



Preventing depression in the WHO European Region



Preventing Depression In the WHO European Region

Keywords

WHO EUROPEAN REGION
DEPRESSIVE DISORDER
PREVENTION
EFFECTIVENESS
COST-EFFECTIVENESS

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
UN City, Marmorvej 51
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office website (<http://www.euro.who.int/pubrequest>).

© World Health Organization 2016

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. The views expressed by authors, editors, or expert groups do not necessarily represent the decisions or the stated policy of the World Health Organization.

Written by:

Professor Dr Filip Smit

Dr Laura Shields

Dr Ionela Petrea

Trimbos Institute

Netherlands Institute of Mental Health and Addiction

WHO Collaborating Centre for Mental Health

CONTENTS

	<i>Page</i>
Executive Summary	1
Preventing depression in the WHO European region	2
Depressive disorder	2
Prognosis	2
Disease burden	2
Why prevent depression?.....	2
Preventing depression	3
Selecting target groups for prevention	4
Types of prevention.....	4
Organising preventive health care.....	5
Delivery formats of preventive interventions	5
Prevention in various target groups and settings.....	6
Children and adolescents	6
Mothers at risk of postpartum depression.....	6
Working population	7
Depression and co-morbid non-communicable diseases	8
Prevention depression among older people.....	8
Conclusions.....	9

Executive Summary

Depression is a leading cause of non-fatal disease burden worldwide, with a lifetime prevalence of 9% among European adult men and 17% among European adult women. The economic costs associated with depression are staggering: in 2007, the economic costs of depression alone amounted to €136.3 billion in the European Economic Area. The largest share of these costs stem from reduced productivity (€99.3 billion) and health care costs (€37.0 billion).

At present, European health care systems are not entirely successful in averting depression's disease burden through treatment alone. Therefore, a public health strategy that complements evidence-based treatment approaches is needed. Given the large number of new cases of depression each year, preventing depression might be key to sustaining and improving population health.

The onset depressive episode may develop at any moment over the life course. Therefore it is important that prevention efforts are tailored for particular target groups and age groups. For instance, depression prevention programs need to be available for children and young people during their crucial formative years, young mothers at risk of postpartum depression, and people of working age. In addition, population ageing throughout Europe means that a greater share of the population will be over the age of 65, when risk factors for depression such as bereavement and comorbid health conditions are more prevalent. Prevention efforts tailored for older people are therefore also important.

Preventive interventions promote coping and self-management skills among people 'at risk' of developing depression. Prevention is likely to offer good value for money, especially when offered as effective, scalable and cost-effective self-help interventions via self-help books, web-based platforms, or via mobile technologies. It is recommended that preventive self-help interventions be offered with a minimum level of therapist support to increase compliance and reduce drop-out, which result in better health outcomes for the client.

It is also recommended that depression prevention be integrated in existing health systems. This would require a more comprehensive view from those working in the health care sector, with a focus not only on somatic illnesses, but also on the mental aspects of wellbeing. In addition, it requires a focus not only on the (curative) treatment of acute cases, but also adopting a proactive attitude with regard to early identification of people at risk of developing depression, particularly vulnerable groups. Finally, prevention efforts can and should extend beyond health care settings and be embedded in schools, workplaces and homes for the elderly.

It should be noted that the majority of the reviewed evidence comes from research carried out in West Europe, North America and Australia. This needs to be kept in mind, because the WHO European Region is characterized by a great diversity – economically, demographically, epidemiologically and culturally. Hence, a public health strategy that works well in one country may not offer the best solution in another country. Therefore, conclusions and recommendations need to be interpreted within the context of these limitations and with some caution.

Over all, the current scientific evidence-base supports preventive action across the countries of the WHO European Region. The task at hand requires substantial investments in preventive mental health care, but the potential benefits can be equally rewarding. After all, mental wellbeing is a key resource for learning, productivity, participation and inclusion. Investing in proactive care to promote, protect and sustain mental health in the population is therefore likely to offer good value for money.

