



Promoting Brain Health in Teacher Training Programs: A Case Study

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Abstract: *General Sir John Kotelawala Defence University (KDU) pioneered preventive brain health and mental well-being by integrating Life's Ten Principles into the Certificate in Teaching in Higher Education (CTHE) program during the 2024 Preventive Brain Health Week. The pilot involved 40 early-career academics who participated in interactive lectures, practical sessions, and reflective teaching portfolios focusing on holistic lifestyle factors such as healthy eating, physical activity, sleep hygiene, stress management, metabolic health, and social engagement. The findings suggest that feedback from students and young academics was used to inform decisions regarding program improvement. Furthermore, participants reported that integrating brain health activities may support professional development, teaching effectiveness, and mental resilience, contributing to a healthy, happy, and effective learning environment.*

Keywords: *Brain health, mental well-being, preventive education, higher education, teaching effectiveness*

Introduction

The Staff Development Centre (SDC) has annually conducted the Certificate in Teaching in Higher Education (CTHE) course for last ten years. This accredited CTHE course will be conducted from February to November each year. The course embodies best practices in teaching and learning currently practiced worldwide. It is intended for newly recruited permanent academic staff of Sri Lanka universities who are in their probationary period at the time of applying for the course. This CTHE course is recognized by the UGC as an induction programme satisfying the mandatory requirements to be fulfilled by probationary academics. During the past, many senior academics have also followed the course, because of its benefits to them personally and to the university system. The course has received an excellent feedback rating from participants as well as from overseas resource persons (F. Marikar & Zayan, 2024).

During the course, fifteen weekday workshops will be conducted, either at the General Sir John Kotelawala Defence University or via an online platform, depending on the prevailing circumstances. Therefore, participants must be able to attend the workshops onsite (physically) when required to do so. They must also have adequate online access. They are required to design and implement new teaching and learning-related activities based on Learning Agreements, undertake reflective self-development activities, and engage in considerable reading (Gopura et al., 2023). Assessment of the course is based on active workshop participation, a seminar presentation, and a Portfolio that participants produce while following the course to evidence how changed teaching practices were implemented to become an effective teacher and academic. The Portfolio is written in English and requires CTHE participants to be proficient in English. The Board of Examination will finalize the examination

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results of the Course follow senate and Board of Management approval. to pass the CTHE (F. M. M. T. Marikar et al., 2023).

Induction programme known as CTHE tenth batch 2022-2023 is a dynamic team which represents all ten faculties at KDU and identified the need for greater emphasis on resource persons. It also wanted to prompt through exploration of evidence-based assessment of teaching excellence in resource persons. Prof. Tissa Wijeratne, President, Asian Regional Consortium of Headaches, Chair, Migraine Foundation, Co-Chair, World Brain Day, Trustee, World Federation of Neurology emphasized the importance of mental health support. Sri Lanka took a monumental step forward in advancing preventive brain health through promoting neurological education and training in a Preventive Brain Health Week 2024 at the General Sir John Kotelawala Defence University (KDU).

Brain Health Awareness Week, focusing on the Life's Ten principles a comprehensive approach to fostering brain health across KDU's staff, students, patients, and their families (Flaisher-Grinberg, 2022). Healthy living is best supported by adopting a lifestyle that emphasizes healthy eating, regular physical activity, and quality sleep, all of which lay the foundation for overall well-being. Effectively managing stress, controlling blood pressure and blood sugar levels, and maintaining proper lipid regulation are essential for preventing chronic diseases. Additionally, avoiding smoking, keeping a healthy abdominal circumference, and engaging actively in social and mental activities further enhance physical and mental health. Together, these practices contribute to a balanced, fulfilling, and health-conscious life.

Methods

This study involved 40 early-career academics from all ten faculties of General Sir John Kotelawala Defence University (KDU), who were newly recruited permanent staff undergoing their probationary period and enrolled in the tenth batch (2022–2023) of the Certificate in Teaching in Higher Education (CTHE) program. Using a case study design, the research explored the integration of brain health principles into teacher training by examining the impact of participation in a structured intervention consisting of fifteen weekday workshops delivered either onsite or online. The workshops combined interactive lectures on effective teaching and brain health with practical activities based on Life's Ten Principles, including healthy nutrition, physical activity, sleep hygiene, stress management, metabolic health, and social and cognitive engagement. Data were collected through reflective teaching portfolios, student feedback on teaching effectiveness, and participants' evaluations of the program using an e-mail response format. All data were analyzed descriptively using Microsoft Excel, with qualitative synthesis of feedback and portfolio reflections to identify patterns in teaching practices, implementation of brain health strategies, and participants' self-assessed professional development and mental well-being, which were subsequently used to inform program improvement.

