Prevention of Major Depressive Disorder in Older Adults
Disclosures
(past 5 years)

National Institute of Mental Health
National Institute on Aging
National Center for Minority Health and Health Disparities
National Heart, Lung, and Blood Institute
Centers for Medicare & Medicaid Services (CMS)
Patient Centered Outcomes Research Institute (PCORI)
John A. Hartford Foundation
American Foundation for Suicide Prevention
Commonwealth of Pennsylvania
Clinical and Translational Science Institute (CTSI)
National Palliative Care Research Center (NPCRC)
American Association for Geriatric Psychiatry (services as associate editor)
UPMC Endowment in Geriatric Psychiatry
Forest Laboratories, Pfizer, Lilly, Bristol-Myers Squibb
(provide pharmaceuticals for NIH-sponsored research)
Prevention Encompasses

- Preemption of recurrent episodes of depression
- Protection from developmental complications of depression
Why is prevention important?

- Prevalence, persistence, and substantial morbidity/mortality of major depression
- Treatment is only partially satisfactory in reducing disability
Limited access to treatment, especially minorities: social inequalities of risk widen with age—socioeconomic gradient in treatment access, utilization, and response

Mental health workforce issues: need models of large-scale depression prevention that could be carried out by general medical clinicians or lay health counselors using cost-effective, stepped care approaches
Is prevention of major depression possible?
Meta-analysis of Incidence Rate Reduction in Major Depression

- 32 studies qualified for inclusion
- Incidence rate ratio (IRR) = 0.79 (95% CI: 0.69~0.91), indicating a 21% decrease in incidence in prevention groups in comparison to control groups
- Low heterogeneity ($I^2=24\%$)
- Number needed to treat (NNT) to prevent one new case of depressive disorder was 20

Stepped-Care Prevention of Anxiety and Depression in Late Life

A Randomized Controlled Trial

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Context: Given the public health significance of late-life depression and anxiety, and the limited capacity of treatment, there is an urgent need to develop effective strategies to prevent these disorders.

Objective: To determine the effectiveness of an indicated stepped-care prevention program for depression and anxiety disorders in the elderly.

Design: Randomized controlled trial with recruitment between October 1, 2004, and October 1, 2005.

Setting: Thirty-three primary care practices in the northwestern part of the Netherlands.

Participants: A total of 170 consenting individuals, 75 years and older, with subthreshold symptom levels of depression or anxiety who did not meet the full diagnostic criteria for the disorders.

Intervention: Participants were randomly assigned to a preventive stepped-care program (n=86) or to usual care (n=84). Stepped-care participants sequentially received a watchful waiting approach, cognitive behavior therapy-based bibliotherapy, cognitive behavior therapy-based problem-solving treatment, and referral to primary care for medication, if required.

Main Outcome Measures: The cumulative incidence of DSM-IV major depressive disorder or anxiety disorder after 12 months as measured using the Mini International Neuropsychiatric Interview.

Results: The intervention halved the 12-month incidence of depressive and anxiety disorders, from 0.24 (20 of 84) in the usual care group to 0.12 (10 of 86) in the stepped-care group (relative risk, 0.49; 95% confidence interval, 0.24 to 0.98).

Conclusions: Indicated stepped-care prevention of depression and anxiety in elderly individuals is effective in reducing the risk of onset of these disorders and is valuable as seen from the public health perspective.

Trial Registration: isrctn.org Identifier: ISRCTN26474556.

Arch Gen Psychiatry. 2009;66(3):297-304
Selective prevention of depression in post-stroke patients

Cox proportional Hazards controlled for age, gender, lesion site, ADL score, MMSE and SFE showed treatment was only significant factor.

* HR 4.5, 95% CI, 2.4-8.2, p<.001 for ESC vs PL
† HR 2.2, 95% CI, 1.4-3.5, p<.001 PST vs PL

Robinson et al. JAMA, 2008
Depression incidence in macular degeneration at 2 & 6 months by intervention assignment

Rovner et al, AGP, 2006
Assess the efficacy of Problem Solving Therapy for Primary Care (PST-PC) for preventing episodes of major depression and mitigating depressive symptoms in older black and white adults, as compared with an active control condition -- coaching in healthy dietary practices (DIET).


**Objective:** Indicated Prevention of Major Depression in Older Blacks and Whites
1) Brief intervention with both antidepressant treatment and with depression-delaying or preventing effects in older adults with macular degeneration and following stroke

2) May lead to improved self-efficacy and resilience, together with reduction in learned helplessness

3) Deliverable by non-mental health clinicians in primary care

Why PST-PC?
1) Culturally acceptable, active comparison intervention to control for time and attention in PST-PC and to facilitate enrollment of black participants

2) More than a control for face-to-face contact: an active intervention in its own right, coaching participants to address the challenges of implementing healthy dietary practices (an active coping component)
3) no issues of stigma, safety, or financial burden

4) field data from Healthy Black Family Project at Pitt: many respondents reporting high levels of life stress were either overweight or obese

Why DIET?
• 247 participants over two years
  (90 blacks, 154 white, 3 Asian Americans)

• with subsyndromal depressive symptoms
• recruited into a randomized, “indicated” depression prevention trial

• comparing PST-PC and DIET on time to episodes of major depressive disorder (SCID/DSM-IV)

• level of depressive symptoms (Beck Depression Inventory)
Cumulative intervention time was similar in the two arms, totaling about 6 hours over two years.
1) similar numbers of sessions at baseline (6-8) and cumulative times (about 6 hours over 2 years)