Preventing depression in the WHO European region

Depressive disorder

Depressive disorder is a highly prevalent condition, affecting approximately 33.4 million people in the WHO European region. Depression is characterised by an abnormal depressed mood (dysphoria) and a loss of pleasure (anhedonia). Depression persists most of the day for at least two weeks, lasting six months on average. Depression is characterised by a lack of motivation and this can be quite crippling. Other symptoms can cause marked functional impairment, such as sleep disturbance (insomnia or hypersomnia), lack of energy, poor concentration, a lack or increase in appetite, inappropriate feelings of self-reproach, and recurrent morbid thoughts about death and suicide.

Prognosis

Depression carries an unfavourable prognosis. On average, a depressive episode lasts six months and in 20% of cases, it lasts longer than two years. In 60-70% of the cases, depression becomes a recurrent condition with multiple episodes over the life-span with people spending as much as 20% of their lifetime in a depressed mood.¹ Compulsively contemplating death and suicide is often symptomatic of depression and makes suicide a real risk. About 60% of all suicides are committed by people who were diagnosed with depression and all-cause mortality rates are higher by a factor of 1.65 in people with depression.

Disease burden

The 2010 Global burden of Disease study identified depression as the second leading cause of non-fatal disease burden (years lived with disability, YLD). Depression was also a contributor of disease burden related to suicide and ischemic heart disease. The economic costs of depression, due to health service uptake and productivity losses stemming from absenteeism and lesser efficiency while at work, are quite substantial. In 2007, the economic costs of depression alone amounted to €136.3 billion in the European Economic Area. The largest share of these costs are accounted for by reduced productivity (€99.3 billion) and followed by the remaining €37.0 billion (27.5%) by the health care system.² These findings emphasize the importance of including depressive disorders as a public health priority and implementing cost-effective strategies to reduce its burden.

Why prevent depression?

Substantial efforts are made to make treatments available for depression, however relatively limited efforts are made to prevent the influx of new cases of depression. According to one Australian study, preventing depression is important because current treatment options can only reduce depression's disease burden by 34%, even if all patients suffering from depression would receive an evidence-based treatment³. More realistically, when adjusting this hypothetical scenario to current levels at which evidence-based treatments are offered, the percentage of the avoided disease burden would drop to a meagre 16%. Similar conclusions were drawn from findings from the WHO European region.⁴ These findings point to the importance of offering preventive interventions in conjunction

¹ Vos T, Haby MM, Barendregt JJ, Kruijshaar M, Corry J, Andrews G. The burden of major depression avoidable by longer-term treatment strategies. *Archives of General Psychiatry* 2004;61:1097-103.

² Andlin-Sobocki, P., Jonsson, B., Wittchen, H. U. and Olesen, J. Cost of disorders of the brain in Europe. *European Journal of Neurology*, 2005;12 (Suppl. 1), 1–27.

³ Andrews G, Issakidis C, Sanderson K, Corry J, Lapsley H. Utilising survey data to inform public policy: comparison of the cost-effectiveness of treatment of ten mental disorders. *British Journal of Psychiatry* 2004;184:526–33.

⁴ Chisholm D, Sanderson K, Ayusto-Mateos JL, Saxena S. Reducing the global burden of depression: population-level analysis of intervention cost-effectiveness in 14 world regions. *British Journal of Psychiatry* 2004;184:393-403.

with evidence-based treatment in order to decrease the disease burden. Figure 1 depicts the main epidemiological characteristics of depressive disorder in the general population between the ages of 18-64. The numbers in Figure 1 are per one million people to facilitate projection of the epidemiology of depression on the populations of European countries.

