Cognitive behaviour therapy for menopausal symptoms: hot flushes and night sweats

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Cognitive behaviour therapy – an intervention for problematic menopausal symptoms

- Hot flushes and night sweats (HFNS) or vasomotor symptoms (VMS)
- CBT for menopausal symptoms
- Evidence from clinical trials
- Moderators and mediators of CBT
- Current trials and future plans
A Biopsychosocial Model of Menopause

- **Biomedical:**
  Biological (hormones) → menopause experience

- **Biopsychosocial:**
  Biological factors - hormones, vasomotor symptoms
  Psychological factors – appraisal, mood, attitudes
  Social and cultural factors – stress, lifestyle, social meanings
Hot flushes and night sweats

- Heat and sweating on face, torso, variable lasting several minutes; highly variable
- 60-80% women during menopause transition problematic for 20-25%
- Negative impact on sleep, social activities and quality of life
- Recent evidence suggests that some women have them for longer especially if stop taking HRT (Hunter et al 2012 BJOG)
Menopausal symptoms in breast cancer patients

- 60-70% have menopausal symptoms that are more severe than for well women
- Chemotherapy and Tamoxifen can induce and/or exacerbate menopausal symptoms
- Occur at the end of a period of challenging treatment
- Majority Br Ca patients are postmenopausal
- HRT contraindicated
- Need for safe and effective non-hormonal alternatives
Psychological, social and cultural influences

- Considerable differences across cultures
- Hot flushes more prevalent and problematic in Western cultures, less prevalent in some countries e.g. India, Japan and China
- Culture includes negative attitudes to midaged and older women, women’s social status, social meanings and attributions to menopause but also lifestyle (diet, exercise), socioeconomic and reproductive differences (Hunter et al 2009, Climacteric)
- Importantly, negative beliefs about menopause are prevalent and impact on women’s experience (Ayers, Forshaw & Hunter. *Maturitas* 2010, 65; 28–36)
Hot flushes, mood and sleep

- Commonly women seek help when a combination of these factors interferes with QOL.
- Inter-relationships between VMS, mood and sleep problems.
- Assessment and bio-psychosocial formulation important to understand the range of possible precipitating and maintaining factors and their interactions.
Hot flushes & night sweats

• Exact cause unknown

• **Rate of change** of oestrogen associated with release of neurotransmitters (noradrenalin and serotonin) which lower the thermoregulatory temperature set point in the hypothalamus.

• Freedman (2005) found that women who have hot flushes have a narrowed ‘thermoneutral zone’ (TNZ).
Hot flush thresholds with and without symptoms
Measurement of VMS

- Subjective frequency (diaries and questionnaires)

- Ambulatory sternal skin conductance (SSC) provides physiological measure of frequency

- Problem-rating or interference (Hot flush Rating Scale, Hunter et al 1995) is often used as a main outcome in clinical trials as it is associated with QOL and help-seeking to a greater extent than frequency (Ayers et al 2013)
Sternal skin conductance trace of hot flushes
Bahr monitor (Simplex Sci.)

Elapsed Time

15:18 hours
Magnitude = 9.6 micromhos

15:51 hours
Magnitude = 3.6 micromhos
Psychological research on hot flushes

• Triggers identified in 50% HF e.g. stimulants, rushing
• Associated with general stress and with anxiety before during the menopause (Freeman et al 2005; Hunter et al 2009; Mitchell & Woods, 2015)
• Negative beliefs about menopause and negative beliefs about HFNS associated with problematic HFNS (Reynolds 2000; Hunter & Rendall 2007; Hunter & Chilcot 2013)
• Evidence that relaxation and paced breathing can be helpful
Cognitive behaviour therapy

- Behaviour
- Physical Symptoms
- Feelings
- Thoughts
A cognitive model of HFNS
(Hunter & Mann J Psychosom Res 2010)

Information input
- Oestrogen Withdrawal
- Menopause status
- Hot flush threshold
- Triggers

Detection & attribution
- Perceived hot flush Frequency
- Selective attention
- Body focus
- Stress negative affectivity
- Mood Depression Anxiety

Cognitive appraisal
- Problem-rating
- Beliefs: Menopause Hot flushes

Behaviour
- Behavioural reactions
- Help seeking
Hot flush beliefs and behaviours

• Hot Flush Beliefs Scale (Rendall, Simmons, Hunter, 2008 Maturitas) three main cognitive reactions:
  – Social anxiety/embarrassment
  – Perceived lack of control over hot flushes
  – Negative beliefs about sleep and night sweats

• Hot Flush Behaviour Scale (Hunter et al 2011 Menopause)
  – Avoidance
  – Cooling (safety?) behaviours
  – Positive behaviours (accepting, breathing, humour)

Social embarrassment associated with avoidance

Positive behaviours with more control and neutral/positive beliefs
Typical Vicious Circle

Physical Symptoms
Heat, sweaty, palpitations, red face, breathless, tingling

Thoughts
People will think something is wrong
My body is letting me down
not another one!
I can’t cope!

