Joint Action on Mental Health and Well-being

DEPRESSION, SUICIDE PREVENTION AND E-HEALTH

Situation analysis and recommendations for action

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ABBREVIATIONS

AHD: Anxiolytic and hypnotic drugs

BAC: Blood alcohol concentration

CBT: Cognitive Behaviour therapy

cCBT: Computerized Cognitive Behaviour Therapy

DALY: Disability-Adjusted Life Years

DSH: Deliberate Self-harm

EAAD: European Alliance Against Depression

ERSI: Estonian-Swedish Mental Health and Suicidology Institute

EUREGENAS: European Regions Enforcing Actions Against Suicide

GBD: Global Burden of Disease Study

GP: General Practitioner, primary care physician

IFOTES: International Federation OF Telephone Emergency Services

JAMHWB: Joint Action on Mental Health and Wellbeing

MBCT: Mindfulness-based Cognitive Therapy

MDD: Major Depressive Disorder

MHGAP: Mental Health Global Action Plan

MHFA: Mental Health First Aid

MONSUE: Monitoring Suicidal Behaviour In Europe

MS: Member State

NOSP: National Office for Suicidal Prevention

NRDSH: National Registry of Deliberate Self-Harm

OSPI: Optimised Suicide Prevention Programmes and their Implementation in Europe

ÖVSKK: Austrian Association for Suicide Prevention

PREDI-NU: Preventing Depression and Improving Awareness through Networking in the EU

SA: Situation Analysis

SEYLE: Saving and Empowering Young Lives in Europe

SUPREME: Suicide Prevention through Internet and Media Based Mental Health Promotion

TTT: Train The Trainers

WP: Work Package

YAM: Young Aware of Mental Health

YLDs: Years Lived with Disability

EXECUTIVE SUMMARY

Within the framework of Joint Action on Mental Health and Wellbeing (JAMHWB) key national stakeholders of the following participating countries (Bulgaria, Denmark, Estonia, Germany, Hungary, Ireland, Latvia, Netherlands, Sweden) were brought together to collaborate on the development of a status report and action framework in the thematic areas of prevention of depression and suicide and mainstreaming of e-mental health interventions.

In Part I the report provides an overview of the burden of depression and suicide in Europe and characteristics of high-risk groups, the treatment gap and the economic and societal impacts. Further, the social determinants are discussed , with particular focus on the impact of economic crisis and depression and suicide. It also provides an overview of the some investments in policy developments and initiatives from institutions such as the European Commission and other EU institutions and international bodies that have taken place in recent years. Where possible it considers the potential impact that they have had. It also notes some significant developments in specific member states which potentially might be replicated elsewhere in Europe.

The report presents an overview of best practices against depression and suicide, covering training programs provided to health care professionals, media reporting guidelines and health care approaches to depression and suicide (pharmacotherapy and psychotherapy). It also addresses interventions specific to age groups (young people and elderly people). Key components of suicide prevention are described, covering restriction of access to lethal means, restriction of alcohol consumption, follow up care of suicide attempters, low threshold crisis intervention helplines and multi-level community-based programs.

In addition to literature based review of good practices, the report provides a more in-depth analysis of the situation in the 8 EU Member States participating in this Workpackage. This analysis covered legislation, policy and planning for prevention of depression and suicide , financing in countries; it presents the situation at the programmatic level for prevention of depression and suicide and notes the Involvement of service users and carers in it. National and international collaborations in the prevention of depression and suicide are described as well as the level of utilisation of services for depression and suicide prevention. Additionally, it outlines treatment availability for in the 8 Member States and gives an insight into the interventions available in these counties, addressing issues around collaboration and ownership of interventions, evidence-based approaches and efficiency of interventions. Finally, it notes the problems and gaps identified in the WP4 countries.