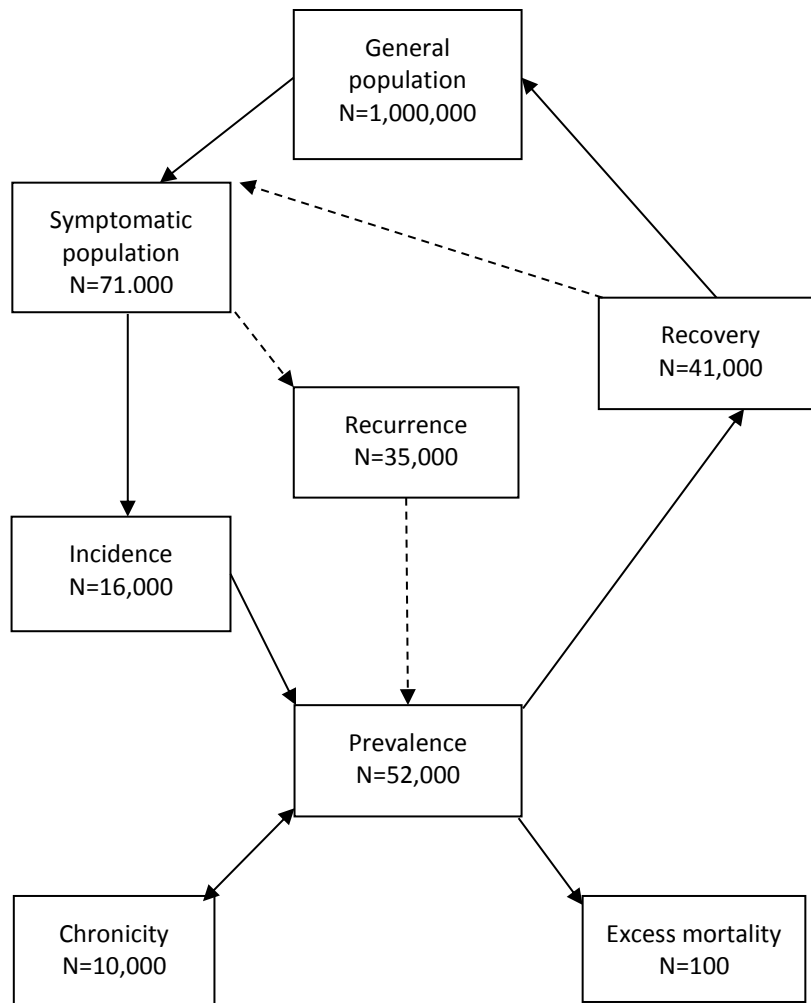


Figure 1. The epidemiology of depression per one million people aged 18-64 years

In a source population of 1,000,000 people (*General population*) approximately 71,000 people will have some depressive symptoms (*Symptomatic population*). Of the symptomatic population, approximately 16,000 will develop a depressive disorder meeting stringent diagnostic criteria (*Incidence*). The new cases become part of the prevalent group of existing cases. It is worth noting that the influx of new cases is relative large (about 30%) compared to the 52,000 people with the full-blown disorder (*Prevalence*). Given the comparatively large influx of new cases, it is not effective to solely rely on treatment of prevalent cases to sustain population health. To reduce the influx of new cases, prevention efforts are needed. Even after recovery, many people will have a subsequent depressive episode (*Recurrence*), therefore prevention of first-ever cases and recurrences are seen as public health priorities.

Preventing depression

Over the past fifteen years our knowledge has increased considerably in identifying target groups for prevention, underlying risk factors, and the effects of preventive interventions on depression. A substantive evidence base exists indicating that preventive interventions are effective in reducing the incidence of new depressive disorders.⁵

⁵ Muñoz RF, Cuijpers P, Smit F, Barrera AZ, Leykin Y. Prevention of major depression. *Annual Review Clinical Psychology* 2010;6:181-212.

The same is true for preventive interventions that are offered over the Internet.⁶ There is also emerging evidence that depression prevention can be cost-effective and in some instances, even cost saving.⁷

Selecting target groups for prevention

Risk factors

Risk factors that play a role in the pathogenesis of mental disorders can be biological, psychological and social. Examples of risk factors for mental disorders include poverty, discrimination, social exclusion, illicit drug use, family history of mental illness, child maltreatment (abuse and neglect), adverse life events (e.g. becoming unemployed) and chronic illness. Each of the risk factors increases the risk of a mental disorder. However, when several risk factors act together then the risk of developing depression increases sharply. Therefore it is best to look for combinations of risk factors when identifying target groups for prevention.⁸

Protective factors

Factors known to protect against depression include social support, personal competencies (intelligence, social skills, self-understanding, 'agency'), and resilience (fortitude, strength, mental fitness). Resilience is expressed in resourceful ways of coping with adversity. In this sense, resilience will help to buffer the adverse impact of stressors.

