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A worked example of “best fit” framework synthesis: A pragmatic form of qualitative data synthesis for health technology assessments

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HTA and qualitative research

- What is qualitative research?
 - Research on people’s views, attitudes, beliefs, preferences and experiences
- What is the value of qualitative research?
 - May help to explain why something works rather than just “what works”
 - Acceptability and appropriateness
 - May inform both trial development and the real-world implementation of health technologies
- Use?
 - Leys M. Health technology assessment: the contribution of qualitative research, *International Journal of Technology Assessment in Health Care* 2003, 19: 317-329.
 - Leys M, Health care policy: qualitative evidence and health technology assessment, *Health Policy* 2003; 65: 217-226.



Methods of qualitative evidence synthesis

- Thematic synthesis; Critical Interpretive Synthesis; Meta-ethnography
 - Techniques grounded in the data; highly interpretive and subjective
- Framework synthesis:
 1. Build a conceptual model or framework
 2. Only include “good” qualitative studies
 3. Map data from included studies onto framework
 4. Data that cannot be accommodated?
- “Best-fit” framework synthesis:
 1. Identify a pre-existing conceptual model or framework
 2. Include all relevant qualitative studies satisfying criteria
 3. Map data from included studies onto framework
 4. Use a grounded theory approach to generate completely new themes to supplement the framework’s themes