Part I of the report ends with the presentation of the key recommendations for tackling depression and suicide developed through the activities of WP4, as follows:

- Engage stakeholders at the government level to update health legislation to include depression and suicide as a priority

- Promote legislation concerning the rules of responsible media communication about suicidal events

- Promote legislation about the restriction of lethal means and alcohol

- Promote intersectorial collaboration with important industrial/economic stakeholders increasing awareness of depression at the workplace

- Stimulate investment in programmes targeted at families and high risk groups e.g. unemployed, migrants, lesbian, gay, bisexual, transgender, queer (LGBTQ), people with chronic disorders with support to build resilience and reduce stress

- Support early learning and coping with disabilities in childhood and adolescence in order to enhance resilience (possible intersectorial link: early learning and mental health promotion in schools)

- Stimulate school preventive programmes and start prevention early. Support pupils in crisis and give them treatment opportunities

- Promote workplace stress management programmes with a special focus on prevention and awareness of depression.

- Capacity building I. Increase the surveillance of depression in the health sector especially among patients with chronic conditions.

- Capacity building II. Increase the accessibility of treatment for depression.

- Capacity building III. Increase the availability of low threshold support in crisis.

- Strengthen the community response to mental health problems, reduce stigma.

In Part II the report addresses the mainstreaming of e-mental health interventions across European Member States. First, the rationale for implementing e-mental health interventions are reviewed and key reasons for promoting and sustaining e-mental health solutions presented: cost effectiveness, impact of anonymity and privacy of e-mental health on reducing stigma and tackling barriers to health seeking behaviours, and potential of e-mental health solutions narrow the treatment gap and improve access to care. Further on, the report addresses the necessity of joint action and coordinated effort at EU level while acknowledging that key factors to mainstream e-health are beyond national borders and many lessons learned could be shared across Member States.

In light of the stated objective of the Joint Action to produce recommendation for action in mental health, the report provides an overview state of the e-mental health field in Europe. To understand in which policy framework e-Mental Health applications are developed and operate, it gives a brief overview of international eHealth policies within EU member states. The European Union (EU), the World Health Organisation (WHO) and the Organisation for Economic Cooperation and Development (OECD) have been identified as being the most advanced in the development of international eHealth policies (Lang, 2012). However, this report finds that while current policy documents on e-health provide a broad framework for e-health interventions, including those on mental health, however the topics covered by these documents are limited and they do not address some of the key issues on which policy provisions are necessary for areas in e-mental health that deliver care digitally (e.g. e-therapies or serious gaming). Since such policy provisions do not already exist, the report proposes that platforms such as this Joint Action can provide needed policy provisions and also serve as an example for other areas of health where care might be delivered digitally.

Complementing the in-depth review of in the 8 EU Member States participating in Workpackage 4, a situational analysis of the mainstreaming of e-mental health has been carried out covering e-mental health legislation, policy and planning, financing for e-mental health tools and treatments, practices in these countries and a SWOT analysis of mainstreaming e-mental health into health systems. In addition, a literature review has been carried out summarising and describing briefly a select number of currently available e-interventions for mental health including the full spectrum of e-mental health interventions from psycho-education to screening, self-management, self-help, e-therapy, tele-health and applied games. The review of interventions is not meant to be exhaustive but rather to present an overview of different types of e-mental health solutions available and demonstrate the breadth and availability within the European context.

While noting the increasing number and availability of e-mental health interventions, the report tackles the challenges for their wide implementation in Europe. Some of these challenges relate specifically to mainstreaming e-mental health such as: scalability and dissemination, acceptability and uptake among professionals, reaching mutually beneficial agreements with private technology sector, quality assurance and ethical considerations, cross-border transferability and awareness of availability of

e-health interventions. In addition, a number of challenges are identified in design and development of interventions such as low adherence among users, design for engagement and retention, high quality evidence-based research and lack of quality information for end users.

