

How to make a sustainable transition in minimally invasive gynecological surgery: facilitators & barriers



G.I.A (Ingena) Both, Student of MSc Health Care Management (EUR) & Medicine (UU)

Introduction

In the past few years, awareness for sustainability and environmental impact has increased. At the same time, medical technology develops, however sustainability is not always taken into account. Minimally invasive surgery (MIS) has become the gold standard for many benign gynecological procedures, since it causes less post-operative pain and has a lower complication risk. Unfortunately, in the last two decades MIS has become reliant on the use of disposables. Recent literature emphasises the damaging effects of the use of disposables on the environment. However, transitioning to sustainable gynecological MIS remains difficult. This research aims to determine the facilitators and barriers needed for this sustainable transition.

Objective

- To inventorize
 - Different instruments used for sealing and cutting in gynecologic MIS
 - Current research on patient outcomes for the instruments used
 - Attitudes of gynaecologists and gynaecology residents towards sustainability
 - Facilitators and barriers for implementing sustainability in gynecological practice

Methodology

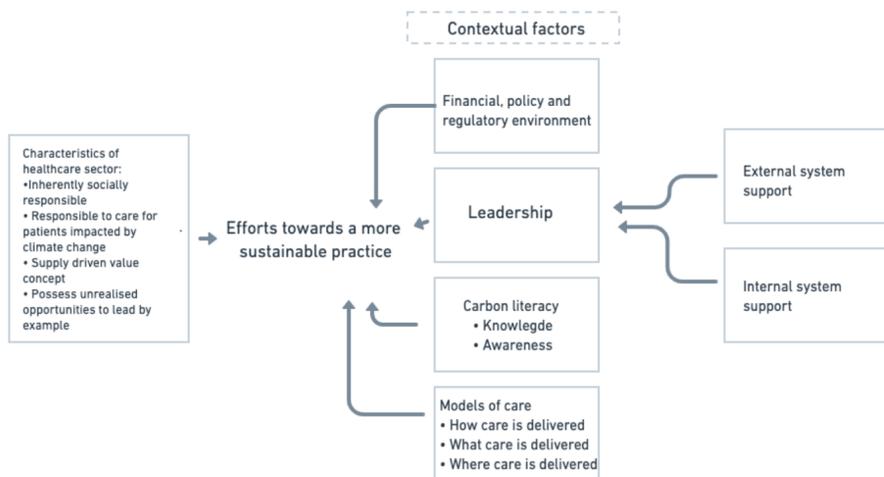
- Literature review
- Semi-structured interviews with 16 gynaecologists and gynecology residents

Analysis

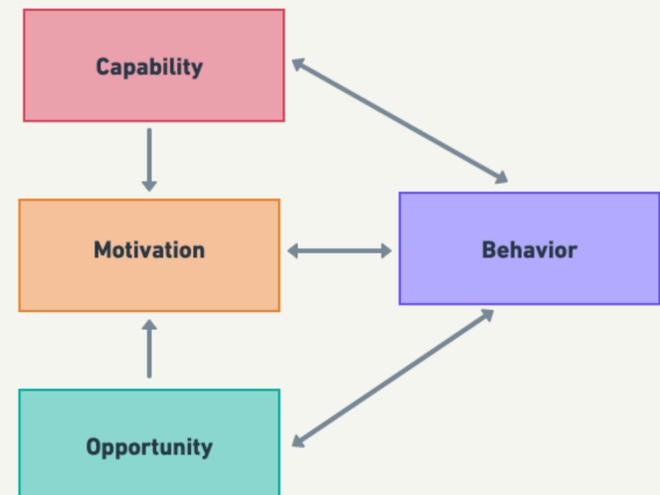
Semi-structured interviews were performed and analysed using thematic coding based on a behaviour change framework to expand an existing conceptual framework for sustainable implementations (see figures below)

Preliminary results

- Semi-structured interviews
- Knowledge and awareness plays a large part in capability, individuals with knowledge on the subject also show more sustainable motivation, targeting this can be used as a facilitator
 - Most participants showed motivation in personal life but few in their daily practice
 - Opportunity for sustainable innovations is limited, creating gynaecology and hospital specific system support can remove this barrier



Preliminary expanded model, based on interviews and: Desmond S. Implementing climate change mitigation in health services: The importance of context. *Journal of Health Services Research and Policy*. 2016;21(4):257-262.



Michie S, van Stralen MM, West R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*. 2011;6(1):1-12.



References

- Costello A, Abbas M, Allen A, et al. Managing the health effects of climate change: Lancet and University College London Institute for Global Health Commission. *The Lancet*. 2009;373(9676):1693-1733
- Pichler PP, Jaccard IS, Weisz U, Weisz H. International comparison of health care carbon footprints. *Environmental Research Letters*. 2019;14(6)
- MacNeill AJ, Lillywhite R, Brown CJ. The impact of surgery on global climate: a carbon footprinting study of operating theatres in three health systems. *The Lancet Planetary Health*. 2017;1(9):e381-e388.
- Thiel CL, Eckelman M, Guido R, et al. Environmental impacts of surgical procedures: Life cycle assessment of hysterectomy in the United States. *Environmental Science and Technology*. 2015;49(3):1779-1786.