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INTEGRATION OF YOGA IN A PHYSIOTHERAPY TREATMENT FOR THE LOWER BACK PAIN.

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The primary purpose of this report is to conduct a systematic review of existing research on the effects of yoga on lower back pain. Electronic databases from PubMed, CINAHL, Scholarworks, JSTOR, and Google Scholar were the primary source of the search with the keyword 'yoga and lower back pain'. Search results were filtered between recent research from 2020 to 2021. A total of 24 relevant studies were identified initially; of those, ten were excluded based on the abstract and the title, irrelevant to this report. The remaining 14 studies were thoroughly evaluated after carefully reviewing the full text. Based on inclusion and exclusion criteria, seven studies were excluded. Seven of the studies were considered, including integration of yoga in physiotherapy treatment for lower back pain. Three studies were focused and reviewed, which resembled the most with the search criteria. The report is primarily a literature review and secondarily analysis of qualitative data collected during the more extensive multi-method studies in recent years by other researchers.

According to Lawrence RC, 1998 and Hides et al. 2001, an estimated 70% of the population will experience some lower back pain with 85% reoccurrence in their lifetime. Lower back pain is a common and often disabling musculoskeletal condition (Lawrence RC et al 1998 and Hides JA et al 2001).
Recent studies suggest that physiotherapists integrating yoga in their treatment are widely practiced. The number of physiotherapists including yoga in their treatment plan for lower back pain is rising (Wims and York, 2017).

Physiotherapists use yoga as part of the treatment for individuals with various health conditions, including lower back pain, to improve clients' physical and mental health. Findings support the functional outcome after the client's yoga participation in physiotherapy treatment for lower back pain. Physiotherapist assessment and documentation could contribute to evidence-based literature on why physiotherapists use yoga for lower back pain.

In conclusion, integrating yoga can be an effective therapy, significantly reducing lower back pain. However, further research studies on larger sample size and what kind of yoga have higher efficiency in relieving lower back pain would be beneficial.

Keywords:
Yoga, Lower Back Pain, Physiotherapy.

CONTENTS

1 INTRODUCTION

Lower back pain is a pain in the back below the thoracic region, lumbosacral region, and sacroiliac region, which is occasionally accompanied by radiation discomfort in the lower limbs (Klaber-Moffett J, Kovacs F, et al; 2006). Chronic lower back pain frequently results in discomfort and functional incapacity, both of which have a detrimental impact on one's quality of life (Hayden JA, Wilson et al. 2019 & Morlion B, 2013). According to Lawrence RC (1998) and Hides et al (2001), an estimated 70% of the population will experience some sort of lower back pain with 85% reoccurrence in their lifetime. Lower back pain is a common and often disabling musculoskeletal condition (Hides JA et al; 2001). It is the most common cause of limited activity in people below the age of 45. It is the second most frequent reason for visits to a physician, the third most common reason for surgery, and the fifth most common cause of hospital admission in the United States (Andersson GB, 1999). Lower back pain has caused impaired function in 7.3% of the world population, limiting them from returning to work. Over 17% of the people refrain from seeking any treatment believing the lower back pain is incurable and part of aging. However; many sufferers are no longer comfy with the treatment of lower back pain and seek medical attention from orthopedists, physiotherapists; while many patients come up with the solution by themselves for curing the lower back pain (Saper RB, Lemaster C, Delitto A, Sherman KJ, Herman PM, Sadikova E, et al. 2017).

