

# Applying a micro-costing framework to calculate the costs of Mindfulness Based Interventions

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# Overview

- A brief overview of the Health Economics perspective
- Why consider the costs?
- Does the costing methodology matter?
- A micro-costing study
  - Micro-costing framework
  - Costing group based interventions
  - Preliminary results
  - Conclusions



# Health Economics

- Demand for healthcare is infinite
- Resources are scarce
- Choices are necessary
- Prioritisation is required
- Costs and benefits must be compared



# Opportunity cost

- Value of the benefits forgone by not using health resources in their best alternative use
- The true costs of expanding one service/treatment is the unavailability of resources to expand another



**MBSR**



**Cognitive  
Behavioural  
Therapy**

*(theories under-  
pinning)*



**MBCT**  
Mindfulness-  
based  
cognitive  
therapy



# Mindfulness-Based Interventions (MBIs)

- Main course ingredients:
  - led by a trained teacher/instructor:
  - 2 – 2.5 hour long weekly classes over 8 weeks
  - Practice in mindfulness meditation skills
  - Teacher led dialogue integrating learning from mindfulness practice with life challenge
  - Educational material integrated with experiential (e.g. depression, effects of avoidance, rumination)
  - Daily home practice assignments (up to 1 hour)
  - Skill based and psycho-educative