Part II of the report ends with the presentation of the key recommendations for mainstreaming implementation of e-mental health in Europe, developed through the activities of WP4, as follows:

RECOMMENDATIONS FOR ACTION FOR MAINSTREAMING E-MENTAL HEALTH

1. Include e-mental health interventions alongside with face-to-face interventions into publicly funded health services, and align them with national health standards and practices

2. Initiate voluntary agreements with ICT, gaming industry and other relevant private sector parties addressing ethical issues, intellectual property and dissemination practices

3. Raise awareness and increase capacity of (mental) health professionals to integrate e-mental health in their regular practice

4. Set up at EU level a quality control mechanism for e-mental health interventions with links to health care commissioning bodies and insurance companies in Member States

5. Integrate e-mental health into overall e-health policies at EU level and at Member States level, ensuring reflection of relevant additional component and provisions (e.g. health care standards, liability issues)

RECOMMENDATIONS FOR ACTION FOR IMPROVED DESIGN AND DISSEMINATION

1. Blend models of service delivery, combining face-to-face with digital interventions

2. Design for engagement and retention of users

3. Collaborate with technology experts

4. Improve quality and feasibility of evaluation studies, allowing for smoother translation of innovation into practice

5. Develop a EU-wide repository of e-mental health interventions

INTRODUCTION

The Joint Action for Mental Health and Well-being (JA MH-WB), launched in 2013, aims at building a framework for action in mental health policy at the European level and builds on previous work developed under the European Pact for Mental Health and Well-being. Funded by the European Agency for Health and Consumers, the Joint Action involves 51 partners representing 28 EU Member States and 11 European organizations, and is coordinated by the Nova Medical School/Faculdade de Ciências Médicas, Nova University of Lisbon, Portugal. The JA MH-WB aims to contribute to the promotion of mental health and well-being, the prevention of mental disorders and the improvement of care and social inclusion of people with mental disorders in Europe.

The Joint Action provides a platform for exchange of views, cooperation and coordination between Member States, to identify evidence based best policy approaches and practices and analyze activities and produce a framework for action in areas covered by its core work packages (WP):

- WP 4. Taking evidence-based action against depression, including actions to prevent suicide. E-health.

- WP 5. Managing the evolution towards community-based and socially inclusive approaches in mental health

- WP 6. Promoting mental health at the workplace

- WP 7. Promoting mental health and preventing depression in children and adolescents

- WP 8. Mental health in all policies

The general objectives of the Joint Action are to: 1) Evaluate progress made and share experience in the fields of mental health and well being in EU and Member States; 2) Supporting the engagement and commitment of Member States and other stakeholders in effective action to develop mental health in Europe; 3) Developing a framework for action at EU and MS level to tackle mental health problems and challenges identified in the different mental health areas.

WP 4 covers 2 areas: prevention of depression and suicide and mainstreaming of e-mental health. The first area is coordinated by Semmelweis University Budapest, Hungary. The second area is coordinated by the Trimbos Institute, Netherlands. This workpackage has 8 associated partners as follows: the Bulgarian National Center of Public Health and Analyses (BUL), the National Board of Health of Denmark (DK), the Estonian-Swedish Mental Health and Suicidology Institute (EST), the University of Leipzig (GER), the Health Services Executive Ireland (IRE), Latvian National Health Service (LAT), and the Swedish National Board of Health and Welfare (SWE). In addition it has collaborative partners such as the Faculty of Medical Sciences Lisbon and European Alliance Against Depression.

The Joint Action for Mental Health and Well-being (JA MH-WB), launched in 2013, aims at building a framework for action in mental health policy at the European level and builds on previous work developed under the European Pact for Mental Health and Well-being. Its mandate was invited by Council Conclusions on the European Pact for MH and Well-being of 2011 (Under the Hungarian Presidency) , to identify evidence based best policy approaches and practices and analyze activities in different areas including taking evidence based measures against depression and to address suicide prevention. Funded by the European Agency for Health and Consumers, the Joint Action involves 51 partners representing 28 EU Member States and 11 European organizations, and is coordinated by the Nova Medical School/Faculdade de Ciências Médicas, Nova University of Lisbon, Portugal.