Results and Discussion

The findings of this study can be used to build a good CTHE programme for greater success. When gathering data from students about teaching effectiveness, processes used in addition to traditional course evaluations are carried out through feedback. Feedback served as a key indicator for decision making. We always consider the feedback from young academics and try to invite more input from outside experts. If negative feedback is received for two consecutive times, a new member from the pool of lecturers is replaced. This approach helps maintain a healthy program and ensures that young academics develop effectively.

The findings of this study also indicate that integrating brain health activities into the programme, which had previously received little attention, is important. Feedback from the reflective portfolios of young academics was used to guide the inclusion of additional brain health sessions, emphasizing the importance of maintaining a healthy and happy life (Figure 1: A. Lectures on brain health, B: Measuring the height, C: Measuring the weight and height, D: Measuring the waist circumference, E: Measuring the Blood pressure).

Figure 1. Experimental ten principles



Figure 2. Ten factors are considered for brain Life's Ten principles for brain health program

Figure 2. Ten points for best practice in Brain Health Program



Healthy eating

Healthy eating plays a crucial role in supporting brain health, especially in Sri Lanka, where traditional diets offer many brain-boosting foods. A balanced diet rich in fresh fruits like bananas and mangoes, leafy greens such as gotu kola, and omega-3 fatty acids from fish like tuna and sardines can help improve memory, focus, and overall mental well-being. Traditional Sri Lankan spices like turmeric, known for its anti-inflammatory properties, also contribute to protecting the brain against age-related decline (Takeda et al., 2008). By embracing a diet full of natural, nutrient-dense local foods and limiting processed and sugary items, Sri Lankans can nurture both their physical and cognitive health for a brighter, sharper future.

Regular physical activity

Regular physical activity is essential for maintaining brain health, and in Sri Lanka, it can be easily incorporated into daily life through both traditional and modern practices. Activities like morning walks along the beach, cycling through villages, or engaging in traditional dance forms such as Kandyan dancing not only boost physical fitness but also enhance blood flow to the brain, improving memory, focus, and mood. Exercise helps release chemicals like endorphins and brain-derived neurotrophic factor (BDNF), which protect brain cells and support the growth of new ones, making it a powerful tool in preventing conditions like dementia and depression (Gao et al., 2022). In Sri Lanka's rapidly urbanizing environment, where sedentary lifestyles are becoming more common, encouraging regular physical activity is more important than ever. Schools, workplaces, and communities can promote simple habits like group yoga sessions, daily sports, or even walking meetings to keep both the body and mind active. By integrating movement into daily routines and valuing traditional outdoor activities, Sri Lankans can safeguard their brain health, ensuring sharper thinking, better emotional resilience, and a higher quality of life across all ages.

Quality sleep

Quality sleep is vital for brain health, and in Sri Lanka, where busy lifestyles and increasing screen time are common, prioritizing good sleep habits is more important than ever. During deep sleep, the brain clears out toxins, strengthens memories, and recharges for the next day, helping to maintain sharp thinking, emotional balance, and long-term cognitive function. Lack of proper sleep can increase the risk of mental health issues like anxiety and depression, as well as memory problems (Lee et al., 2021). By creating healthy sleep environments such as reducing late-night screen use, maintaining a regular sleep schedule, and embracing calming practices like evening meditation Sri Lankans can protect their brain health and enhance their overall well-being.

Effectively managing stress

Effectively managing stress is essential for protecting brain health, especially in Sri Lanka where rapid social changes, work pressures, and economic challenges can increase daily stress levels. Chronic stress triggers the release of hormones like cortisol, which over time can damage brain structures responsible for memory, decision-making, and emotional regulation. Traditional Sri Lankan practices such as mindfulness meditation, attending religious activities, spending time in nature, and maintaining strong family and community ties offer natural and

culturally rooted ways to reduce stress and support brain resilience (Dasanayaka et al., 2022). Promoting stress management techniques in schools, workplaces, and communities across Sri Lanka can have lasting benefits for both mental and cognitive health. Activities like yoga, breathing exercises, and even simple habits like taking short outdoor breaks during the day can greatly lower stress levels. By valuing mental well-being and encouraging regular stress-relieving practices, Sri Lankans can safeguard their brain health, improving their ability to think clearly, manage emotions, and maintain a higher quality of life at every stage.

Controlling blood pressure

Controlling blood pressure is crucial for maintaining brain health, especially in Sri Lanka where hypertension is becoming increasingly common due to changing diets and sedentary lifestyles (Nguyen & Chow, 2021). High blood pressure can damage blood vessels in the brain, leading to a higher risk of stroke, memory loss, and cognitive decline. By adopting healthier habits such as reducing salt intake, eating more fresh fruits and vegetables, staying physically active, and managing stress through mindfulness or traditional practices like meditation, Sri Lankans can protect both their heart and brain. Regular health check-ups and early management of high blood pressure are key steps toward preserving sharp thinking and overall mental well-being.