2) similar number of semi-annual booster sessions
3) same interventionists: six white social workers and mental health nurses

4) both utilize active coping to tackle a problem (in the case of DIET, associated with managing health issues)
Recruitment and Retention of Black Participants

1) partnership with community champions
2) endorsement by Community Research Advisory Board
3) non-use of anti-depressant medication
4) low respondent burden

5) conduct of study in community settings (including participant homes)

6) payment of honorarium for completion of each scheduled assessment (totaling $450 over two years)

Recruitment and Retention of Black Participants
PST-PC and DIET did not differ significantly in time to major depressive episodes (HR = .87; p > .748)

Participants in both arms experienced a low incidence of such episodes:

- 21/247 or 9% over two years (blacks = 9%; whites = 8%)
- compared to published rates of 20-25% to five over 1-2 years in persons with subsyndromal symptoms receiving usual care.
• Participants also showed a mean decrease of 4 points in depressive symptoms, sustained over two years.

• Despite greater burden of depression risk factors among black participants, no differences with whites were found in primary outcomes.
Trajectories of Beck Depression Inventory Scores in PST-PC and DIET
• Improving scores on the SPSI predicted lower depression scores; and vice versa, falling depression scores predicted improving scores on the SPSI.

• This suggests a bidirectional effect: better problem solving leads to improvement in depression, and improvement in depression leads to better problem solving.
• Both PST-PC and DIET are potentially effective in protecting older black and white adults with subsyndromal depressive symptoms from developing episodes of major depression over two years.

• Absent a control for concurrent usual care, this conclusion is preliminary.
1. use of active control condition

2. two years of follow up

3. adequate number of black participants to explore the effects of race on patterns of incident depression, trajectory of depressive symptoms, and health related quality of life

Stahl, et al. AJP 2014
4. testing of a lifestyle intervention (DIET) that is culturally appropriate and acceptable in minority communities, regardless of income

5. may be deliverable by like-ethnic, lay health counselors (peer supporters)

Stahl, et al. AJP 2014
pertinent to integration of primary care and behavioral health services, especially for older patients whose increasing medical comorbidity and disability place them at high risk for major depressive episodes

Stahl, et al. AJP 2014
Challenges for the Future
Since most adults are resilient to depression after a disabling medical event or other negative life events such as bereavement, how can one improve the cost benefit ratio of prevention efforts?

Example: genetic contributions to (1) likelihood of onset (2) time period of risk and (3) likelihood of risk reduction using psychosocial and psychopharmacologic strategies

Need to understand architecture of both risk and resilience to depression in old age
Mechanisms by which Vitamin D and fish oil may lower depression risk

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<th>Vitamin D</th>
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<tr>
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Critical Role of Biologic Markers in Late-life Depression Prevention Trials

Courtesy of Olivia Okereke, MD 2014
Prevention of Late-Life Depression & Anxiety in Low and Middle Income Countries:
An Intervention Development Project

• Charles F. Reynolds III, M.D.
  University of Pittsburgh School of Medicine

• Vikram Patel, M.D.
  London School of Hygiene and Tropical Medicine

• Pim Cuijpers, Ph.D.
  Free University of Amsterdam

• Alex Cohen, Ph.D.
  London School of Hygiene and Tropical Medicine

• Amit Dias, M.D.
  Goa College of Medicine and Sangath
• First formative pilot study of indicated prevention for depression and anxiety in older adults living in an LMIC

• Utilization of lay health counselors to promote task shifting & efficient utilization of scarce mental health resources

• Using lessons from MANAS/RX (treatment) to inform content and strategies for MANAS/Depression Prevention (DP)

Patel et al., 2010
• Evaluated the effectiveness of a lay health counselor (LHC) led intervention

• Combined psychological treatment (psychoeducation and brief interpersonal psychotherapy) with antidepressants

• Collaborative stepped-care approach with 1360 participants and 1436 controls recruited from 24 primary care cluster from the public and private sectors; cluster-randomized design (LHC practices versus usual care practices)

Patel et al., 2010

Lessons from the MANAS Trial
(“MANAS” = promotion of mental health, in the local Konkani language)
- 6-month recovery rates from common mental disorders: 65% versus 53% (NNT = 8)
- Stronger effect in public facility attenders: 66% versus 43 % (NNT = 4)
- In subthreshold cases evidence for a protective effect, with 6-month prevalence rates of 7.6% versus 5.6%, (p = .07)

Patel et al., 2010
Preventing Incident Major Depression and Anxiety Disorders in Older Adults

Primary Care Patients ≥ 60 Years of Age
n=120
Subthreshold depressive symptoms and no MDD in past 12 months

MANAS/DP
n=60
Assessment point (time from T1):
T1: baseline
T2: 3 months follows completion of intervention
T3: 6 months
T4: 12 months

Usual Care
n=60

Primary Outcomes
-- Incident episodes of major depressive and anxiety disorders
-- Levels of depressive and anxiety symptoms
-- Functional status (WHODAS-II)

Phase II: Pilot Randomized Prevention Trial in 120 Older Adults
“Those who allege that old age is devoid of useful activity...are like those who say the pilot does nothing in the sailing of his ship, because, while others are climbing the masts, or running about the gangways, or working at the pumps, he sits quietly in the stern and simply holds the tiller. He may not be doing what younger members of the crew are doing, but what he does is better.

“It is not by muscle, speed, or dexterity that great things are achieved, but by reflection, force of character, and judgment.”

“In the end, old age is not only not poorer, but is even richer.”

--Cato Maior, De Senectute

Cicero, Loeb Classical Library, 1923