Activities under WP4 included:

- Preparation of a database of key stakeholders in the participating countries;

- Organisation of meetings of Member States and of key stakeholders: decision makers in health, insurance companies, health professionals, users and carers organizations, e-mental health experts ICT and gaming industry, various relevant EC directorates;

- Producing a review of suicide and depression prevention interventions;

- Producing a review of current status of e-mental health in Europe and its potential to be mainstreamed into routine care in Europe;

- Carrying out a situation analysis across WP4 Member States and an analysis of interventions submitted by WP4 Member States;

- Producing report of findings of the consultations;

- Preparation of recommendations for action on prevention of depression and suicide and on mainstreaming of e-mental health.

This report presents the findings of activities carried out within this workplackage. Part I of the report addresses the prevention of depression and suicide, and Part II addresses the mainstreaming of e-mental health.

PART I. PREVENTION OF DEPRESSION AND SUICIDE IN EUROPE

1. THE BURDEN OF DEPRESSION AND SUICIDE IN EUROPE – FREQUENCY, SIGNIFICANCE, ECONOMIC AND SOCIETAL IMPACTS

1.1. Frequency of depression and suicide in Europe

> **Key messages**
>
> - *Every year around 30 million European citizens suffer from unipolar depression*
>
> - *Every fourth woman and every ninth man suffers from a major depressive episode at least once in their lifetime*
>
> - *By the year 2020, depression is projected to reach 2nd place in the ranking of Disability Adjusted Life Years (DALYs)*
>
> - *About 58,000 suicides are committed in the EU countries per year*
>
> - *Depression was found to be a leading risk factor for suicidal behaviour in many studies*

DEFINITION OF DEPRESSION

Unipolar depression is a common illness worldwide which needs to be distinguished from bipolar disorder, yet bipolar disorder is also characterized with depressive episodes.   Depression is a clinical term describing a medical condition that affects the way mood is controlled by the brain – a mood disorder. Experiencing depression involves intense negative emotions and feelings and loss of interest, fatigue, change in sleep pattern, sexual activity and weight or appetite, negative ideas such as pessimism, low self-esteem, indecisiveness and suicidal ideation, as well as other specific symptoms. On the whole, these symptoms will produce negative effects on people's lives, for example impacting on personal wellbeing, work and relationships. It impacts all ethnic and socioeconomic groups and can occur at any age. The mean age for the first episode of depression is in the thirties. Although there are known, effective treatments for depression, fewer than half of those affected in the world receive such treatments. Depression is multicausal, and resulted from a complex interaction of social, psychological and biological factors. Depression can, in turn, lead to more stress and dysfunction worsening the affected person's life situation and depression itself. There are interrelationships between depression and physical health (*http://www.who.int/mediacentre/factsheets/fs369/en/*) (WHO, 2012).

A negative life event or severe and prolonged stress, can trigger a depressive episode, but sometimes depression will occur spontaneously without any obvious cause. Other interacting factors contribute to the onset and maintenance of depression, including genetic factors, changes in hormone levels, certain medical conditions, stress, grief or difficult life circumstances. Any of these factors in combination can lead to changes in brain physiology and difficulty in adapting to external and internal events, leading to the signs and symptoms of depression.

PREVALENCE OF UNIPOLAR DEPRESSION IN EUROPE

Every year around 38% of the EU population suffer from at least one mental disorder. This corresponds to an estimated 164.7 million persons. The European Study of the Epidemiology of Mental Disorders (*http://public-files.prbb.org/publicacions/3594-11817%20EpidemiolPsichSoc%20de%20Girolamo.pdf*) (ESEMeD) found that mood and anxiety disorders were the most widespread lifetime disorders. The most frequent mental disorders in terms of the number of persons affected across all age groups are: anxiety disorders (69.1 million, 14.0%), unipolar depression (30.3 million, 6.9%) and insomnia (29.1 million, 7%). There are significant gender differences: women disproportionally affected by depression (10.3% of all the DALYs), while for men alcohol use disorders are the leading relative contributors to the disease burden in Europe (5.3% of all the DALYs). The three most important contributors to the burden of disease are depression (7.2% of the overall burden of disease in Europe), Alzheimer's disease/dementia (3.7%) and alcohol use disorders (3.4%) (Wittchen et al., 2011). Graph 1. represents the prevalence of mental disorders in Europe.

