

7.0 DISCUSSION

7.1 DISCUSSION FOR THE STUDY-1

The most obvious finding to emerge from this study, was that resilience is positively correlated with mindfulness and empathy. This finding seems to be consistent with other research which also found a significant correlation between resilience and mindfulness (Kemper et al., 2015). According to a survey, older nursing students were more empathetic and resilient (Pitt et al., 2014). On the other hand, resilience is negatively associated with repeated negative thinking, similar result was reported in a study among anxiety and depressive patient's (Min, Yu, Lee, & Chae, 2013). Both resilience and mindfulness are considered as a measure of stress coping ability. This can be the reason behind our result.

The main finding of this study was that mindfulness alone predicted 23% of the variance in resilience. This result can be supported by a study which reported mindfulness predicted 44% of variance in resilience among university students (Keye & Pidgeon, 2013). Similarly, total dispositional mindfulness score and the sub score of acceptance explained 45% of the variance in resilience among 3rd year BSc nursing students (Chamberlain et al., 2016). Our results are in line with other previous studies. Among health service professionals higher levels of both resilience and mindfulness were predictors of psychological distress and burnout (Harker, Pidgeon, Klaassen, & King, 2016). Being mindful and having an accepting attitude toward experience bestows on psychological resilience, especially when exposed to trauma (Thompson, Arnkoff, & Glass, 2011). So it is essential to enhance personal resilience to cope with the demands of profession (Jackson, Firtko, & Edenborough, 2007).

Furthermore, unproductive RNT explained 8% of variance and RNT consuming mental capacity could predict only 2% of the variance in resilience. However, less rumination was

also one of the predictor of resilience (Min et al., 2013). And there is no single demographic, personality or biological factor that can predict or enhance resilience more than a small degree (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014).

Our results partially support aim of the study, since only mindfulness and repeated negative thinking could predict resilience but not empathy. Reason remains unclear which needs to be explored in future research.

These factors; active coping, cognitive flexibility, and social support aid in the maintenance of resilience (Genet & Siemer, 2011). Specifically, use of positive reappraisal and less rumination can predict high resilience in patients with anxiety and depression (Min et al., 2013). Positive reappraisal is the main factor in protecting against the ill effects of stress (Kalisch, Müller, & Tüscher, 2015). Substantially it plays a significant role in enhancing resilience (Quirin, Kent, Boksem, & Tops, 2015) and mindfulness plays key role in positive reappraisal, it helps in the process of shifting of thoughts i.e., decentering which aid in positive reappraisal (Garland, Gaylord, & Park, 2009). Even though reappraisal is essential in increasing resilience other factors like personal, socioenvironmental factors also contribute to a great extent (Southwick, Pietrzak, Charney, & Krystal, 2015). Reason for our result could be explained based on the role of positive reappraisal as a stress coping strategy. Positive reappraisal is described in transactional theory of stress as an active coping strategy (Lazarus, & Folkman, 1984), in which stressful events are re-construed as benign, valuable, or beneficial (Lazarus, & Folkman, 1987).

7.2 DISCUSSION OF THE STUDY-2

The Study's aim was to illustrate the correlates and predictors of spiritual well-being among nursing students. Considerably, there was a positive correlation between spiritual well-being (SWB and four-domains), mindfulness, satisfaction with life, and self-compassion in our study. As mentioned earlier, our results are in coherence with the previous studies. This study was successful in eliciting the predictors of spiritual well-being. Satisfaction with life, mindfulness, and self-compassion significantly explained 24% of the variance on the Spiritual Well-being (SWB).

Similarly, 24% of the variance was explained on the personal domain of SHALOM by satisfaction with life, self-compassion, and mindfulness. Personal domain assesses the spiritual well-being of an individual based on his/her sense of identity, self-awareness, joy in life, inner peace and meaning in life (Fisher, 2010). Meaning in life and satisfaction with life (Jafari et al., 2010), mindfulness (Carmody et al., 2008) were significantly correlated. Self-compassion is being kind towards self during hardship/suffering and being mindful aids to be compassionate towards self (Neff, 2003). Even though these variables are different constructs, there seems to be an association between them. Studies in future need to explore in detail, that can interpret causal inference.