Types of prevention

Prevention aims to reduce the risk of becoming depressed by enhancing coping and self-management skills in 'at risk' people. Three types of prevention can be distinguished: 1) *universal prevention*, targeting the general population and promoting resilience and mental fitness; 2) *selective prevention* directed at people exposed to risk factors; and 3) *indicated prevention* directed at emerging depressive symptoms not yet meeting the diagnostic criteria for the full-blown disorder promotes self-management. In other words, the distinction between the various types of prevention are made by looking at the target group (see Table 1):

Type of prevention	Possible target groups (examples)
1. Universal prevention	<ul style="list-style-type: none"> • All pupils or students from the same school • All employees at a firm • All residents in a nursing home
2. Selective prevention	<ul style="list-style-type: none"> • Children of mentally ill parents • Veterans after combat • Patients in general hospitals
3. Indicated prevention	<ul style="list-style-type: none"> • GP patients presenting with some depressive symptoms • Young mothers screened positive for early signs of postnatal depression • Self-referred users of a preventive e-health intervention

Table 1. *Universal, selective and indicated prevention: examples*

⁶ Buntrock C, Ebert DD, Lehr D, Smit F, Riper H, Berking M, Cuijpers P. Effect of a web-based self-help intervention for prevention of major depression in adults with sub-threshold depression: a randomized clinical trial. *Journal of the American Medical Association* 2016;315(17):1854-1863.

⁷ Zechmeister I, Kilian R, McDaid D and the MHEEN group. Is it worth investing in mental health promotion and prevention of mental illness? A systematic review of the evidence from economic evaluations. *BMC Public Health* 2008;8(20).

⁸ Smit, F., Ederveen, A., Cuijpers, P., Deeg, D. & Beekman, A. Opportunities for cost-effective prevention of late-life depression: An epidemiological approach. *Archives of General Psychiatry* 2006;63:290-296.

Organising preventive health care

The distinction between universal, selective and indicated prevention may help to design proactive health care systems in a fully integrated way (see Figure 2):

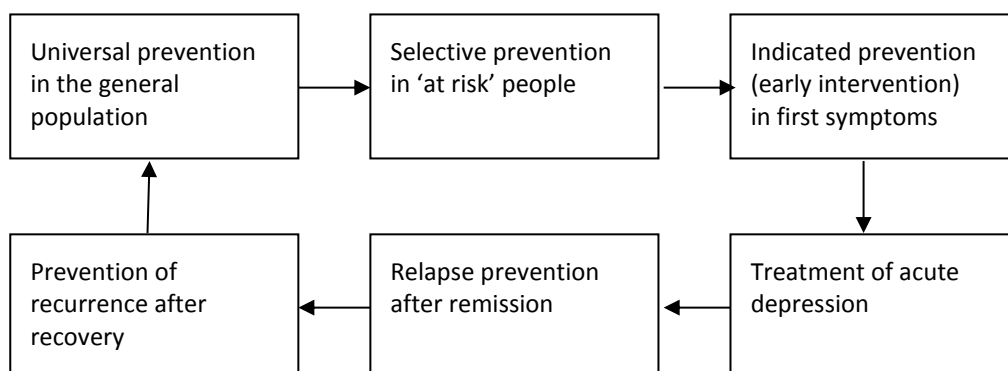


Figure 2. *Types of prevention to sustain population health (adapted after Beekman et al., 2004)*

Delivery formats of preventive interventions

Face-to-face contact

- Preventive interventions are most often delivered as face-to-face interventions by trained lay people, nurses, social workers, psychologists or general practitioners.
- Interventions can be provided in group or individual format, and tailored to specific groups of people such as a class of pupils, a team of employees, or residents in a nursing home.
- Such interventions are typically offered over 4 – 8 sessions of 60 – 90 minutes duration. This way of delivering preventive interventions can be fairly labour-intensive and may not be very cost-efficient in countries where labour is expensive.