Figure 1. Prevalence of mental disorders in Europe

(Wittchen et al., 2011)
Mental Disorders by prevalence (and estimated number of persons affected in millions)

12-month prevalence (no. persons affected)
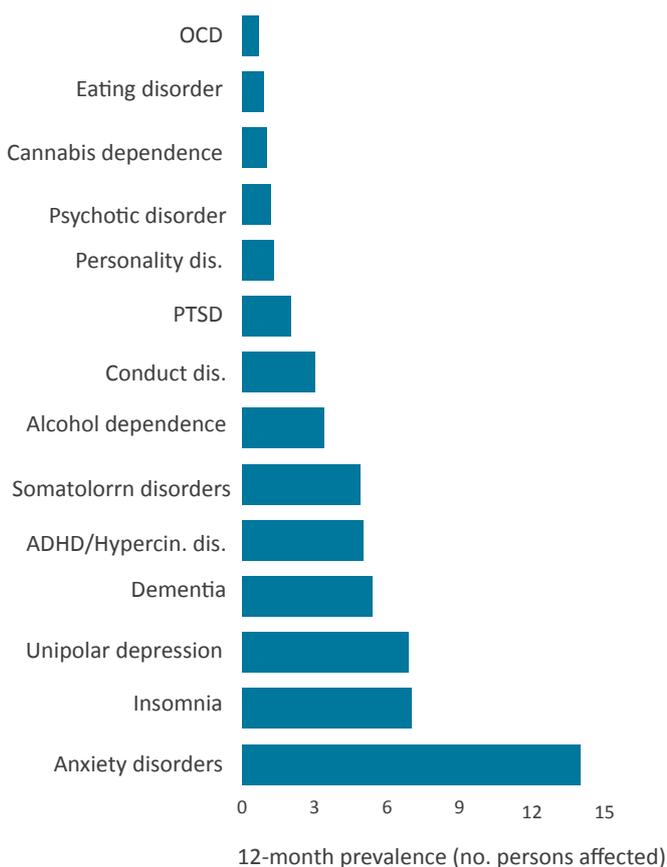
(Wittchen et al., 2011)

By the year 2020, depression is projected to reach 2nd place worldwide in the ranking of Disability Adjusted Life Years (DALYs) calculated for all ages and both sexes (Murray & Lopez, 1997). In 2010 the Global Burden of Disease Study found mental and behavioural disorders, such as depression and anxiety, as the primary drivers of disability worldwide, causing over 40 million years of disability in the 20 – 29-year-old population. Depressive disorders were the second leading cause of YLDs (Years Lived with

Disability). Major Depressive Disorder accounted for 8.2% (5.9%–10.8%) of global YLDs and dysthymia for 1.4% (0.9%–2.0%) (Ferrari et al., 2013).

Other studies showed similar results: In 2013 in the EU and EFTA countries major depressive disorder was one of the top three causes of disability (*http://www.healthdata.org/policy-report/global-burden-disease-generating-evidence-guiding-policy-european-union-and-free*) (Institute for Health Metrics and Evaluation, 2013). The European Social Survey (ESS) examined depression among men and women aged 18-75 in 23 European countries. Women report higher levels of depression than men do in all European countries, but there is significant cross-national variation in this gender gap, with the largest gender differences in Eastern and Southern European countries and the smallest in Ireland, Slovakia and Nordic countries (Van de Velde et al., 2010). Figure 2. represents the female-male ratio of the DALY rate in Europe.