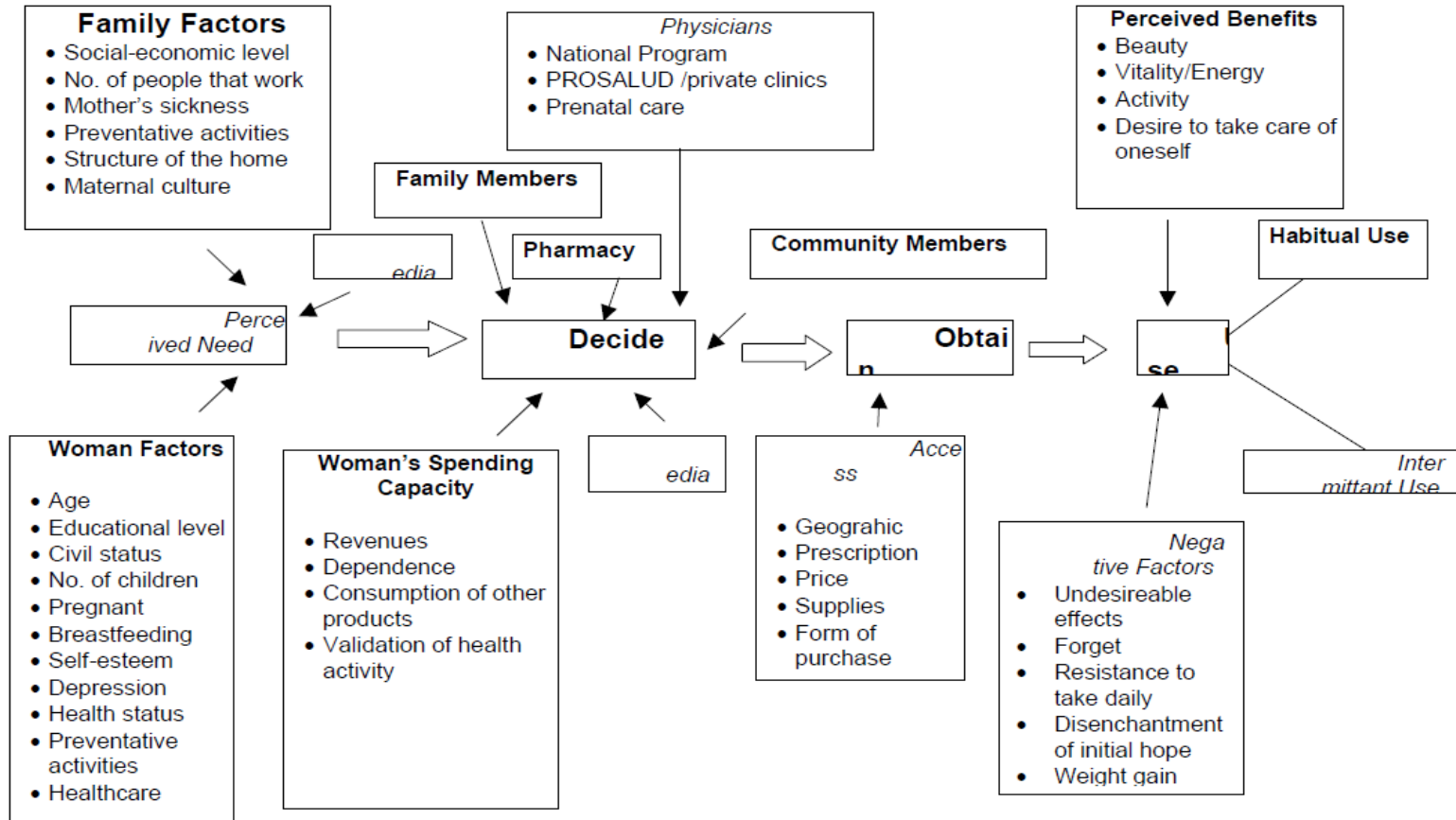


The case study

- HTA effectiveness and qualitative review on various agents for the primary prevention of colorectal cancer
- Inclusion criteria:
 - The views, attitudes and experiences of individuals regarding the taking one or more of the agents of interest (vitamins, minerals, non-steroidal anti-inflammatories) for chemoprevention or for other reasons, eg. long-term or chronic conditions
- Identifying the model:
 - Unsystematic search of published and grey literature
 - Result: Conceptual model on the factors affecting the taking of micronutrients by young women
 - No perfect model it was a “Best fit”



Figure 1. Conceptual model of factors determining the use of micro-nutrients among women of reproductive age





Building the framework: Stage 1

- A “best fit”
 - It covered the behaviour of interest, but only a sub-set of the population and exposure / intervention
- Generate a list of themes from model
- Define each theme
- Extract data from the 20 included studies
- Code data
 - By mapping the data against the list of defined themes generated from the original conceptual model
- What of relevant data from included studies which pre-existing themes did NOT cover?



Building the framework: Stage 2

- Secondary thematic analysis
 - Grounded theory approach to generate new, supplemental themes from “new” data
- Re-examination of *a priori* model and relationship between the themes, old and new
 - New depth
 - New complexities
- Build a new model reflecting the data relevant to the review