Feelings
Embarrassed, ashamed, anxious, angry, trapped, frustrated, out of control

Behaviour
Avoid or leave situations, hide face
CBT for hot flushes and night sweats

4 x 2 hour sessions or 6 x 1.5 hours, ie 8 hours, 6-12 women
Aims: To reduce the problem-rating of HFNS

- Psychoeducation about HFNS and menopause
- Monitoring HFNS, identifying precipitants
- Paced breathing for stress and HFNS
- Cognitive therapy for stress and beliefs about HFNS and menopause
- Behavioural experiments and strategies
- CBT for night sweats and sleep

Manualised, ppt presentations, CDs and homework sheets
Cognitive Behaviour Therapy clinical trials

- **MENOS1** RCT Group CBT with usual care for breast cancer patients (*Mann et al Lancet Oncology* 2012)
- **MENOS2** RCT Group CBT with Self-Help CBT and usual care for well women (*Ayers et al Menopause* 2012)
- **EVA** RCT Group CBT vs exercise, exercise plus CBT and usual care (Dutch Cancer Society) CBT (*Duijts et al J Clin Oncology* 2012)

Prime outcome=HFNS Problem-rating
MENOS 1: RCT of Group CBT for women who have menopause symptoms following breast cancer treatment

Measures

- **Primary outcome:** The Hot Flush Problem Rating
- **Secondary outcomes:** Hot flush frequency (subjective and physiological - SSC), anxiety and depressed mood (Women’s Health Questionnaire), Health related QOL SF-36

- **Mediators:**
  - Hot Flush Beliefs and behaviours
  - Mood
  - SSC physiological frequency

Qualitative Interviews – perceptions of symptom change and thoughts about CBT (26 wks only)
MENOS 1 Sample characteristics

- Age: 54 (sd=8) years
- Ethnicity: 85% white
- 52% premenopausal at diagnosis
- Approx 3 years (sd=3.5) since Br Ca diagnosis
- 41% mastectomy; 66% chemotherapy; 80% radiotherapy; 86% endocrine treatments
- 33% had taken HRT in past; 9% SSRIs and 9% clonidine
- 2 women HRT, 5 SSRI and 3 gapapentin, 2 clonidine but symptomatic
MENOS1 Results

- Average duration: 26 mths (SD=39)
- Frequency of HF/NS: 70 (sd=39) per week
- Problem-rating (1-10): 6.32 (sd=2.23)

Sign effect of Group CBT compared to Usual Care:
- reduced the problem rating of menopausal symptoms (effect size 1.19)
- improved depressed mood (WHQ), sleep, memory and QOL (SF36)
- maintained improvements at 6 months
MENOS 1 Results: HFNS Problem rating
Effect size 1.19
MENOS 1 Percent showing clinically significant reduction in Hot Flush problem rating

- 9 weeks:
  - CBT: 68%
  - TAU: 38%

- 26 weeks:
  - CBT: 78%
  - TAU: 33%
MENOS 2 RCT of Group and Self help CBT for well women with menopause symptoms

Ayres et al

Screened= 295
Randomised=140

Interview and Randomisation
Pre-treatment assessment

Group CBT N=48
Post-treatment Assessment N=46
6-8 weeks later
Follow up N=39
6 months

Self-help CBT N=47
Post-treatment Assessment N=40
6-8 weeks later
Follow up N=32
6 months

Control N=45
Assessment N=43
6-8 weeks later
Follow up N=40
6 months
Cognitive behavioural interventions

Group CBT
• Delivered by a Clinical Psychologist in four 2 hour sessions, once a week for 4 weeks to groups of 6-10 women

Guided Self Help CBT
• Given same information and CD as group
• Sessions were guided using initial interview and one telephone contact
Results

• HF/NS Problem rating
  Sign group differences for both Group CBT and Self help CBT compared with usual care at 6 and 26 weeks
  **Effect sizes:** Group CBT: 1.18 (CI 1.36-2.88)
  Self-Help CBT: 1.41 (CI 1.29-2.86)

• HF/NS Frequency
  Sign group difference for NS but not HF; highly variable.

