to head, using periodic suggestions of breath awareness and relaxation), sitting meditation (involves mindful attention on the breath as well as on other perceptions and maintaining a state of non-judgmental awareness on the flow of thoughts in mind), hatha yoga practice (involves gentle stretching, breathing exercises and mindful yoga postures) (Alberto Chiesa, 2009).

3.4 PSYCHOLOGICAL WELLBEING

Wellbeing is a central concept in positive psychology. The main focus of positive psychology is eudaimonia, viz. the factors that contribute the most to living a fulfilled life. Six factor model of psychological wellbeing identifies positive relationships with others, personal mastery, autonomy, a feeling of purpose and meaning in life, personal growth and development as the key factors that contribute to an individual's psychological wellbeing and happiness (Ryff & Keyes, 1995).

Positive psychology can be conceived to operate at three levels – subjective level, individual level and group level. Subjective level includes the study of positive experiences such as happiness, joy, well-being, satisfaction, contentment, optimism and flow. Individual level identifies personal qualities that are necessary for being a 'good person', through studying human strengths and virtues such as future-mindedness, capacity for love, courage, perseverance, forgiveness, wisdom and interpersonal skills. At the group or community level, the emphasis is on social responsibilities, altruism, tolerance, work ethics, positive institutions and other factors

that contribute to the development of citizenship and communities (Seligman & Csikszentmihalyi, 2014). Yoga brings about a unified approach at all these levels by focusing on union of mind, body, spirit and working for common good and universal welfare in a selfless manner. Yoga and mindfulness interventions is known to foster physical and psychological wellbeing.

Mindfulness is shown to act as a protective factor even in non-optimal work environments and appears to provide a potential pathway to wellness at the workplace(Schultz *et al.*, 2015). Few studies have provided theoretical accounts of how mindfulness might improve task performance, physical health, and psychological health (Dane, 2011; Glomb *et al.*, 2011).

One of the main areas of interest is the use of mindfulness-based interventions (MBIs) to reduce the effects of stress and distress in working adults who are at risk of higher stress due to the nature of their occupation or work situation (Irving, Dobkin and Park, 2009; Jacobs and Blustein, 2010). Emotion Regulation may be one mechanism of change underlying numerous efficacious treatments(Kim, Nicole and Matthew, 2015). Emotion Regulation refers to the process by which individual influence which emotions they have, when they have them, and how they experience and express them (Gross, 1998). Mindfulness is related to effective emotion regulation(Hill and Updegraff, 2012). Mindfulness can facilitate emotion regulation at both explicit and implicit levels(Remmers, Topolinski and Koole, 2016). One key mechanism by which mindfulness has its beneficial effects is by promoting effective emotion regulation (Hölzel *et al.*, 2011). Mindfulness practice is associated with top-down and bottom-up emotion regulation strategies(Chiesa, Serretti and Christian, 2013).

Different emotion regulation strategies have different consequences. Insights regarding the unique and shared consequences of specific types of emotion regulation

is a promising area for future research(Gross, 2015). Previous studies (correlational, experimental and treatment) converge to suggest that the practice of mindfulness is associated with healthy emotion regulation and may play a causal role in the observed psychological effects (Roemer, Williston and Rollins, 2015). Mindfulness is known to have an inverse relationship with negative affect and a stronger positive relationship with positive affect(Giluk, 2009). Higher mindfulness practice time corresponds to lower levels of negative affect and higher levels of positive affect(Jha et al., 2010).

Overall, the findings support the use of MBIs in organizational settings for the reduction of psychological distress (Virgili, 2015). Efficacy of yoga and mindfulness based interventions in workplace is a burgeoning area of research with significant practical implications. Current study examined mindfulness, emotion regulation, perceived stress, positive and negative affect as indicators of psychological wellbeing and CM was administered as a yoga based mindfulness intervention.

3.5 MINDFULNESS IN WORKPLACE

Most of mindfulness research studies have been done in clinical settings and only few mindfulness intervention studies have been done in workplace settings (Creswell, 2017). First generation mindfulness intervention studies focused mainly on treating adult patients in clinic settings. The last ten years has increasingly witnessed a shift in moving mindfulness intervention studies out of the clinic into institutional settings, for example – in workplace (Glomb *et al.*, 2011; Good *et al.*, 2015),schools (Felver and Jennings, 2016; Sibinga *et al.*, 2016), the military (Thom *et al.*, 2014), prisons (Samuelson *et al.*, 2007), and into populations spanning the entire lifespan (e.g., during pregnancy, kids, older adults). High quality scientific studies are needed to evaluate the safety and efficacy of mindfulness interventions in these unique

contexts(Creswell, 2017).