The word “yoga” is an Indian word, specifically from the Sanskrit language, which means “yog”, “combine” or “union” for a harmonious relationship between body, mind, and emotions to unite individual human spirit with the divine spirit or the True Self (Prabhupada AC, 2001; Iyengar 2002, Chopra D, 2002). Yoga is a technique that involves training the body and mind towards self-realization, the practice of which has Astha- Anga meaning eight components, limbs. The eight components in practice focus on conduct within the society, personal discipline, postures/poses (“asanas”), breathing, concentration, contemplation, meditation, and absorption/stillness

(“dhyana”). As classically described, yoga poses comprise just one of the eight components of a broader physical, mental, and spiritual health (Jain R, 2009). Modern Yoga usually combines various postural positioning, concentration on breathing, concentration on thought process and meditation. A regular yoga class involves an individual or a group led by an instructor for a ~ 60–90 minute session. The yoga instructor gives a verbal and physical touch to guide correct postures, control breathing, and focus on what is being done. Yoga instructors mostly encourage positive self-images. Iyengar yoga focuses on maintaining postures, and it includes various modifications such as scarves, belts, firm blocks, mats, chairs, blankets; to accommodate individuals with physical limitations (Iyengar, 2002; Chopra D, 2002 and Mehta, 1990).

According to Cramer, Ward, and Steel (2016); 20.96 million adults in America alone changed the traditional exercise to yoga last year. Yoga practice is considered holistic, improving and promoting mental and physical well-being, involving poses, breathing techniques, and meditation (Woodyard C, 2011).
Yoga introduction is gaining popularity among physiotherapists and allied healthcare in various medical conditions (Wims and York, 2017).

Recent clinical trials support the evidence and suggest that including yoga in a physiotherapy treatment may relieve lower back pain (Sullivan MJ, Reesor K, Mikail S, Fisher R, 1992). Introducing yoga in treating lower back pain by physiotherapists and other health professionals has shown dramatic improvement and effective modality for patients' functional progress and treatment outcome (Beazley, Patel, and Davis, 2017). According to Pradhan BB (2015); yoga has beneficial effects in patients, improving balance, reducing pain, and improving gait, muscle power, and functional ability. However, this report review focuses primarily on the pain in the lower back. According to Wims et al (2017), the physiotherapist has introduced yoga in the treatment for some time now. However, the exact time is unknown when a physiotherapist first used yoga to treat lower back pain patients. However, the study conducted amongst the 333 physiotherapists by Wims et al (2017). suggests that more and more physiotherapists are introducing yoga in the clinical practice and the home exercise program. Findings indicated that 70.6 % of participants used yoga to target functional outcomes, 45.8 % utilized yoga more than four times during the previous

month, and 36 % reported recommending yoga as part of their client's home exercise program. The study by van der Kolk B, Stone L, West J, et al (2014); evaluated how Physiotherapists utilized the yoga poses in the treatment of lower back pain and what poses physiotherapists integrate for what kind of back pain with in-depth information of why, how, and with which patients the yoga was introduced into treatment in the clinical practice.

Nambi's (2014) and Tekur's (2008); systematic research showed promising results that yoga has indeed provided long-term relief in lower back pain and improved bodily functions.

2 METHODOLOGY:

A search in Electronic database from PubMed, CINAHL, Scholarworks, JSTOR, and Google Scholar were conducted from the beginning of 2020 of "yoga and lower back pain" returned with 24 relevant studies were identified initially, of those 10 were excluded based on the abstract and the title; irrelevant to this report. The remaining 14 studies were thoroughly evaluated after carefully reviewing the full text. Based on inclusion and exclusion criteria, seven studies were excluded, and 7 of the studies were taken into consideration which included integration of yoga in physiotherapy treatment for lower back pain. However, due to the limited research in recent years and period criteria from the beginning of 2020, a total of 3 studies were carefully reviewed, with most resemblance focusing on pain management in lower back pain after integrating yoga in the physiotherapy treatment.

The Articles excluded; not relevant to this report; based on exclusion criteria, for example, comparison of yoga for improvement in functional ability, psychological effects of yoga, the cost-effectiveness of yoga compared to physiotherapy treatment, the impact of yoga in the advancement of posture, yoga for improvement in disability, etc.

The report is primarily a literature review and secondarily analysis of qualitative data collected during the more extensive multi-method studies in recent years; other researchers focus on pain after integrating yoga for lower back pain.

