# INVESTIGATING QUALITY OF LIFE AND TRAIT MINDFULNESS OF SKILLED MEDITATORS: A CASE CONTROL STUDY

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## Background

Meditation refers to mental practices that could lead to changes in the mind and body of humans. It is understood as one of the safest practices in complementary and alternative medicine as it effectively balances physical, emotional, and psychological states of an individual (Ramaswami & Shiek, 1989). Meditation is capable of improving the ability to regulate and retain control of one's own choices, feelings, behaviour, healthiness, comfort, and bliss experienced by an individual. It also alters the way in which individuals respond and relate to thoughts, feelings, and sensory stimuli (Shonin & Van Gordon, 2016). Growing body of literature has suggested that meditation has shown beneficial effects on trait mindfulness and quality of life (QOL).

Trait mindfulness is considered one of the important personality traits for meditation-based interventions in the modern world. It refers to one's natural ability to pay and sustain attention to present-moment occurrences and it reflects individual differences in the general level of mindfulness across situations and time (Brown & Ryan, 2003). Physical, psychological, environmental, and socioeconomic factors can all influence an individual's QOL (Higuchi & Liyanage, 2019). Individuals' perceptions of their place in life in relation to their goals, aspirations, standards, and concerns are defined as perceived QOL (World Health Organization Quality of Life group, 1996).

Recent studies in western world found that long-term mindfulness meditators had significantly higher mindfulness variables and QOL such as attention and awareness, observing, describing, non-judging, resilience, self-compassion, and satisfaction with life and subjective happiness (Curiati et al., 2005; Nidich et al., 2009). Majority of the research findings on meditation in mindfulness and QOL suggest that even the short-term practice of meditation could improve QOL and trait mindfulness. There is a paucity of data on the effects of long-term meditation practice on the mindfulness level and QOL in healthy individuals. Hence, this study aims to compare QOL and trait mindfulness levels between skilled meditators and non-meditators and to seek the association between population characteristics and mindfulness in a sample of healthy individuals in Sri Lanka.

## Method

This study is a matched case control study where the cases (meditators) were matched with controls (non-meditators) for age, gender and highest educational level. To be included in the study, the participants had to be above 18 years old with regular meditation practice for more than three years. Non-meditators were selected if they have never or rarely (less than once in three months) practiced meditation or any stress management strategy. The criteria for exclusion included: (i) any illness or chronic use of medication (based on the responses to questions) (ii) smokers and (iii) pregnant or breast feeding women. Initially 144 meditators were recruited based on the duration of meditation. Out of 144 meditators, 67 meditators aligned with all the inclusion and exclusion criteria They were screened to identify the skilled meditators with a screening tool (Outschoon N.O et al. 2019). After the screening process, only 21 skilled meditators became

eligible for the study and 21 controls were recruited from the community using purposive sampling to match for the meditators (Figure 1).

The World Health Organization Quality-of-Life Scale (WHOQOL-BREF) is a QOL assessment tool developed by the WHOQOL group that would be applicable cross-culturally. It has 26 items, with 5 options: absolutely not (scored as 1), slightly ('2'), quite a bit ('3'), most likely ('4'), very well ('5'). The participants choose the most appropriate option that describes the intensity of their feelings at the moment of answering. To measure the perceived QOL, we used the Sinhala version of WHOQOL_BREF which was translated and validated to a Sinhala speaking context by Kumarapeli, Seneviratne, & Wijeyaratne, 2006.

Five Facet Mindfulness Questionnaire (FFMQ) explores mindfulness based on five independently developed mindfulness items which are bound together in a factor analytic study. It consists of 30 items and it assesses five facets of mindfulness. These items are rated according to the Likert scale: never (scored as 1), rarely ('2'), sometimes ('3'), often ('4') and very often ('5'). This research is associated with a large scale study on meditation, mindfulness and health. A translated and adapted version of FFMQ to a Sinhala speaking context by a sub group of the aforementioned project was used to collect data on trait mindfulness. The judgemental validity of the Sinhala version has been ensured.

All statistical analyses were carried out using IBM SPSS (Version 23.0), and p values at 0.05 were considered significant. The Shapiro-Wilk test was used for testing the normality of the data and since, all the data were normally distributed, comparison of QOL and mindfulness level between the groups were performed using the student t-test. To evaluate the relationship between QOL, and mindfulness level with population characteristics Pearson correlation was done.