Figure 2: Disability Adjusted Life Years (DALY) rate of different diseases in Europe

DALY Rate per 10.000 persons
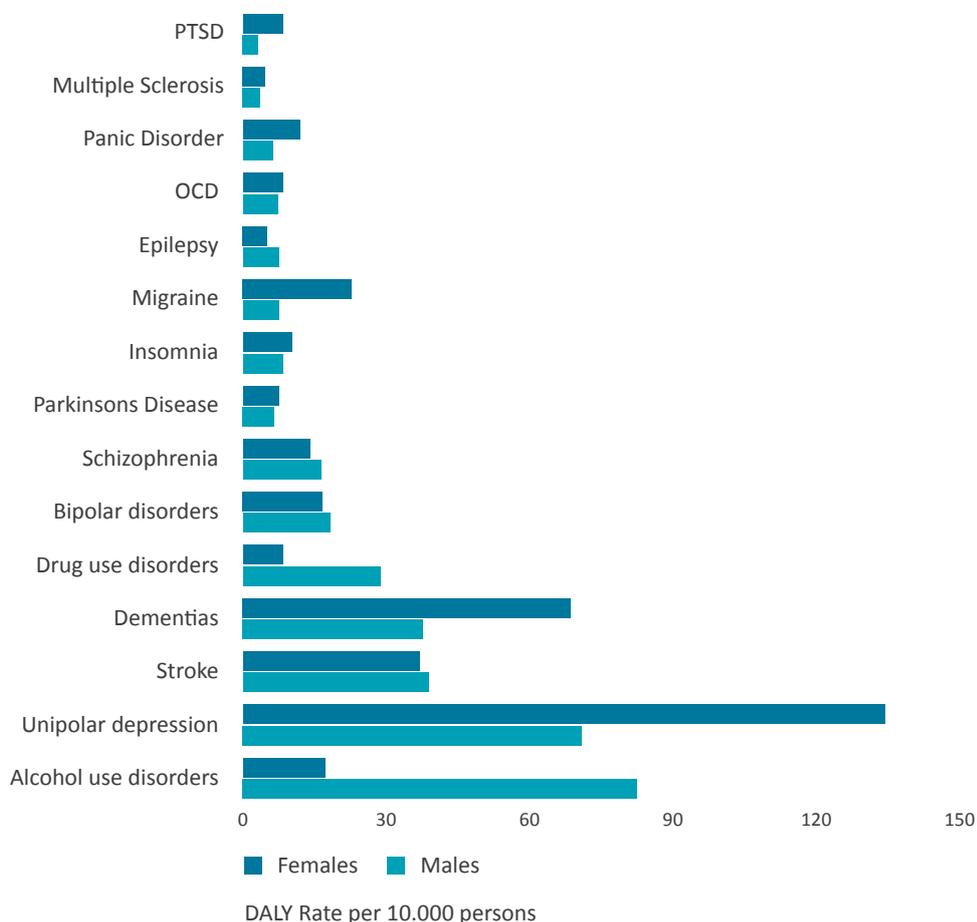
(Van de Velde et al., 2010)

The Special EUROBAROMETER project examined the well-being of the European population (*http://ec.europa.eu/health/ph_information/documents/ebs_248_en.pdf*). Concerning the emotional dimension, in all countries polled, 22% of the population states that they have sometimes or more often "felt so down in the dumps that nothing could cheer them up". A further 29% reported to have felt downhearted and depressed in the past 4 weeks sometimes or more often. Significant discrepancies between countries can be seen: in general 71% of the population in the EU25 countries have never or rarely felt depressed. 83% of Danes and 80% of German and Swedes stated the same whereas the

corresponding numbers for Turks and Latvians were 49% and 54%, respectively. Approximately 1 in 10 residents of Lithuania (10%) and Greece (10%) have felt depressed most of the time while 4% of Luxembourgish citizens reported the same.