Likewise, 17% of the variance was predicted by self-compassion and mindfulness on the communal domain of SHALOM. Love, forgiveness, trust, respect for others and kindness toward other people are measures in the communal domain of SHALOM (Fisher, 2010). Being mindful makes an individual aware of his suffering, leading him to take necessary actions to alleviate suffering i.e. self-compassion (Neff, 2003). Both self-compassion and compassion are related to each other (Neff & Pommier, 2013). When an individual is self-

compassionate he/she can be compassionate towards others (Neff, 2003), i.e. When you are kind to yourself, you can be kind towards others during suffering.

Notably, nursing students had moderate spiritual well-being, in which connectedness towards others was high and their religious attachment was less (Hsiao, Chiang, & Chien, 2010). Also, high level of spiritual well-being (religious and existential well-being) was reported among nursing students (Pesut, 2002). The findings of our study reported nursing students experienced a high level of spiritual well-being on all the four-domains of spiritual well-being refer Table 6.2.2. Our results are in line with the previous studies.

Moreover, mindfulness and satisfaction with life explained 12% variance on the environmental domain. Connecting with nature, with harmony, sense of awe and magic in the environment are measured in the environmental domain of SHALOM (Fisher, 2010). The instrument FMI measures mindfulness on unidimensional factor i.e. Being present. Though mindfulness and satisfaction with life have its role on the environmental domain of SHALOM, this needs to be explored in the future studies.

Substantially, satisfaction with life alone explained 12% variance on the Transcendental domain of SHALOM with statistical significance. A personal relationship with the Divine/God, worship of the Creator, oneness with God, peace with God and prayer in life measures in the transcendental domain of SHALOM (Fisher, 2010). Previous studies also have reported the relationship between life satisfaction and connectedness with the Divine (Fabricatore, Handal, & Fenzel, 2000; Jafari et al., 2010). In addition, females are generally more spiritual and have faith than males (Saxena, 2006). Most of the participants in our study were females. The reason remains unclear, why mindfulness and self-compassion could not explain variance on the transcendental domain.

In contrast, among Turkish university students, 21% of the variance was explained on spiritual experiences (connection with the transcendent in daily life) by self-compassion i.e. 15% by overidentification, 4% common humanity and 2% by Self-judgment (Akin & Akin, 2017). However, religious well-being alone explained 31% of the variance in satisfaction with life, whereas, spiritual well-being (religious and existential well-being) and hope explained 40% of variance in satisfaction with life among cancer patients (Jafari et al., 2010). In addition, stressors, personal spirituality and interaction between stressors and personal spirituality predicted 21% of the variance in satisfaction with life. The same study reported the role of personal spirituality in maintaining satisfaction with life while coping with stressors (Fabricatore et al., 2000)

Even though the variance was 4%, the role of religion in the transcendental domain cannot be ignored. According to Fisher (2013), without connecting to the God/Divine spiritual well-being remains incomplete. Connecting with the God is identified through the religion. Our results are in line with the original study by Fisher.

We can conclude from our results that, satisfaction with life and self-compassion plays a significant role in personal and communal domains, whereas, satisfaction with life was a predictor of the transcendental domain of spiritual well-being. Whilst, the role of mindfulness cannot be ignored because of the small percentage of variance on personal and communal domains, and 9% and 8% of the variance were explained by mindfulness on the environmental domain and on Spiritual Well-being (SWB) respectively.

Also, the most important findings were that the results of exploratory factor analysis and reliability testing of SHALOM were in coherence with the results reported by Gomez and

Fisher (2003) and Fisher (2013), reporting Cronbach's alpha for SHALOM full-scale $\alpha=.94$, and for all the four-factor were $\alpha \geq .72$.