• Improvements in mood and QOL (including memory) at 6 weeks for both Group and Self Help CBT; emotional and physical functioning improvements 26 weeks for Group CBT.
Results: Primary outcome hot flush problem rating
Effect sizes: 1.18 to 1.41
Night sweat frequency, over the trial period
Percentage of participants with a clinically significant improvement on hot flush problem rating (2 point reduction) at 6 and 26 weeks post randomisation.

- **Group**
  - % who had a clinically significant reduction at 6 weeks
- **Self Help**
  - % who had a clinically significant reduction at 6 weeks
- **Control**
  - % who had a clinically significant reduction at 6 weeks
**EVA: RCT Group CBT compared to exercise, exercise plus CBT and usual care (Duijts et al J Clin Oncol 2012)**

422 premenopausal breast cancer patients randomised:  
- **CBT** $n=109$ vs **E** $n=104$ vs **CBT plus E** $n=106$ vs **Usual Care** $n=103$  
Reassessed at 12 weeks and 6 months

Results:  
- Sign reduction in HFNS Problem Rating for **CBT** and **CBT/E** groups but not for Exercise or Usual Care at 12 weeks and 6 months  
- Effect sizes ranges from 0.39-0.56.  
- Improvements in QOL  
- Results support the MENOS findings
Moderators – who does it help?

**MENOS1**: CBT was effective at reducing problem rating at 9 weeks regardless of: Age, BMI, time since breast cancer diagnosis, menopausal status at time of diagnosis, or type of cancer treatment

The treatment effect was significantly greater:

✓ in *women not receiving chemotherapy* compared to those who did and

✓ those with higher levels of *psychological distress* at baseline.

**MENOS2**: CBT was effective regardless of age, BMI, menopausal status, or psychological distress at baseline.

*Chilcot, Norton & Hunter, Maturitas 2014; Norton S, Chilcot J, Hunter MS. Menopause 2014*
Mediators: how does CBT work?

Sign reduction in physiological HF frequency for CBT for well women (MENOS2) but not for breast cancer patients (MENOS1) (Stefanopoulou & Hunter, Menopause, 2013).

CBT mainly mediated by changes in beliefs about perceived control/coping and beliefs about hot flushes, night sweats and sleep; beliefs in social context and changes in depressed mood were partial mediators.

Those who had read the book and carried out the homework assignments benefitted more.

(Norton, Chilcot & Hunter 2014; Chilcot, Norton & Hunter Maturitas 2014)
MENOS 1 and 2 qualitative interviews: women’s reaction to the CBT using IPA

TOTAL (n=50)

MENOS 1 participants (n=20)
Nov 2009-Mar 2010

10 interviews (main analysis)
10 Interviews (validation)

MENOS 2 participants (n=30)
Nov 2009-Aug 2010

Group CBT (15 interviews)
Self-Help (15 interviews)

Main analysis (10 Interviews)
Validation (5 Interviews)

Main analysis (10 Interviews)
Validation (5 Interviews)
Qualitative interviews MENOS 1 and 2

- Results were consistent across MENOS 1 and 2 trials
- Improved coping (using information, paced breathing and strategies) associated with a restored sense of control
- Acceptance seemed to be central to improved experience (staying with the hot flush symptoms, rather than avoiding)
- Women experienced beneficial changes which extended beyond their HFNS symptoms

A cognitive model of VMS

- Oestrogen Withdrawal
- Menopause status
- Hot flush threshold
- Triggers
- Perceived hot flush Frequency
- Selective attention
  - Body focus
- Problem-rating
- Control and Social beliefs
  - Hot flushes
- Behavioural reactions
  - Help seeking
- Stress negative affectivity
- Mood
  - Depression
  - Anxiety
Current work and future directions

Self Help book Managing Menopausal Symptoms and Manual for Health Professionals  
(Hunter & Smith, Routledge 2014; 2015)

Evaluating cCBT with Dutch group for breast cancer patients (Aaronson et al)

MANCAN RCT - self help CBT for men with VMS following prostate cancer treatment (Stefanopoulou et al 2015, Psychooncology)

MENOS4 RCT training nurse specialists to deliver group CBT for breast cancer patients (Fenlon, Hunter)

Menos@work trial multicentre RCT self help CBT in the workplace (Hunter, Griffiths, Hardy): RCT self help CBT and intervention for trade unions/managers
Conclusions

• These results demonstrate that CBT is a viable non-medical treatment for hot flushes (Carpenter et al North American Menopause Society Position paper on non-hormonal treatments for VMS, Menopause, 2015)

• CBT is widely applicable and is mainly mediated by changes in cognitive appraisal of hot flushes, as well as mood (and possibly physiological change for well women)

• CBT is also recommended for anxiety and depressive symptoms occurring during menopause transition (NICE guidance menopause 2015)

Thank you

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