Controlling blood sugar levels

Controlling blood sugar levels is vital for protecting brain health, particularly in Sri Lanka where diabetes rates are steadily rising. High blood sugar can damage blood vessels and nerves in the brain, leading to memory problems, slower thinking, and an increased risk of conditions like dementia (Ahmad & Joshi, 2023). By choosing a balanced diet rich in traditional foods like leafy greens, lentils, and fresh vegetables, limiting sugary snacks, staying physically active, and regularly monitoring blood sugar levels, Sri Lankans can greatly reduce these risks. Maintaining healthy blood sugar not only supports clearer thinking and better memory but also improves overall quality of life.

Maintaining proper lipid regulation

Maintaining proper lipid regulation is important for brain health, as high levels of unhealthy fats in the blood can lead to clogged arteries, reducing blood flow to the brain and increasing the risk of stroke and cognitive decline (Chandel, 2021). In Sri Lanka, where diets are rich in coconut-based foods and fried items, it is important to balance traditional eating habits with heart-healthy choices like incorporating more fresh vegetables, fish rich in omega-3 fatty acids, and using healthy cooking methods such as steaming or grilling. Regular exercise, avoiding excessive oily foods, and routine health check-ups can help manage cholesterol levels effectively, protecting both brain function and overall well-being.

Avoiding smoking

Avoiding smoking is crucial for maintaining brain health, as smoking reduces blood flow to the brain, increases the risk of stroke, and accelerates cognitive decline (Ferrara et al., 2022). In Sri Lanka, where tobacco use remains a public health concern, raising awareness about the

harmful effects of smoking on brain function is essential. Smoking damages blood vessels and introduces harmful chemicals that can impair memory, learning, and mental sharpness over time. By promoting smoke-free environments, supporting quit-smoking programs, and encouraging healthy lifestyle alternatives like physical activity and meditation, Sri Lankans can protect their brain health and enjoy a clearer, more vibrant mind throughout life.

Healthy abdominal circumference

Maintaining a healthy abdominal circumference is important for brain health, as excess belly fat is linked to a higher risk of memory problems, dementia, and stroke (Andrade, 2022). In Sri Lanka, where changing diets and less active lifestyles are leading to increased rates of obesity, paying attention to waist size is crucial. A diet rich in traditional fruits, vegetables, whole grains, and regular physical activity like walking, cycling, or practicing yoga can help manage abdominal fat effectively. By keeping a healthy waistline, Sri Lankans can improve blood flow to the brain, reduce inflammation, and protect their cognitive abilities for a healthier, sharper future.

Engaging actively in social and mental

Engaging actively in social and mental activities is vital for brain health, helping to keep the mind sharp and emotionally strong (Yen et al., 2022). In Sri Lanka, where strong community ties and cultural traditions are an important part of life, participating in religious events, volunteering, playing traditional games, or even joining group activities like drama or music can greatly stimulate the brain. Regular social interaction and mental challenges strengthen neural connections, improve memory, and lower the risk of cognitive decline. By staying socially and mentally active, Sri Lankans can not only nurture their brain health but also enjoy a richer, more connected life.

Conclusion

Maintaining brain health among early-career academics may benefit from a holistic approach that incorporates healthy eating, regular physical activity, quality sleep, stress management, and lifestyle choices. A balanced diet rich in local fruits, vegetables, and omega-3-rich fish, along with traditional foods like gotu kola and turmeric, supports cognitive function and protects against age-related decline. Physical activity, including walking, yoga, and traditional dance, improves blood circulation to the brain and reduces mental health risks. Prioritizing good sleep habits, such as reducing screen time and adopting relaxing routines, allows the brain to recharge and clear toxins. Managing stress through practices like meditation and maintaining strong social connections is essential for brain health, as chronic stress can damage cognitive function. Controlling blood pressure, blood sugar, and lipid levels through a healthy diet and regular exercise further reduces the risk of stroke and cognitive decline. Avoiding smoking and maintaining healthy abdominal circumference are key factors in protecting the brain. Finally, engaging in social and mental activities, such as community events or traditional games, keeps the brain active and resilient. Findings suggest that incorporating these principles into teacher training may support brain health and teaching effectiveness among early-career academics, with potential applicability to broader contexts pending further research.

Recommendation

The current study has several recommendation. First, the findings are limited to a single institution, which may affect the generalizability of the results to other universities or academic settings. Second, the study employed a cross-sectional design, capturing data at one point in time; a longitudinal study would be valuable to examine the long-term effects of integrating brain health activities into teacher training programs. Third, the study relied primarily on self-reported data and reflective portfolios, which may introduce subjective bias. Incorporating mixed methods, such as interviews, classroom observations, or physiological measures, could provide a more comprehensive understanding of the impact on both teaching effectiveness and mental well-being. Finally, although the email response format enabled participation from a wider national sample, it limited in-depth exploration of participants' experiences and perspectives. Addressing these limitations in future research would strengthen the evidence base for promoting brain health in teacher training programs. The study findings are mostly qualitative and anecdotal, relying on self-reported portfolios and feedback, without objective measures of teaching effectiveness or mental resilience.

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