7.3 DISCUSSION OF THE STUDY-3

Our study findings have revealed, that an 8-week yoga intervention significantly improved mindfulness, self-compassion, low back and hamstring flexibility, pinch strength (chunk and pulp) among nursing students in the yoga group than compared to the WLC group. Also, there were significant improvements in peak expiratory flow rate and hand dexterity in both the groups. Even though, our results were non-significant following improvements were witnessed. There were improvements in resilience and perceived stress in the yoga group but not in the WLC group. However, there were improvements in satisfaction with life and pinch strength (lateral) among both the groups. Contrary to our expectation, decrease in the empathy was reported in both the groups, but significant decrease was noticed in the WLC group. Likewise, there was a significant decrease in left handgrip strength in the WLC group and non-significant results in the yoga group for both hands.

The following studies were in line with our results. Yoga practitioners showed significant improvement in mindfulness (Brisbon & Lowery, 2011; Gaiswinkler & Unterrainer, 2016; Hewett et al., 2011). An 8-week yoga intervention significantly improved mindfulness among healthy population in the experimental group than compared to the WLC group (Shelov, Suchday, & Friedberg, 2009). An 11-week yoga intervention (one hour per week) among medical students significantly increased self-compassion though, there were improvements in empathy and perceived stress results were non-significant (Bond et al., 2013).

Self-compassion is considered as the potential mechanism through which yoga intervention reduces perceived stress (Gard et al., 2012; Riley & Park, 2015). Even, in our study there was a decrease in perceived stress among participants of the yoga group than the WLC group, but results were non-significant. Many studies have reported that, yoga is an effective practice in the management of stress (Hewett et al., 2011; Bond et al., 2013; Granath, Ingvarsson, von Thiele, & Lundberg, 2006; Rocha et al., 2012; Simard & Henry, 2009; B. E. Cohen, Chang, Grady, & Kanaya, 2008; Chong, Tsunaka, Tsang, Chan, & Cheung, 2011; Szabo, Nikházy, Tihanyi, & Boros, 2016; West, Otte, Geher, Johnson, & Mohr, 2004; Goldstein et al., 2016; Prasad, Varrey, & Sisti, 2016).

This result was contrary to our expectation, as there was a decrease in empathy in the both groups. Previous studies have also reported similar findings, that there was a decline in empathy among the nursing students (Ward et al., 2012; Wilson et al., 2012). Though it looks like short duration (8-week) to witness a decline in empathy our participants had to complete their academic requirements and prepare for main exam along with their regular clinical posting. The reason for our result can be supported by the following study. According to a systematic review, among medical students and residents decline in empathy encountered during clinical posting, and distress caused by hidden formal/informal curricular demands of the profession (Neumann et al., 2011).

Subsequently, there was improvement in satisfaction with life in the both groups, but our results were non-significant. There was a significant association between satisfaction with life and participation in physical activity (Baştuğ & Duman, 2010). During the phase of intervention students of both the groups were participating in cultural and sports activities. This may be the reason for improvement in satisfaction with life in both the groups. Our results are in accord with previous research studies. In a RCT, 6-week yoga intervention one hour

/week improved life satisfaction and resilience to stress among university staff (Hartfiel et al., 2011). In our study, also there was improvement in resilience in the yoga group but not in the WLC group.

In this study, there was a significant improvement in low back and hamstring flexibility among the yoga group students than compared to the WLC group. Our study result was in coherence with the following research studies: There was an increase in hamstring flexibility after 12-week (Lau, Yu, & Woo, 2015), 20-week (90 min session per week) Hatha yoga intervention (Grabara & Szopa, 2015), an 8-week Bikram yoga intervention (Tracy & Hart, 2013; Hewett, Ransdell, Gao, Petlichkoff, & Lucas, 2011), 60 days of yoga practice (5 days in a week, one hour/ day) among professional computer users (Telles, Dash, & Naveen, 2009), 6-week yoga intervention among male college students (Bal & Kaur, 2009).

