

Research Proposal Form

MSc Public Health and Social Care in Practice Dissertation (LCHS7004)

Fill in this form after discussions with your tutor.

The information will be formally submitted to your supervisor for approval.

Student Name	Student ID
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**Please adapt the text boxes accordingly*

Proposed Research Topic:

Analysing the Long-Term Impact of Wearable Fitness Tracker on Public Health Metrics utilised by fitness seekers (Aged 20- 65 years old) healthcare professionals.

Research question:

What are the long-term impacts of wearable fitness trackers on public health metrics as used by healthcare professional and fitness seekers (age 20 to 65 years)?

Research methodology:

A high-quality systematic review is described as the most reliable source of evidence to guide clinical practice. The goal of a systematic review is to provide a thorough summary of all the primary research available to answer a research question (Clarke, 2011). Systematic review is a method in which there are wider chances to get information from different sources and databases as compared to primary research. Moreover, ethics will be upheld during systematic review by consider common forms of database bias, citation bias, language bias and multiple publication bias. With its theoretical freedom, thematic analysis provides a highly flexible approach that can be modified according to the needs of multiple studies, providing a rich and detailed yet complex account of the data (Nowell et al., 2017). Furthermore, for this methodology, different database will be used as instruments such as google scholar, Pubmed, Cochrane library, Science library, University library.

A brief overview (14-20 sentences, including 5 references)

Please provide a brief overview of the topic you intend to research in a lay public language that is for a non-scientific audience:

Artificial intelligence has been a driver to a long time with the ways of leveraging wearable scientific discourse of stress management, nutrition, and exercising. As argued by Shin *et al.* (2019), advancements in wearable technology draw attention towards the enhancement of patient well-being and healthcare. In this aspect, healthcare progress is evident from wearable devices to promote monitoring vital signs, physical activity, and supporting wellness for healthcare approaches in self-care and personal fitness. Furthermore, Moore *et al.* (2021) claimed that

Wearable devices are subjected to making advanced sensors with stress level management and calorie expenditure. In this context, there has been integration in wearable devices to have real time guidance in the optimisation of prevention injuries and exercising routines. Further, Shei *et al.* (2022) argued and stated that fashion forward designs are integrated with the preference of wearable technology to make fitness track as well as monitor the seamless lifestyle sense. Counter-arguably, Creaser *et al.* (2021) noted that wearable technologies are significant towards the advancement with the wearable fitness tracker users on public health metrics for exercising, nutrition, and stress management. In this aspect, Kao *et al.* (2019) in transmitting the real-time data to the healthcare providers, and enabled the timely interventions, with early detection of health issues, and superior patient outcomes.

Nowadays, adults are more prone to use wearable devices to monitor physical as well as mental health in daily life such as healthcare professionals and people who are going to gym and doing vigorous exercise and this is useful to monitor heart rates, blood pressure, blood oxygen and for the stress management.

Aim (a broad statement capturing the overall purpose of this research)

~~Please provide the aim of the topic you intend to research:~~

The aim of the research is to shed light on the significance of the implementation of wearable fitness tracker users on public health metrics and its long-term impact on increased exposure to wellness and fitness in core healthcare processes.

Objectives (outline 3-5 using bullet points)

~~Please provide the objectives of the intended research:~~

- To analyse the advent of wearable in significant advancement of tracking and fitness-related data
- To assess the effectiveness of wearable fitness tracker users on public health metrics for exercising, nutrition, and stress management and monitor cardiovascular health

- To evaluate the wearable fitness tracker users in the data gathered from wearable activity trackers with users general physical health as well as cardiovascular health status
- To identify the area of the scope are evident from the utilisation of monitoring human basic physiological signals in medical area of expertise

Limitations of research:

- Conducting a systematic review may be a time-consuming process, and the body of evidence may change before the study is finished.
- Language bias may be introduced into systematic reviews since they frequently only include research published in a certain language. It is possible to overlook important studies that have been published in other languages.

Ethical considerations (indicate ethical issues that are relevant to your research)

<i>Collecting primary data from human participants requires you to address these issues.</i> <i>Using primary data sources still requires how you will address these issues.</i>	
I will submit my research proposal and the UWTSD ethics form to my supervisor to receive ethical approval.	N/A
I will develop a research information letter and consent form to be handed to each participant.	N/A
Voluntary informed Consent will be asked of each participant:	N/A
I will ensure participants will not be subjected to coercion, intimidation, and undue influence to participate in this research.	N/A
I will ensure participants will be informed they have the right to withdraw and their data from this research.	N/A
I will ensure to store the obtained signed consent forms securely and anonymously	N/A

C List of Questions / Interview schedule

A systematic literature review. *Journal of biomedical informatics*, 93, p.103153.

- 2) Moore, K., O'Shea, E., Kenny, L., Barton, J., Tedesco, S., Sica, M., Crowe, C., Alamäki, A., Condell, J., Nordström, A. and Timmons, S., 2021. Older adults' experiences with using wearable devices: qualitative systematic review and metasynthesis. *JMIR mHealth and uHealth*, 9(6), p.e23832.
- 3) Shei, R.J., Holder, I.G., Oumsang, A.S., Paris, B.A. and Paris, H.L., 2022. Wearable activity trackers—advanced technology or advanced marketing?. *European Journal of Applied Physiology*, 122(9), pp.1975-1990.
- 4) Creaser, A.V., Clemes, S.A., Costa, S., Hall, J., Ridgers, N.D., Barber, S.E. and Bingham, D.D., 2021. The acceptability, feasibility, and effectiveness of wearable activity trackers for increasing physical activity in children and adolescents: a systematic review. *International journal of environmental research and public health*, 18(12), p.6211.
- 5) fitness trackers. *International journal of environmental research and public health*, 16(18), p.3227.
- 6) Clarke, J. (2011). What Is a Systematic review? *Evidence-Based Nursing*, 14(3), pp.64–64. doi:<https://doi.org/10.1136/ebn.2011.0049>.
- 7) Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J. (2017). Thematic analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1), pp.1–13. doi:<https://doi.org/10.1177/1609406917733847>.