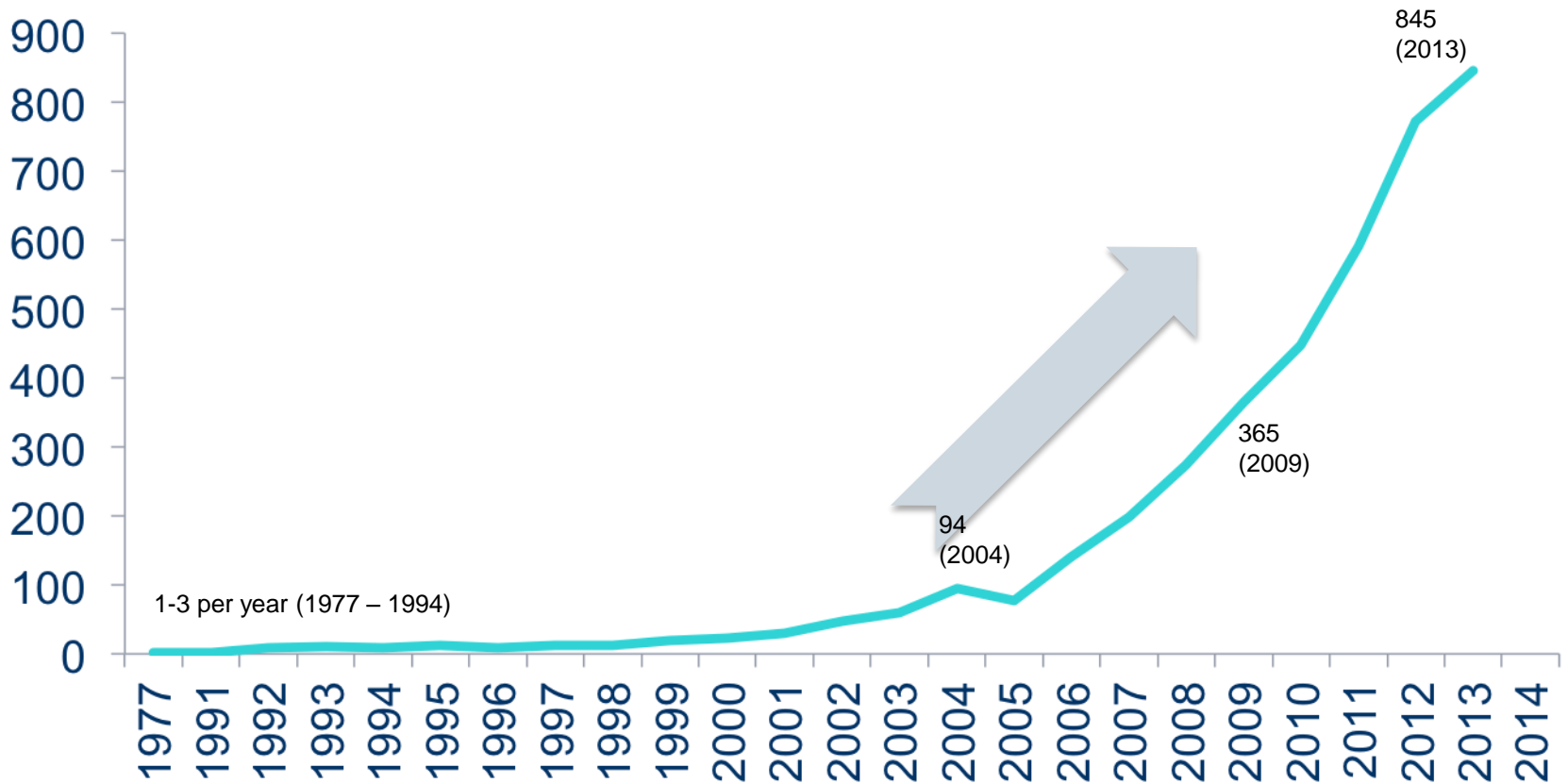


# Increased applications

- Depression, cancer, heart disease, pain, anxiety, HIV, psoriasis, fibromyalgia , chronic fatigue syndrome, eating disorders, bipolar, OCD, anger management, child birth, relationship challenge, stressed non-clinical groups etc.
- Education, prisons, sport, health and clinical, community, business etc.



# An upsurge in literature



Search of Social Science and Science Citation Indices (in January 2015) for the keyword "mindfulness"





# Why consider the costs?

- Given the rapid expansion of MBI literature implementation may also increase. With limited resources available to the health service there is a need to consider the costs of interventions in order to allocate resources efficiently
- Group based intervention may allow clinicians to see a high number of patients at once and may offer relatively low costs per participant
- This doesn't mean that they are cost-effective, accurate information on both the costs and benefits are required
- The opportunity cost of teachers time needs to be considered



# Health economics evidence

- There are few health economic evaluations of Mindfulness Based Interventions (Review in progress)
- Few studies report on the cost of interventions as well as the benefits and evaluating complex interventions is challenging (Edwards et al 2014)
- MBCT recommended by NICE for depression (NICE 2009; Kuyken et al 2008)



# Costing methodologies

- Macro-costing (gross costing / top down)
- Micro-costing (bottom up)
  - Different methodologies can produce different costs and alter study findings / policy recommendations



# Micro-costing framework

Charles et al (2013) present a standardised framework and propose six key steps for micro-costing in public health economics:

**Box 1: Standardized Framework for Micro-Costing Public Health Economics  
(Charles et al 2013)**

- ❖ *Step 1: Development of cost diaries*
- ❖ *Step 2: Cost data gathering for group leaders*
- ❖ *Step 3: Cost data gathering from additional sources as required*
- ❖ *Step 4: Construction of tables*
- ❖ *Step 5: Conduct micro-costing analysis*
- ❖ *Step 6: Conduct sensitivity analysis*



# Costing group based interventions

- The number of participants in a group has an influence on the costs of an intervention
- Costs can be calculated based on the number of participants who attended *or* on the number of allocated spaces
- In the case of closed groups costs should be based on the resources that are allocated to an individual when entering a group (Barret & Byford, 2008)

$$TC_{MBI} = \left( \frac{\left( \left( \frac{wages + overheads}{workingtime} \right) * ratio \right) * duration}{number\_allocated\_group} \right) * no\_sessions\_allocated$$



# Cost diaries and range of costs

- Cost diaries development
  - Booklet format
  - Completed in real-time or retrospectively (within last 4 months)
  - Piloted and amended
  - Perspective defined (Service provider perspective)
- Range of costs identified
  - Building/room (inc. overheads)
  - Course materials/resources
  - Set up costs (inc. teacher training/supervision)
  - Staff resources i.e admin, teacher (including overheads)



# Recruitment and ethics

- Two modes of recruitment:
  - Pilot randomised controlled trial
  - Survey of mindfulness teachers and opportunity sample from conference workshop
- Ethics approval obtained and trial registered



# Preliminary results

- Number of courses
  - (n = 9 courses)
- Settings / Context
  - (University; Hospital; Hospice; Community Centre; Private Residence; Workplace / Health care; Business; Education)
- Unit costs
  - (Applied in £ 2014 from PSSRU where available)
- Missing data
  - (gathered from additional sources as required)
- Discounting and annuitization
  - (no discounting as courses do not span for than 12 months / costs annuitised over 3 / 5 years and spread across the number of courses taught per year)





# Preliminary results

- Development of a Base Case
  - Mindfulness Based Stress Reduction (MBSR)
  - Mindfulness Based Cognitive Therapy (MBCT)
  - Finding Peace in a Frantic World
- Summary Costs
  - £2,786.48 - £6,301.70 per course (exc. Initial set up costs)
  - £111 - £645 per participant (exc. Initial set up costs)



## Next steps

- Micro-costing analysis to be finalised
- Sensitivity analysis to be conducted



# Conclusions

- Rigorous evidence is not available in many of the new areas of MBI application
- In order to make decisions about how best to allocate resources, quality evidence on the demands, benefits and costs of innovations in health care is required (Beecham & Knapp, 2001).
- Methods of evaluating benefits are continually developing and this research informs future methods for measuring the costs



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# Any questions?

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