Empirical evidence on mindfulness at the workplace is scarce and is still in an infancy stage (Jamieson and Tuckey, 2017). Despite promising evidence indicating that mindfulness benefits clinical and nonclinical populations, little work has specifically examined its role in the workplace (Schultz *et al.*, 2015).The time is ripe to carefully examine the role that mindfulness might play in the performance and well-being of individuals at work (Virgili, 2015). Much experimental evidence on mindfulness has emerged from student samples or patient populations seeking treatment for medical or psychological symptoms, thus raising questions of generalizability of current research findings to employees in organizations(Good *et al.*, 2015; Virgili, 2015). Moreover, duration of mindfulness intervention and the time needed to experience benefits is a common question among potential participants (Creswell, 2017). Most participants have competing time demands, expectation of lengthy out-of-class practice may act as a barrier to participating for some (Carmody and Baer, 2008). Research also needs to examine whether there is a dose-response relationship between the amount of intervention exposure and the amount of psychological benefits(Keng, Smoski and Robins, 2011). The practicality of mindfulness training may hinge on the "dose" required for effects, and the sustainability of these effects and their generalizability to workplace is unknown and need further investigation (Good et al., 2015). Testing for intervention follow up effects is limited and is an important area that needs research attention (Creswell, 2017).

Previous study have reported that managers consider the most important sources of work stress to be lack of control and work life balance. Work relationships, control, nature of job and communications were found to be significantly related with work engagement and job satisfaction (Gupta and Tyagi, 2009).Work related factors is

shown to have significant and differential relationship with perception of quality of work life among employees of public and private sectors and entrepreneur's groups (Sinha and Subramanian, 2013). Moment demand is identified as a major factor contributing to job stress among officers and supervisors (Sidhu *et al.*, 2019). People who are in managerial positions have the responsibility of fulfilling organizational goals and also delegating work among employees, seeking their cooperation and support. Placed in such critical positions, their jobs demand them to maintain a delicate workplace balance. Situation can become more challenging when the nature of a company's work involves high-risk operations. In a survey study done in the UK on 200 offshore installation managers across 157 oil and gas installations representing 36 organizations showed that experience may not be a dominant factor in determining safety attitudes and behavior, however those managers who were less experienced and had directive style of leadership were found to overestimate their ability to have control over the situation (Dea & Flin, 2001). Recent works have focused on enhancing the safety aspects in an organization and thereby ensuring a good work ambiance devoid of risks (Iqbal, Waheed, Haider, Tesfamariam, & Sadiq, 2019). Integrity management program was developed and along with that practice of robust safety culture was encouraged. Integrity management program is a safety and loss management system. It is a set of policies, plans, schedules, and documentation of technical procedures. It was shown that these initiatives help manage the workplace stress. Apart from enhancing safety, it is also necessary to empower the employees to handle stressful conditions. Cooper and Cartwright (1997) suggested a three-tier strategy of stress management, the first to reduce the environmental workplace stressor, then to enable the employees to handle stressful situations, and finally offering support to those who are experiencing stress events (Cooper & Cartwright,

1997).

Even though there are many stress management programs offered in corporate sectors, there are limited scientific works on effectiveness of stress management program in such challenging work place setups.

3.6 MULTIDIMENSIONAL INTERVENTIONS

Mindfulness Based Interventions(MBIs) that have been developed for use in work-places or for specific occupational groups differ from those developed for the clinical context in terms of course content and structure (e.g. session length, overall duration (Virgili, 2015). Typically truncated versions of well-validated programs (e.g., MBSR) are deployed in workplace settings. These adaptations are made without drawing on specific knowledge of how and why these programs work (Good *et al.*, 2015).Mindfulness interventions are multidimensional in nature and involve multiple active components. Future research should examine, how individual components of mindfulness intervention contribute to overall treatment effects (Keng, Smoski and Robins, 2011). Little work has been done to identify the active ingredients in these programs. Which specific 'active ingredient' of the intervention produces what effect is still not known (Chiesa, Serretti and Christian, 2013). If different components of mindfulness training have differential effects, then organizations may tailor interventions based on program goals (Carmody and Baer, 2008). Sitting meditation and mindful yoga are found to produce greater differential effects in psychological wellbeing (Sauer-Zavala *et al.*, 2013). Most often previous studies have usually evaluated mindfulness meditation in the context of a mindfulness-based program such as MBSR. MBSR uses meditation as one element among others (e.g., psychoeducation). Hence, the observed effects are not singularly attributable to the meditation component (Eberth and Sedlmeier, 2012).

In one of the MBSR intervention studies, an unexpected finding was the strong association between the mindful yoga form of practice and changes in other variables, including increased mindfulness skills, reduced symptoms and improved wellbeing. Given that mindful yoga was practiced on fewer days and for fewer total hours than the other formal practices, these results are striking and bear further investigation (Carmody and Baer, 2008). Most often mindfulness research studies have emphasized mind or thought control, but the role of body regulation has often been underemphasized. In practices like IBMT or yoga, mind-body interaction facilitates the mindfulness process and outcomes (Tang and Tang, 2015). Also there appears to be little evidence to suggest that MBIs are more effective than similar stress management interventions, such as yoga and relaxation, for reducing psychological distress in working adults (Jain *et al.*, 2007; Virgili, 2015). As a means of providing a unified body mind experience, Yoga has few equals.(Salmon *et al.*, 2009).