The author of this report has not conducted any research on subjects; nor collected any data. Instead, reviewed the studies already documented by other researchers.

3 RESULTS:

All three studies that focused on the pain outcome exhibited positive effects of yoga. The studies yielded a significant improvement by decreased pain level on a visual analog scale of 1 to 10 after integrating yoga in physiotherapy treatment of lower back pain. The data indicated practicing yoga improves pain in lower back pain significantly.

After implementing yoga, physiotherapy treatment for the lower back lowered the pain and showed improvement in physical functions and emotional well-being, improved balance and gait, and better sleep; However, those other outcomes are considered secondary and are not part of the focus of this report. Although secondary outcomes are not part of this report; however, the reduction in pain could result from an improvement in those secondary outcomes and wise versa. No statistical significance validates that observing lowered pain threshold could be necessary due to yoga or combined with other physiotherapy treatments (Williams KA, Petronis J, Smith D, Goodrich D, Wu J, et al. 2009). The yoga group has less pain noted on McGill Pain Questionnaire and Visual Analog Scale suggests significant improvement in pain. According to the studies conducted by Williams et al (2005), showed greater reduction and a significant drop in pain (Visual Analog Scale) and lower functional disability measure on pain disability Index and Oswestry Disability Index as well as improvement from depression (Beck Depression Inventory-Second Edition) among the subjects randomized to the yoga intervention group (Williams K, Abildso C, Steinberg L, Doyle E, Epstein B, et al. 2005). The limitation documents of these studies were primarily reliance on the self-report measures and lack the primary measurement tools that co differ from the actual intensity of the pain (Williams KA, Petronis J, Smith D, Goodrich D, Wu J, et al. 2009). According to Tekur P, Nagendra HR, Raghuram N, et al. (2012); the effect of yoga on lowering back pain (Visual Analog Scale) improves disability (Oswestry Disability Index) and enhances the quality of life (World Health Organization Quality of Life-BREF). The yoga gr and physiotherapy treatment also practiced regular meditation, chanting vowels, and attending the yoga lectures. The yoga group showed a more significant increase in flexibility and reduction in pain (section 1 of the Oswestry Disability Index) than the

control group (Tekur P, Chametcha S, Hongasandra RN, Raghuram N, 2012). The outcome studied on the group of subjects amongst 17 subjects were already involved either with yoga or a physical therapy intervention to treat lower back pain before this study, among those 17 subjects, no significant improvement in pain was noted after six weeks (Evans DD, Carter M, Panico R, Kimble L, Morlock JT, et al (2010). A significant limitation of this study is the presence of self-selection bias because the participants were already enrolled/self-selected into the yoga or physical therapy groups before the examination.

Several studies support yoga's effectiveness in reducing chronic lower back pain. A survey conducted by Williams et al (2009); evaluated yoga at clinical levels for pain (using the Short Form-McGill Pain Questionnaire), reduced mobility due to pain (Tampa Scale of Kinesiophobia), and several subjective beliefs regarding pain (Survey of Pain Attitudes) (Williams KA, Petronis J, Smith D, Goodrich D, Wu J, et al. 2009). The yoga integration showed the results doubled in reducing pain and usage of pain medication compared to the control group. However, the study did not conclusively suggest any difference in improvement in the movements; the researcher stated there could be not enough subjects and samples available (Williams et al.). The same research by Williams et al.; However, demonstrated the effectiveness of Iyengar yoga on improving lower back pain after 24 weeks of participation (Williams K, Abildso C, Steinberg L, Doyle E, Epstein B, et al. 2005). Individuals randomized to the yoga group showed more significant improvements in pain intensity than in the control group. The pain was measured using a visual pain scale modification of the visual analog scale, which was again suggested by Williams et al.; not the standard measurement tool, as it differs from subject to subject how they perceive and rate the pain. According to Groessl EJ et al (2012); the reduced pain was directly related to the actual participation time in the yoga program; higher attendance by participants resulted in a higher reduction in the pain (Groessl EJ, Weingart KR, Johnson N, Baxi S. 2012). Another study by Saper et al., in low socio-economic subjects, concluded there was no significant improvement in lower back pain after 12 weeks of participation (Saper RB, Sherman KJ, Cullum-Dugan D, Davis RB, Phillips RS, et al. 2009).