**Results and Discussion**

The demographics of both cases and controls are outlined in table 1. Thirty out of the forty-two participants (71.4%) were male and this might partly be due to sex differences in motivation to practice meditation and to participate in research studies. When matched the mean age ($\pm$ SD) of participants was $42.78 \pm 9.80$ years and $42.83 \pm 9.78$ years for the meditators and non-meditators respectively. Mean duration of the meditation practice of the meditators was $6.46 \pm 2.89$ years and they have meditated for a mean frequency of $8.91 \pm 4.57$ hours per day. The percentage of 85.70 of the meditators had done their tertiary education while the 52.38% of the controls had completed their tertiary education. According to the educational levels, most of the meditators had completed their tertiary education which indicates that most of the educated people may tend to practice meditation and they achieved the skill levels within a short period of time. One meditator out of all the participants had a vegetarian diet which may indicate that skill levels of meditation may not depend on the vegetarianism. Moreover, loving-kindness, breathing and body scanning meditation techniques were practiced by the included meditators. In this study, all the meditation techniques were considered as one technique since it is known that meditation has beneficial effects regardless of the type of meditation practice.

According to the comparison between total QOL and mindfulness level between the two groups, the mean ($\bar{x}$) score of mindfulness level was significantly higher in meditators than controls (meditators: $\bar{x}\pm SD=147.56\pm21.41$; controls: $\bar{x}\pm SD=127.30\pm9.74;p=0.009$). However, total score QOL did not show a significant difference between two groups (meditators**:** $100.38\pm9.48$; controls: $93.30\pm9.60$; $p=0.070$). When considering the subscales, observing (meditators: $29.33\pm7.00$; controls: $23.90\pm5.68;p=0.037$), describing (meditators: $33.22\pm4.02$; controls: $28.20\pm3.88;p=0.004$) and non-reacting (meditators: $27.72\pm4.46$; controls: $23.60\pm3.88;p=0.022$) scales of the FFMQ significantly higher in meditators compared to non-meditators while the acting awareness (meditators: $29.61 \pm 6.09$, non-meditators: $28.20 \pm 5.32$; $p = 0.546$) and non-judging (meditators: $27.66 \pm 8.06$, non-meditators: $23.40 \pm 4.40$; $p = 0.135$) subscales were not

significantly different between the two groups. All the subscales except psychological scale (meditators: $26.61 \pm 2.40$; controls: $22.80 \pm 3.90$; p=0.009) of the QOL were not significantly differ in meditators compared to non-meditators (Physical health = meditators: $29.88 \pm 3.56$; controls: $28.10 \pm 2.02$;p=0.158;social relationship = meditators: $12.11 \pm 1.87$; controls: $11.80 \pm 2.44$;p=0.709; Environment = meditators: $31.77 \pm 4.23$; controls: $30.60 \pm 4.24$;p=0.488) (Table 2).

Meanwhile, total QOL was only significantly correlated with the age (r=0.542; p=0.003) where the QOL is increasing along with the age. But total mindfulness level was not significantly correlated with any of the population characteristics. Total QOL was significantly correlated with the trait mindfulness level (r=0.463; p=0.013) i.e. when QOL is increasing, mindfulness is also increasing. The finding of higher mindfulness levels and QOL in meditators is consistent with previous work that demonstrated an association between meditation and mindfulness and QOL (Schutte, Palanisamy, & McFarlane, 2016). These results strengthen the impression that mental health and behavioural patterns are influenced by the way people relate to their thoughts and feelings rather than by the form of those thoughts and feelings. However, these results suggest that long-term meditation had increased the way that a person labels his experiences and expresses them in words to himself and others, the detachment from negative thoughts and emotions to accept their existence and choose not to react to them, and it had favourable effects on negative thinking, self-image, self-esteem, and attitudes. This study recruited meditation practitioners who practiced meditation for more than 3 years to seek the long-term effects of meditation and a screening tool was used to properly identify the meditators who gained the necessary skill levels which might lead to obtaining significant changes even with a smaller sample size.

Furthermore, meditation is a cost-effective practice that requires only commitment of time and is not influenced by age, gender, education or any other factor. All the short-term effects of meditation practice as shown in the previous literature can be expected to be enhanced through long-term meditation practice and hence, this study looked at the long-term meditation practice. In addition, this study cannot distinguish the effects of different meditation practices since the meditators had practised three types of techniques: loving-kindness, breathing and body scanning meditation. To specifically test the most effective meditation technique, all three techniques would need to be compared with controls and with each other.