Figure 3: Answers rate regarding mental health from the Eurobarometer project

(http://ec.europa.eu/health/ph_information/documents/ebs_248_en.pdf)

QA5 For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...? - % EU
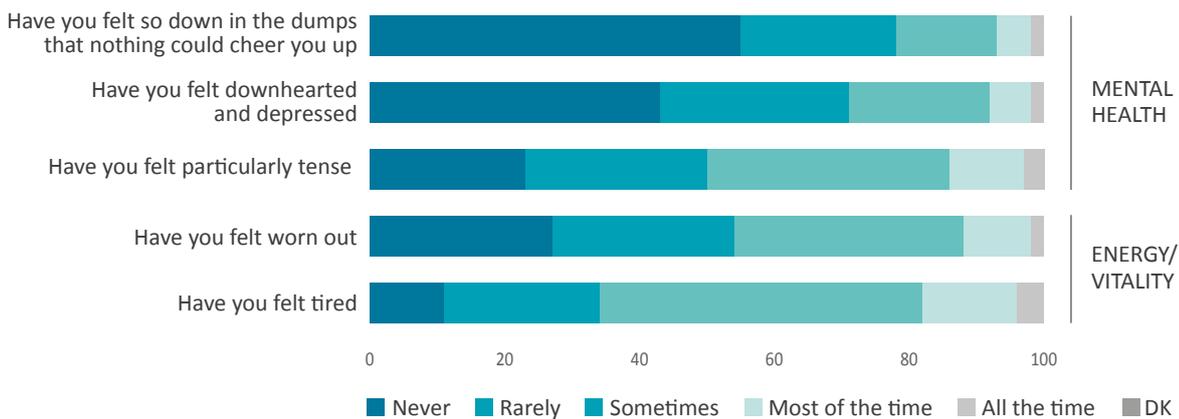
Self-reported prevalence of depression is amongst the 88 European Core Health Indicators (ECHI) established by the Joint Action (JA) on European Community Health Indicators Monitoring (ECHIM). In the year 2008 the proportion of people reporting diagnosed chronic depression in the past 12 months reached 3% in the European population (*http://ec.europa.eu/health/indicators/indicators/index_ en.htm*). The highest rate was reported in Belgium (5.6%), whilst the lowest rate was found in Romania (0.8%).

Figure 4: Proportion of people reporting diagnosed chronic depression in the past 12 months in 2008

(http://ec.europa.eu/health/indicators/indicators/index_en.htm)

PREVALENCE OF SUBTHRESHOLD DEPRESSION AND SUBTHRESHOLD ANXIETY IN 11 EUROPEAN COUNTRIES

Depression and anxiety are significant psychiatric disorders with high rates of morbidity and mortality. Threshold and subthreshold depression and anxiety symptoms are highly prevalent, particularly among adolescent populations. Research performed in the SEYLE study among adolescents in 11 European countries (Austria, Estonia, France, Germany, Hungary, Ireland, Israel, Italy, Romania, Slovenia and Spain) showed that the prevalence of threshold and subthreshold depression (29.2% and 10.5%) and anxiety (32.0% and 5.8%) were considerably high (Balázs et al. 2013). Significantly higher levels of threshold and subthreshold depression and anxiety were observed among females, and both forms of depression and anxiety were significant predictors of suicidality (Balázs et al. 2013).

DEPRESSION AND YEARS LIVED WITH DISABILITY – AN UPDATE

The Global Burden of Disease Study (GBD) provides up-to-date evidence about trends in disease prevalence and years lived with disability (YLDs). According to the recent update of the GBD published on June 7th, 2015, mental and substance abuse disorders accounted for 21.2% of YLDs worldwide, ranging from 15.4% to 36.7%. Major unipolar depression (MDD) is a crucial contributor: Between 1990 and 2013, it had a 53.4% increase in prevalence and same 53.4% in percentage change in YLDs, and consequently became the second most frequent cause of YLDs globally. By 2010 depression had become one of the six leading causes of YLDs in almost all European countries (Table 1). This dramatic increase is only partly explained by the ageing of the world's population, however, the age-standardised increase in prevalence and change in YLDs are still 4.2% and 4.7%, respectively.

Consequently, major depressive disorder (MDD) has become the leading cause of YLDs in 56 countries, the second leading cause in 56 countries, the third in 34 countries and among the top ten causes of YLDs in every county (Global Burden of Disease 2013 collaborators, 2015). These dramatic figures invoke aligned actions on an international, national and local community level.

