Long-term mental health effects of mindfulness training: 4-year follow-up of an RCT in medical and psychology students

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Faculty/Presenter Disclosure

Faculty: Reidar Tyssen

Relationships with commercial interests: None
Both individual and organizational interventions are effective (West et al 2016, Panagioti et al 2017)

Mindfulness is also effective (Lomas et al 2018)

Long-term follow-ups are lacking

Psychological mechanisms are less explored
Background II

Previous published reports on this RCT:
de Vibe et al, BMC Med Educ 2013
de Vibe et al, Mindfulness 2015
Halland et al, Coll Stud J 2015
de Vibe et al, PLoS ONE 2018
Solhaug et al, Mindfulness (accepted 2019)
Objectives

To study long-term effects on…

1) …mental distress and well-being (primary outcomes) of a 7-week Mindfulness Based Stress Reduction (MBSR) program

2) …ways of coping, mindfulness (secondary outcomes)

3) the role of meditation practice
Model 4ys

MBSR → Secondary outcomes → Primary Outcomes
Methods/approach

- Two-site RCT (Oslo and Tromsø)
- N= 288 students (medical and psychology)
- MBSR Intervention group (N=144)
  Control group (N=144)
- Follow-up:
  - Baseline (T0), Post intervention: 1 month (T1), 2ys (T2), and 4ys (T3)
MBSR Intervention

- 7 weeks: 6 sessions x 1.5 hour
- 1 session x 6 hours
- 6 groups with 15 to 25 students
- Booster sessions: 1.5 hour semi-annually

1) Simple physical and mental exercises
2) Teaching about mindfulness, stress, coping
3) Group process
4) CDs with daily 0.5 hour exercises
Variables

Primary outcomes:
Mental distress: GHQ-12
Subjective well-being: 4 items (Life satisfaction)

Secondary outcomes:
Coping (Ways of Coping Check List) – Avoidant / Active
Mindfulness (Five Facet Mindfulness Questionnaire)

Frequency and duration of meditation practice
Statistics

Mixed model repeated measures (4 ys)
- Takes into account dependency of the individual measures
- Utilize better longitudinal data (missings)
  - fixed effects
  - random effects
  - covariance matrix

«Long file» of data
Time x group interaction – effect over time
(From de Vibe et al 2018)
Results 4-year follow-up

Primary outcomes:
Reduced mental distress (GHQ-12)* : p<0.001
  Cohen’s $d$ : 0.73* (1m), 0.32 (2ys), 0.24 (4ys)
Increased subjective well-being
  0.46*, 0.13, 0.13

* female students
Results 4-year follow-up

Secondary outcomes:
Problem focused (Active) coping
  Cohen’s $d$: 0.30 (1m), 0.32 (2ys), 0.42 (4ys)
Avoidance coping
  0.18, 0.21, 0.23
Mindfulness
(«non-reactivity») 0.29, 0.14, 0.24
Results 4-year follow-up

Meditation practice predicted long-term mindfulness scores at 1m and 4ys (frequency: p<0.001 & duration: p<0.05)

Mindfulness (Dispositional) and Coping mediated the effects on mental distress (GHQ-12) - though, reversed mediation was also observed
Model 4 ys

MBSR

increase

Mindfulness

Coping

reduction

GHQ-12

?
Other findings from the RCT:
Effect moderation by personality

(De Vibe et al 2015)
6-year longitudinal effects on the secondary outcomes

(de Vibe et al. 2018)
Limitations

- Participants were self-selected – predominantly white
- Selection bias of gender at baseline?
- Lack of active control group with instructor
- Effect sizes were small to medium
Conclusions 4-year study

Sustained effect on mental distress during 2 ys among female students

Enduring effects on secondary outcomes over 4 ys
- mindfulness
- problem focused (active) coping

Secondary outcomes may be important effect mechanisms of mindfulness training