A study conducted by Evans DD, et al (2010); resulted in significant benefits of yoga intervention in reducing lower back pain after six months of participation (Evans DD, Carter M, Panico R, Kimble L, Morlock JT, et al. 2010).

4 DISCUSSION:

Lower back pain is a common occurrence in the working adult age group to retired and older adults, with 70% of the population suffering from lower back pain once in their lifetime and 85% chances of reoccurrence (Lawrence RC (1998) and Hides et al. (2001). Lower back pain occurrence is more frequent in individuals with the previous injury to the back, harsh work environment, low job satisfaction, age, and other underlying musculoskeletal injuries (Latimer J, Maher CG, Refshauge K, Colaco I. T; Deyo RA, Weinstein JN and Waddell G, Burton AK. 1999). There is variable evidence to support the effectiveness of nonpharmacologic and medication therapy (Chou R, Huffman LH. 2007). This literature review suggests that yoga effectively reduces pain and disability and improves physical and mental function. The Sherman et al. study employed used a three-arm intervention, which also supports the effectiveness of yoga in reducing pain in the lower back (Sherman KJ, Cherkin DC, Wellman RD, Cook AJ, Hawkes RJ, et al. 2011). To this point, compared to traditional exercise programs derived from physical therapy, yoga could provide superior compliance and benefit in the long term (Evans DD, Carter M, Panico R, Kimble L, Morlock JT, et al. 2010). A vital suggestion arises from their study that the patients might more easily remember yoga poses once learned because the poses and their associated names tend to have universal recognition. Finally, yoga programs, even ‘adaptive’ or ‘senior’ classes, are accessible in most cities, studios, local gyms, recreation centers, and hotel wellness centers (Evans DD, Carter M, Panico R, Kimble L, Morlock JT, et al. 2010). Evans DD et al (2010); the study also suggested that in contrast to yoga, the physical therapy program may be complicated to understand by patients, patients can misplace the printed or written instructions of the exercise program, or even furthermore, patients might not feel confident enough to continue physiotherapy exercise program at home compared to yoga.

Long-term studies are needed to explore further in detail the effects of yoga in decreasing pain in the lower back, as most of these studies lasted less than a couple of months of treatment, except for the investigation by Tilbrook et al. (Tilbrook HE, Cox H, Hewitt CE, Kang’ombe AR, Chuang LH, et al. 2011). Lastly, yoga and safety; data from the most extensive and recent trials suggest that about 10–15% of patients noticed

increased pain temporarily. However, most patients experience considerable benefits without any significant problems with lower back pain. Overall, according to Pence PG (2011), yoga is an intervention that appears to be well-balanced and should be included in the physiotherapy treatment. A more significant percentage of healthcare workers' healthcare systems mainly treat a chronic disease than acute illness.

The main finding of this study suggests that yoga can decrease pain and increase functional ability in patients with chronic lower back pain. Given these findings, yoga may be an effective treatment for chronic lower back pain.

However, there are limitations to this systemic review, mainly concerning the publication bias. Publication bias tends to occur while published research is limited to participants and does not represent the total population. The benefits reported in these studies might not necessarily benefit the other group of subjects (Groessl, EJ.; Sklar, M.; Chang, DG. 2012). It is also unclear what kind of yoga is ideal and how long the yoga session should last, and the study lacks the follow-up data once the participants stop yoga.

5 CONCLUSION:

Yoga inclusion in back pain appears to be as effective as other non-invasive and non-pharmacologic treatments in reducing lower back pain. Yoga seems to be more effective in reducing pain severity when compared to usual care or no care. Yoga appears to be an effective and safe intervention for chronic lower back pain.

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