**Conclusion**

The findings of this case-control study suggest that long-term meditation practice may have beneficial effects on the dispositional mindfulness and QOL. Demographic factors may act as mediators of the relationship between mindfulness and QOL. Current findings of the study may lay a foundation to design meditation based intervention which promote perceived QOL. Additional experience may lead us to refine the most effective meditation practice and different instruments may reveal a various pattern of results.
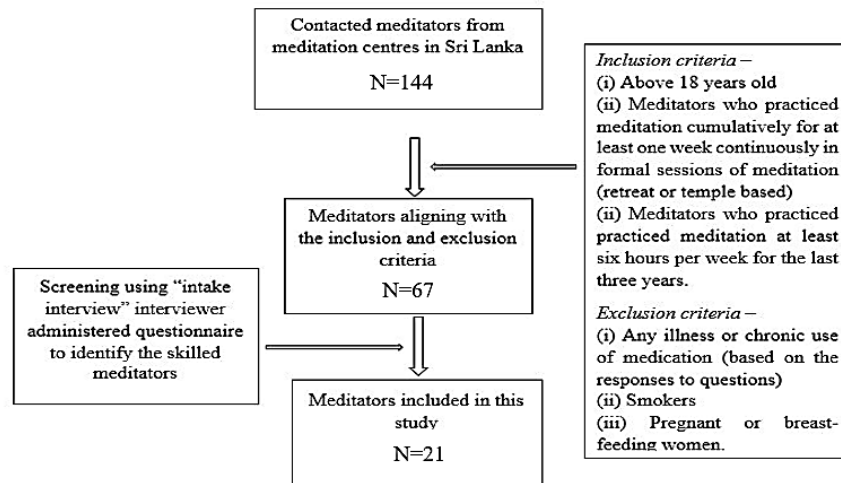
Fig. 1: The process of recruiting skilled meditators to the study

Table 1: Socio-demographics and health characteristics of the sample

| Variables | Meditators | Non-meditators |
|---|---|---|
| **Socio-demographics** | | |
| Gender (male)[a] (%) | 15/21 (71.4%) | 15/21 (71.4%) |
| Age[a] (mean ± SD) | 42.78 ± 9.8 | 42.83 ± 9.78 |
| Married (%) | 11/21 (52.38%) | 15/21 (71.4%) |
| Educational level- Tertiary education (%) | 18/21 (85.70%) | 11/21 (52.38%) |
| Educational level- Secondary education (%) | 3/21 (14.28%) | 10/21 (47.61%) |
| Body Mass Index (mean ± SD) | 25.9 ± 4.6 | 23.4 ± 3.9 |
| **Healthy habits** | | |
| Alcohol (%) | 5/21 (23.80%) | 7/21 (33.34%) |
| Non-vegetarian diet (%) | 20/21 (95.23%) | 21/21 (100%) |
| Hours of Exercise per week (mean ± SD) | 1.86 ± 1.78 | 0.42 ± 0.95 |
| Sleeping hours per day (mean ± SD) | 6.27 ± 1.56 | 6.22 ± 1.92 |
| No. of hours spending outside (mean ± SD) | 2.25 ± 2.5 | 2.63 ± 2.81 |

[a]Matched variables

Table 2: Mental Health variables in mediators and non-meditators

| Variable | Meditators (mean ± SD) | Non-meditator (mean ± SD) | Significance |
|---|---|---|---|
| FFMQ (Total) | 147.56 ± 21.41 | 127.3 ± 9.7 | $p=0.009^*$ |
| FFMQ (observing) | 29.33 ± 7.02 | 23.90 ± 5.68 | $p=0.046^*$ |
| FFMQ (describing) | 33.22 ± 4.02 | 28.20 ± 3.88 | $p=0.004^*$ |
| FFMQ (acting aware) | 29.61 ± 6.09 | 28.20 ± 5.32 | $p=0.546$ |
| FFMQ (non-judging) | 27.66 ± 8.06 | 23.40 ± 4.40 | $p=0.135$ |
| FFMQ (non-reacting) | 27.72 ± 4.46 | 23.60 ± 3.97 | $p=0.022^*$ |
| QOL (Total) | 100.38 ± 9.48 | 93.3 ± 9.6 | $p=0.07$ |
| QOL (physical health) | 29.88 ± 3.56 | 28.10 ± 2.02 | $p=0.158$ |
| QOL (Psychological) | 26.61 ± 2.40 | 22.80 ± 2.44 | $p=0.001^*$ |
| QOL (Social Relationship) | 12.11 ± 1.87 | 11.80 ± 2.44 | $p=0.709$ |

| QOL (Environment) | 31.77 ± 4.23 | 30.6 ± 4.24 | p=0.488 |

SD – Standard Deviation; FFMQ – Five Facet Mindfulness Questionnaire; QOL – Quality Of Life
*p<0.05

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