Self-help tools

- Self-help books and self-help programs that are offered over the Internet (e-health) can be a way to support people in better managing their own health.
- Preventive self-help interventions can also be offered digitally through mobile devices such as smart phones and tablets (m-health).
- New e-health and m-health technologies offer many advantages, such as scalability, low cost, privacy, less stigma and ease of use. Both e-health and m-health interventions can be made interactive and engaging.
- Pure self-help interventions that are offered over the Internet benefit from economies of scale: the (marginal) per-recipient costs decrease as more people make use of the e-health intervention.

Blended interventions

- There is converging evidence that e-health interventions, especially when offered with minimal therapist support, can be as effective as face-to-face interventions offered by qualified therapists.
- However, the users' compliance with e-health interventions can be low when it is offered without any therapist-led guidance. This finding has spurred interest in 'blended interventions' – i.e. preventive e-health interventions with some guidance by a therapist or a coach.
- Blended interventions may offer the best of two worlds: certain parts of the intervention are best guided by a 'live' therapist (either face-to-face, by email, or during chat sessions over the internet), whereas routine aspects of the therapy are perhaps better delegated to the computer.

Prevention in various target groups and settings

Preventive interventions have been developed for a range target groups and for a variety of settings, such as students in schools and prevention of postpartum depression in perinatal care. Depression can be diagnosed across the life span. For instance, during adolescence there is a period of elevated risk for a first depression. Likewise, young mothers may have an elevated risk for postpartum depression. Also people in the productive age range may be at risk for burnout, anxiety and depressive disorders and may therefore require preventive interventions. This is especially true for older people who are confronted by many risk factors for depression such as bereavement, physical impairments and loneliness. We provide more details in the following sections.

Children and adolescents

Depression affects 2.5% of children and up to 8.3% of adolescents, and subclinical depressive symptoms are present in as many as 30% of adolescents. Often adult depressive disorders are preceded by long periods of suffering from subclinical depressive symptoms in adolescence. In adolescence, depression is associated with poor psychosocial and academic outcomes and an increased risk of developing other mental health problems. Preventive interventions during adolescence and young adulthood could reduce the risk of developing full-blown disorder in adulthood.

Interventions

- Prevention interventions – universal, selective and indicated – were shown to reduce risk of disorder onset and reduce symptom levels for internalizing disorders (such as depressive disorder) among youth for up to twelve months.⁹
- Universal prevention programs focusing on depression in schools through fostering resilience show only modest effects, however this may be due to the fact that such interventions simultaneously target students with early depressive symptoms as well as healthy individuals who are unlikely to benefit from the intervention.¹⁰

Economic Evidence

- Benefits of preventive intervention for ‘at risk’ teenagers (such as children from parents with a psychiatric history) are obtained at acceptable financial costs.¹¹
- After-school screening and subsequent psychological CBT-based intervention represent good value for money.¹²
- An Australian modelling study showed that e-health interventions offered at school for children aged 11-17 years is highly cost-effective.¹³

Mothers at risk of postpartum depression

One in seven mothers (i.e. 13%) are affected by postpartum depression. Postpartum depression has the same characteristics as other depressive disorders, with the exception that the onset is within four weeks post-partum.

⁹ Stockings EA, Degenhardt L, Dobbins T, Lee YY, Erskine HE, Whiteford HA and Patton G. Preventing depression and anxiety in young people: a review of the joint efficacy of universal, selective and indicated prevention. *Psychological Medicine* 2016;46:11-26.