In both the groups there was a significant increase in peak expiratory flow rate. The following studies have reported role of yoga; practice of pranayama 30 min/day, thrice/week for 12-week among healthy volunteers (Gaur et al., 2015), 2-months yoga intervention among asthma patients (Singh, Soni, Singh, & Tandon, 2012) and 12-week practice among healthy young female participants (Yadav & Das, 2001) significantly improved peak expiratory flow rate. However, a study has reported 6-months yoga training significantly increased handgrip strength and peak expiratory flow rate among school children aged between 12-15 years. Also, there was an increase in handgrip strength and peak expiratory flow rate in control group but results were non-significant (Mandanmohan, Jatiya, Udupa, & Bhavanani, 2003). Here, reason for improvement in WLC group remains unclear.

Our results were non-significant in the right and left-hand grip strength of the yoga group participants, however, a significant decrease in the left-hand grip strength was witnessed in

the WLC group. Similarly, after an 8-week Bikram yoga intervention there was non-significant improvement in handgrip strength among healthy adults (Tracy & Hart, 2013). Whereas, following studies have reported contrast results; Six-day yoga program 5-hours per day among obese participants (Telles, Naveen, Balkrishna, & Kumar, 2010), four-week yoga intervention (5-days in a week) among participants with Myofascial Pain Syndrome (Sharan, Urmi, Ajeesh, & Manjula, 2014), among professional computer users 60 days of yoga practice (5 days in a week, one hour/ day) (Telles et al., 2009) significantly increased handgrip strength.

Handgrip strength and stress are negatively correlated (Leva, Dambkowski, Crowe, & Morton, 2013). In our study, also there was an increase in perceived stress and significant decrease in left handgrip strength among WLC participants. During our intervention, students had to attend internal assessment tests, meanwhile complete their academic requirements, and prepare for annual exams which was 1½ month (for GNM students) and 2½ months (for BSc students) approximately at the time of post data collection can be considered as potential stressors. A study has reported, gender, workability index, duration of household work, BMI, perceived physical load and work schedule significantly predicted 52.6% of variance on hand grip strength among nurses (Merchaoui et al., 2016). This may be the reason for decrease in handgrip strength, but this holds scope for future research studies.

Our study result, has demonstrated significant increase in pinch strength (chunk and pulp) among participants of the yoga group than the WLC group. This study was in coherence with our results, 4-week yoga intervention (5-days in a week) among participants with Myofascial Pain Syndrome (MPS) significantly improved pinch strength (Sharan et al., 2014). A significant increase in pinch strength and decreasing trend in hand grip strength

among yoga group participants, ignites the thought about what is the pathway of mechanism of yoga? This will need to be addressed in the future studies.

There was a significant increase in hand dexterity in the both groups. However, practice of kapalabhati and breath awareness significantly improved fine hand dexterity as measured on O'Connor finger dexterity task (Telles, Balkrishna, & Singh, 2012). Randomized controlled three-group study among 90 hypertensive participants revealed that, performance on Purdue pegboard improved in both the groups one who practiced anuloma-viloma pranayama (both hands and right hand) and who were reading magazine (only right hand), here intervention was given for 10 minutes (Telles et al., 2013). Improvement in both the groups may be explained based on the importance of attention in performance on manual dexterity (Streng, Niederberger, & Seelhorst, 2002). All the students were preparing for class tests and exam which indeed requires attention. This may be the cause for significant improvement in both the groups in our study. Overall, our study has reported mixed results.

However, yoga intervention significantly improved mindfulness, self-compassion, low back and hamstring flexibility, and pinch strength (chunk and pulp), the reason for non-significant results in other variables may be explained in two points; 1. The present study was implemented during peak time of completion of their academic demands, this may be the reason for our mixed results and, 2. Duration of intervention could have been longer than 8-weeks to witness improvements considering the above mentioned situation.