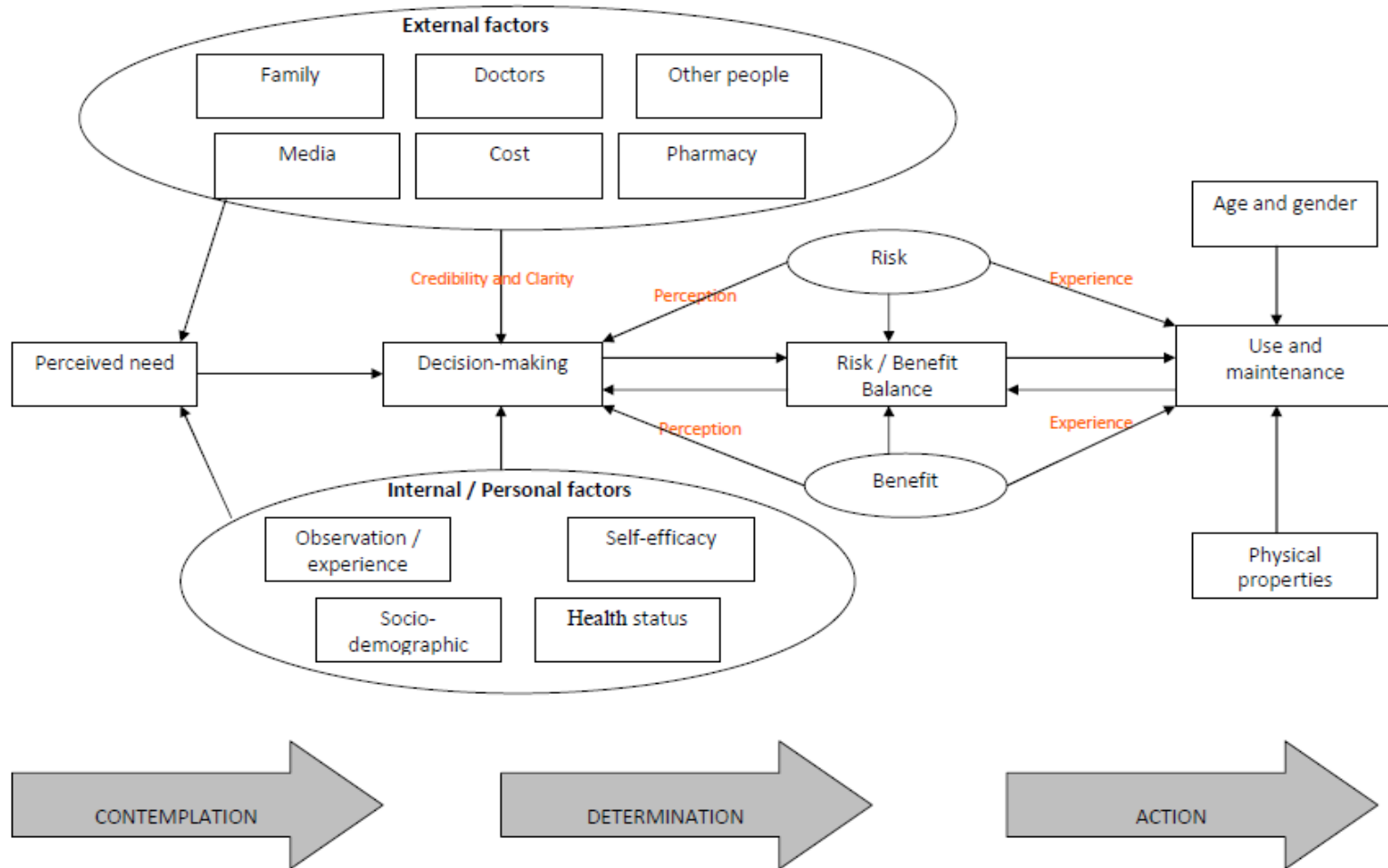
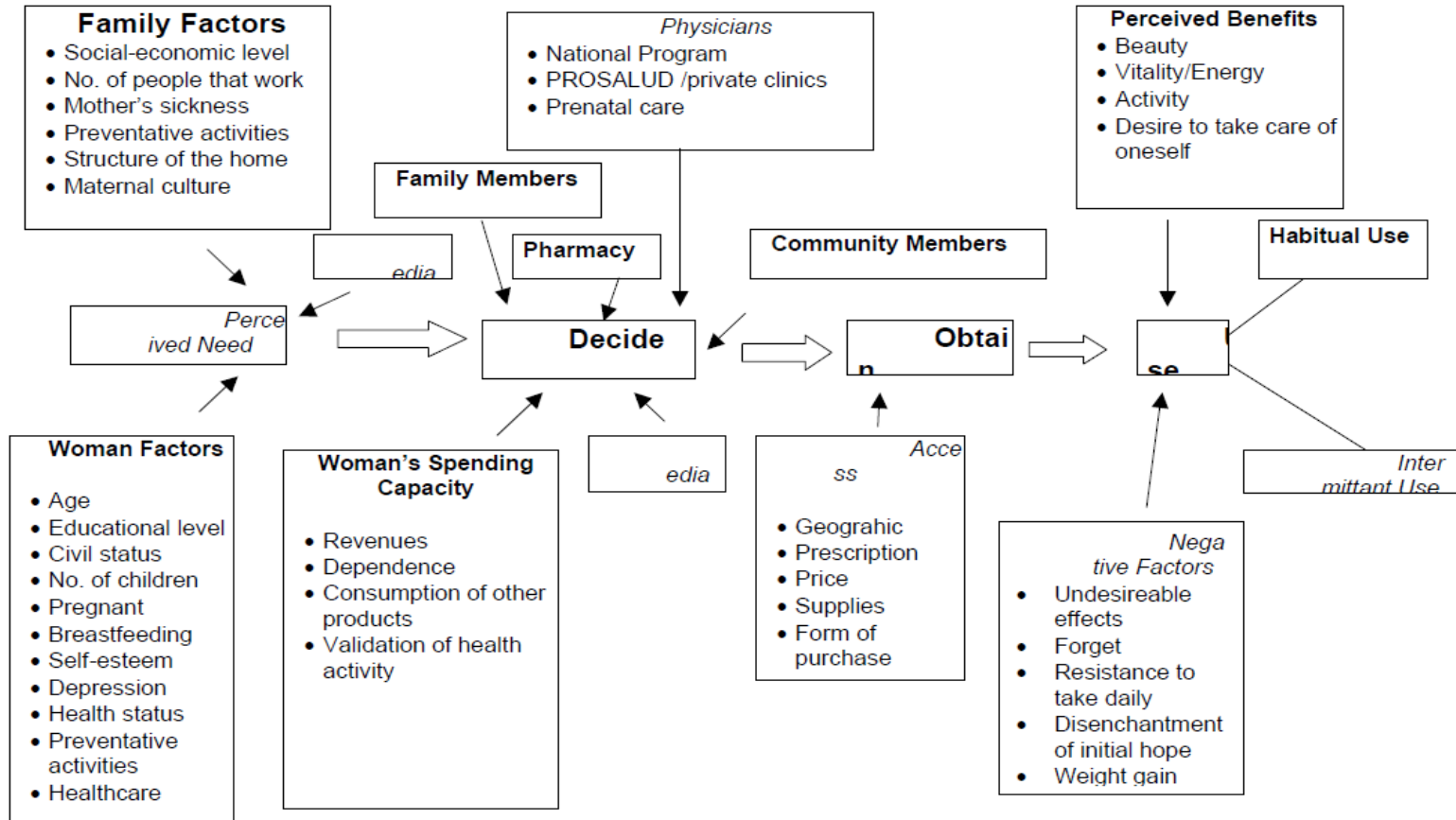