¹⁰ Sheffield, J.K., Spence, S.H., Rapee, R.M., Kowalenko, N., Wignall, A., Davis, A. & McLoone, J. Evaluation of universal, indicated, and combined cognitive-behavioral approaches to the prevention of depression among adolescents. *Journal of Consulting and Clinical Psychology* 2006;74:66-79.

¹¹ Lynch FL, Hornbrook M, Clarke GN, Perrin N, Polen MR, O'Connor E, Dickerson J. Cost-effectiveness of an intervention to prevent depression in at-risk teens. *Archives of General Psychiatry* 2005;62:1241-8.

¹² Mihalopoulos C, Vos T, Pirkis J, Carter R. The population cost-effectiveness of interventions designed to prevent childhood depression. *Pediatrics* 2012;129(3):e723-e730.

¹³ Lee YY, Barendregt JJ, EStockings EA, Ferrari AJ, Whiteford HA, Patton GA and Mihalopoulos C. The population cost-effectiveness of delivering universal and indicated school-based interventions to prevent the onset of major depression among youth in Australia. *Epidemiology and Psychiatric Sciences*, Available on CJO 2016 doi:10.1017/S2045796016000469

Postpartum mood disorders constitute the most frequent form of maternal morbidity following delivery. Moreover, the impact of postpartum depression on new-borns can be substantial and long lasting. Preventing postpartum depression is therefore a recognised public health priority.

Interventions

- Evidence-based preventive interventions can be integrated in the in the perinatal care setting and be provided by midwives and nurses through home visits or other contacts with the new mother. The latter is referred to as ‘integrated perinatal care’ and has a focus not only on physical health, but also on mental health. In addition, the focus is on both treatment and prevention. For prevention of postpartum depression, nurses need to be trained in recognising depressive symptoms and receive training in psycho-education and basic cognitive behaviour therapy techniques. The key issue is that nurses learn to establish an open relationship with the new mothers, discuss emotions and feelings of depression while being sensitive to feelings of embarrassment, and then provide the mothers with psycho-education to create a sense of realistic hope.
- It is worth mentioning that the interventions offer benefits for the mother, but also have positive spill-over effects for the child and the rest of the family.
- Both interventions help to reduce the incidence rate of postpartum depression by 35%, but while encouraging, the available evidence for the effectiveness of this type of intervention is still small.¹⁴

Economic Evidence

- There is a high probability that integrated nurse-led interventions are cost-effective.¹⁵ By preventing postpartum depression, mothers can resume work sooner after maternity leave, health care costs for mothers will be lower and finally, the child may benefit in the long term in both in the personal and educational domain.¹⁶

Working population

Substantial costs arise from absenteeism due to depressive disorders. Employers lose 27-35 working days per employee suffering from depression. Preventing depression may therefore present a favourable economic case from the employer’s perspective.

Interventions

- Relatively few prevention trials have been conducted in work settings, rendering the evidence weak. Studies conducted in the general population suggest that preventive interventions help in reducing the risk for developing major depressive disorder by 15-35% and there is no reason to assume that these effects would be substantially different in the working population.¹⁷
- Relatively simple low-cost interventions can be easily implemented and successful. For example, British Telecom created a policy wherein managers maintain telephone contact with employees on sick leave. Maintaining contact and encouraging return to work was conducive in creating a sense of belonging and reduced the number of sick leave days.

Economic evidence

- In a large Dutch hospital nurses were screened for symptoms of stress, burnout, depression and anxiety. Screen-positive nurses were referred to their occupational physician (company doctor) for consultation. The

¹⁴ Brugha, T.S., Wheatly, S., Taub, N.A., Culverwell, A., Freidman, T., Kirwan, P., Jones, D.R. & Shapiro, D.A. Pragmatic randomized trial of antenatal intervention to prevent post-natal depression by reducing psychosocial risk factors. *Psychological Medicine* 200;30:1273-1281.

¹⁵ Petrou S, Cooper P, Murray L, Davidson LL. Cost-effectiveness of a preventive counselling and support package for postnatal depression. *International Journal of Technology Assessment in Health Care* 2006;22:443–453.