3.7 YOGA

Yoga is one of the six foundations of Indian philosophy and offers wisdom base to study, explain, and experience the complexities of the mind and human existence (Feuerstein, 1998). *Patanjali*, an ancient yoga sage, in his Yoga Sutras, defined yoga as a technique used to still the mental fluctuations of the mind to reach the central reality of the true self (Iyengar, 1966). A creative synthesis of the western and eastern concepts takes us in the direction of holistic development (Sharma,2007).

Yoga includes mind-body practices, such as *yogāsana*s (body postures), breathing, meditation, and works at a multidimensional level for improving physical, emotional, and spiritual well-being. While the original purpose of yoga practice was to help the individual develop higher states of consciousness, more recently yoga practice is

being utilized for a variety of psychological and physical disorders as an efficacious adjunct treatment.

Yoga studied may vary greatly in terms of specific tradition and style, location, class level, teacher characteristics, and relative vigor and intensity of practice. Little research has systematically examined different forms of yoga and only a little information is provided on the specific types of yoga practiced by participants. Results show that different styles and forms of yoga practice, even done for a short duration, can improve emotional wellbeing and resilience to stress in the workplace (Hartfiel *et al.*, 2011).

In an experimental study in a manufacturing unit, participants who were introduced to the yoga way of life showed a significant positive difference in burnout and stress with those in the physical exercise group. The difference in the EI scores between the yoga group and the physical exercise group was also statistically significant at the end of the experiment (Adhia, Nagendra and Mahadevan, 2010). In MBSR, Yoga was originally included for the practical purpose of helping medical patients overcome disuse atrophy (Kabat-Zinn, 1990).

Mindfulness is an important part of yoga practice. Yoga is one of the great gifts for the humankind. Availing yourself of it and bringing mindfulness to your body and mind through the gateways of yogasanas and the flowing sequences of various postures can be extraordinarily uplifting, rejuvenating, transporting, and just plain relaxing.

Yoga is universal, and the postures reflect the extraordinary range of the human body's capacity for movement, balance and stillness (Kabat-Zinn, 2017). Yoga interventions foster psychological wellbeing (Conboy, Wilson and Braun, 2010; Gard

et al., 2012; Hartfiel *et al.*, 2012). Practice of yoga increase levels of trait mindfulness in healthy population, who had no prior yoga experience (Shelov, Suchday and Friedberg, 2009). Advanced practitioners of yoga are reported to have higher levels of mindfulness and lower levels of stress. (Brisbon and Lowery, 2011).Highly involved yoga practitioners had a significant increase in levels of mindfulness and psychological wellbeing(Gaiswinkler and Unterrainer, 2016).

3.8 CYCLIC MEDITATION

Cyclic meditation (CM) involves a combination of 'stimulation' and 'relaxation' practices. Based on the knowledge shared in ancient yoga texts, such a combination may be especially helpful to reach a state of mental equilibrium (Sarang and Telles, 2006). The key is to practice with awareness. The current evidence base on cyclic meditation shows that the practice of CM significantly reduces oxygen consumption and energy expenditure to a greater degree (32.1%) than a comparable period of supine rest (Sarang and Telles, 2006).The CM practice has also been shown to decrease occupational stress levels and baseline autonomic arousal (Vempati and Telles, 2000).There is also improved performance in a letter cancellation task which requires selective attention, concentration(Sarang and Telles, 2007). Practice of CM has shown improved memory scores and decreased state anxiety. (Subramanya and Telles, 2009). Practice of CM during day time has been shown to increase the percentage of slow wave sleep in the subsequent night (Patra and Telles, 2009).

Practice of CM has shown significant reduction in stress levels, significant improvement in two positive subscales and reduction in two negative subscales on panas (hankey et al, 2013). A 5 day intervention of CM practice found significant reduction in five negative mood subscale measures of poms. The study found there were improvements in positive affect, self esteem score and decrement negative affect

scores after smet training program (rabindra, pradhan and nagendra, 2014). Following the practice of cyclic meditation, all the domains of general health questionnaire(ghq) were higher and the total ghq change was found to be significant (maharana et al., 2014). A controlled study on the immediate effect of a single session of cyclic meditation suggested higher levels of state mindfulness following the practice. (vinchurkar et al., 2014) . Previous review of scientific studies on CM summarizes the benefits across dimensions (subramanya & telles, 2009)

3.9 CONCLUSION

Psychological distress is a significant challenge at workplace and is known to have a huge adverse effect on both employee health, wellness and organizational outcomes. Preliminary research in embedding mindfulness and yoga interventions into workplace show promising results. In existing mindfulness interventions, the yoga component has been found to produce striking results that need further investigation. In the field of mindfulness research, the role of body regulation has often been underemphasized. Workplace interventions need to address practical considerations of limited time availability, given competing priorities and scare resources. Also testing for intervention follow up effect is limited. Cyclic meditation is shown to have many potential benefits and can be a potential yoga based mindfulness intervention to enhance psychological wellbeing in working professionals.