Figure 1. Conceptual model of factors determining the use of micro-nutrients among women of reproductive age





Benefits of this approach for HTA

- Very good for health behaviours (existing theories) relating to likely compliance with or acceptability of new technologies
- Identification and deconstruction of an existing model can be completed relatively quickly
- Stage 1 of the synthesis can be completed rapidly and reliably
- Stage 2 may only need to be applied to a small amount of data
 - Secondary thematic analysis is a well-described technique



Limitations of this approach

- Identification of the model was unsystematic
- Speed and reliability of method only applies if:
 - A “best fit” model is identified
 - The model accommodates half or more of the data
- Stage 2 still requires some subjectivity
 - Analysis and model construction grounded in the data



Conclusion

- HTA increasingly using qualitative evidence to inform and develop decision-making
 - “Best fit” framework synthesis offers a relatively rapid and reliable approach compared to potentially time and resource intensive, highly interpretive and subjective forms of qualitative evidence synthesis
 - It is an evolving method: further testing required
1. Carroll C, Booth A, Cooper K. A worked example of "best fit" framework synthesis: A systematic review of views concerning the taking of some potential chemopreventive agents, *BMC Medical Research Methodology*, 2011 11:29
<http://www.biomedcentral.com/1471-2288/11/29>
 2. Dixon-Woods M, Using framework-based synthesis for conducting reviews of qualitative studies, *BMC Medicine* 2011 <http://www.biomedcentral.com/1741-7015/9/39>
 3. Cooper K, Squires H, Carroll C et al. Chemoprevention of colorectal cancer: systematic review and economic model. *Health Technology Assessment* 2010; 14 (32).