¹⁶ Morell CJ, Warner R, Slade P, Dixon S, Walters S, Paley G, Brugha T. Psychological interventions for postnatal depression: cluster randomised trial and economic evaluation. The PONDER trial. *Health Technology Assessment* 2009;13(30):1-153.

¹⁷ Van Zoonen K, Buntrock C, Ebert DD, Smit F, Reynolds C, Beekman ATF, Cuijpers P. Preventing the onset of major depressive disorder: a meta-analytic review of psychological interventions. *International Journal of Epidemiology* 2014;43:318-329.

physicians had received prior training in psycho-education and basic CBT skills. This intervention was successful in decreasing symptom levels and increasing functioning at work, which had favourable economic effects.¹⁸

- Low cost e-health interventions might result in even better return-on-investment ratios, but might also be associated with greater uncertainty about the interventions' effectiveness. However, experience in the Netherlands indicated that e-health interventions need to be well implemented and fully integrated with the company's human resource management and be adapted to the company's culture to guarantee use by employees.

Depression and co-morbid non-communicable diseases

Depression often co-occurs with other non-communicable diseases (NCDs) such as coronary heart disease, stroke, cancer and diabetes. Depression can negatively impact the course of the NCDs thus increasing health care utilisation and concomitant health care costs. However, the fact that many people with NCDs require on-going health care provides a good opportunity to offer proactive interventions to reduce the risk of depression.

Interventions

- Preventive interventions known to be effective are based on cognitive behavioural therapy (CBT) or problem solving therapy (PST) and can be offered as guided self-help (bibliotherapy or e-health) with, for example, weekly follow-up phone calls by a health professional or therapist. Such preventive self-help interventions have been made available for patients visiting their GP.¹⁹

Economic Evidence

- Screening combined with minimal contact bibliotherapy is cost-effective in primary care settings.^{20 21}

Prevention depression among older people

- Owing to an increase in life expectancy in most European countries, the burden of depression will progressively shift towards older age groups. Depression in later life is associated with excessive health care utilisation and high concomitant economic costs. Providing adequate care to older people is one of the major challenges faced by European health systems, as only a minority of older people receive adequate treatment for depression. This treatment gap needs to be addressed and some preventive interventions (see below) can help to bridge this gap. Here it could be argued that many older people regularly visit their general practitioner, providing an ample opportunity to engage them in preventive interventions. In addition, residential homes and nursing homes provide a setting where it is logistically easy to reach many older people at risk of becoming depressed. It should also be noted that older people represent the fastest growing group of new Internet users – allowing for wide-scale provision of preventive e-health interventions.

Interventions

- Stepped care in primary care and residential homes for older people with sub-threshold depressive symptoms have been demonstrated to be particularly effective in reducing the incidence of depression. The preventive

¹⁸ Noben C, Evers S, Nieuwenhuijsen K, Ketelaar S, Gärtner F, Sluiter J, Smit F. Protecting and promoting mental health of nurses in the hospital setting: is it cost-effective from an employer's perspective? *International Journal of Occupational Medicine and Environmental Health* 2015;28(5):891-900.

¹⁹ Willemsse GRWM, Smit F, Cuijpers P, Tiemens BG: Minimal contact psychotherapy for sub-threshold depression in primary care: a randomised trial. *Br J Psychiatry* 2004;185:416-421.

²⁰ Smit F, Willemsse G, Koopmanschap M, Onrust S, Cuijpers P, Beekman A. Cost-effectiveness of preventing depression in primary care patients: randomised trial. *British Journal of Psychiatry*. 2006;188:330-336

²¹ McCrone, P., Knapp, M., Proudfoot, J., Ryden, C., Cavanagh, K., Shapiro, D. A., Ilson, S., Gray, J. A., Goldberg, D., Mann, A., Marks, I., Everitt, B., and Tylee, A. Cost-effectiveness of computerised cognitive-behavioural therapy for anxiety and depression in primary care: randomised controlled trial. *British Journal of Psychiatry* 2004; 185 55-62.

stepped-care approaches consist of sequentially offering watchful waiting, guided self-help, therapist-led problem solving treatment, and referral to a general practitioner for pharmaceutical treatment.²²

Economic evidence

- An economic evaluation suggests that stepped-care in the GP setting is cost-effective relative to routine primary care.²³

Conclusions

Depressive disorder erodes quality of life, reduces productivity and is an obstacle to the fulfilment of social and familial roles. As a consequence, depression has become a leading cause of disability worldwide.

Though the majority of the world's population resides in low and middle-income countries (LMICs) they command a very limited share of mental health resources available globally. LMICs may be impacted by mental disorders to a greater extent due to more limited resources (both human and financial resources) as well as weaker health and social care systems. People living in poverty not only lack resources, but are also more often exposed to risk factors and are less able to access good quality health care. These factors place them at elevated risk for developing a mental disorder. In LMICs the first problem is access to care and having technical and financial resources in place to provide that care. In both high-income countries (HICs) and LMICs alike, mental illness is associated with a vicious cycle of poverty, exclusion, unemployment and stigma. Only in LMICs, one faces an even greater struggle than in a HIC with depression, as the health systems are usually weak and the focus primarily on curative solutions rather than preventive solutions.

Even well endowed health care systems in high-income countries can avert the disease burden due to mental disorders to only a limited extent. Low coverage rates of interventions, poor adherence rates and treatments that are not always evidence-based all hinder the effectiveness of current mental health care systems. In addition, depressive disorders have a high incidence rate and high rates of recurrence, causing large numbers of people to look for help, not once, but multiple times during their life-course. Therefore, prevention is needed to reduce the influx of new cases and to reduce the risk of depressive recurrence.

The population's mental capital (i.e., people's cognitive, emotional and social-skills resources required for social and professional role functioning) has great economic value but is also vulnerable to the adverse impact of mental disorders. From an economic point of view, prevention may offer good value for money when it helps to both avoid suffering, treatment costs, caregiver burden, and the costs that stem from productivity losses. For prevention of depressive disorders to remain economically sustainable within a healthcare system, its cost-benefit ratio needs to be improved. Offering preventive interventions over the Internet on a large scale is likely to introduce such an improvement.

Research demonstrates that the incidence of depression can be reduced by 15-35% when prevention is offered. The 'number needed to prevent one case of depression' typically ranges between 8 and 10, an effect size that compares favourably with established preventative interventions in medicine (e.g. a widely accepted NNT of one in 125 to prevent stroke with statins). Moreover, offering preventive interventions in a stepped-care format is successful in reducing incidence by 50% and this effect is maintained over 2 years.

²² Van 't Veer-Tazelaar PA, van Marwijk HWJ, van Oppen P, van Hout HPJ, van der Horst HE, Cuijpers P, Smit F, Beekman ATF. Stepped-care prevention of anxiety and depression in late life: a randomized controlled trial. *Archives of General Psychiatry* 2009;66:297-304.

²³ Van 't Veer-Tazelaar PA, Smit F, van Hout HPJ, van Oppen P, van der Horst HE, Beekman ATF, van Marwijk HWJ. Cost-effectiveness of a stepped care intervention to prevent depression and anxiety in late life: randomised trial. *British Journal of Psychiatry* 2010;196:319-325.

Economic evidence indicates that depression prevention in adults is cost-effective especially when offered in a self-help format with minimal guidance from a therapist. It may even be cost saving from a societal perspective when the cost offsets due to changes in productivity are accounted for. Preventive e-health interventions are a case in point: they have potential to become cost-effective as they do not rely on scarce resources such as therapists' time but rather promote self-management and are scalable, thus bringing down the marginal per-patient costs in a significant way.

The current evidence-base supports preventive action for depressive disorders, but any action needs to be based on good business judgement and to be sensitive to local conditions and preferences.

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
The former Yugoslav
Republic of Macedonia
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

World Health Organization Regional Office for Europe

UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark

Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01

Email: euwhocontact@who.int

Website: www.euro.who.int