Table 1: Major depression is amongst the top 6 causes of years lived with disability in Europe in 2010

(The Global Burden of Disease Study)

Data available: http://vizhub.healthdata.org/gbd-compare/

COUNTRIES	PERCENT OF TOTAL YLDS (%)	RANKING OF DEPRESSION AS LEADING CAUSE OF YLDS		PERCENT OF TOTAL YLDS (%)	RANKING OF DEPRESSION AS LEADING CAUSE OF YLDS
Albania	9,4	3rd leading cause	Latvia	10,1	3rd leading cause
Andorra	10,5	3rd leading cause	Lithuania	8,2	2nd leading cause
Austria	8,3	5th leading cause	Luxembourg	11,1	4th leading cause
Belarus	11,3	2nd leading cause	Macedonia	9,1	3rd leading cause
Belgium	6,8	4th leading cause	Malta	11,1	4th leading cause
Bosnia-Herzegovina	6,4	3rd leading cause	Moldova	7,9	2nd leading cause
Bulgaria	7,7	5th leading cause	Montenegro	9,8	3rd leading cause
Croatia	11,6	3rd leading cause	Netherlands	13,6	5th leading cause
Cyprus	10,2	3rd leading cause	Norway	9,3	4th leading cause
Czech Republic	5,8	3rd leading cause	Poland	6,8	3rd leading cause

COUNTRIES	PERCENT OF TOTAL YLDS (%)	RANKING OF DEPRESSION AS LEADING CAUSE OF YLDS		PERCENT OF TOTAL YLDS (%)	RANKING OF DEPRESSION AS LEADING CAUSE OF YLDS
Denmark	8,7	3rd leading cause	Portugal	7,4	2nd leading cause
Estonia	11,6	1st leading cause	Romania	7,6	3rd leading cause
Finland	10,0	4th leading cause	Russia	11,4	2nd leading cause
France	8,1	2nd leading cause	Serbia	6,6	2nd leading cause
Germany	8,1	6th leading cause	Slovakia	6,6	3rd leading cause
Greece	8,5	4th leading cause	Slovenia	7,8	4th leading cause
Hungary	5,45	3rd leading cause	Spain	8,2	4th leading cause
Iceland	8,6	4th leading cause	Sweden	7,9	3rd leading cause
Ireland	7,4	1st leading cause	Switzerland	10,8	5th leading cause
Israel	8,7	2nd leading cause	UK	5,2	4th leading cause
Italy	8,1	6th leading cause	Ukraine	6,8	2nd leading cause

PREVALENCE OF SUICIDE IN EUROPE

Depression and suicidality are two important and largely overlapping public health problems in Europe (Lonnqvist, 2009). Depression was found as a leading risk factor for suicidal behaviour in many studies. Almost 15% of the people with major depression die by suicide, and 59-87% of suicidal people have major depression at the time of their suicide (Rihmer, 2007). The prevalence of depression and suicidal behaviour also appear to be linked with risk-behaviours such as excessive alcohol use, illegal drug use, heavy smoking, reduced sleep weight problems high internet use not related to school/work, and truancy (Pan- European SEYLE Study, Carli et al., 2014)

There are about 58,000 suicides in the EU annually/every year, 75% of which are committed by men. There are 8 Member States that are amongst the 15 countries with the highest male suicide rate in the world. Every 9 minutes an EU citizen commits suicide. In 2012 in the European Union the suicide rate was 11.7/100.000 population. There are major gender differences in the suicide rate, in 2012 the suicide rate was 19.4/100.000 among males compared to 4.9/100.000 among females (*http://appsso.eurostat. ec.europa.eu/nui/show.do?dataset=hlth_cd_asdr2&lang=en*) (Eurostat, 2015) (See Table 2.). Suicide rates are 4-5 times higher for men than for women across the European Union, although in the countries with the highest rates, male deaths are up to 6-7 times as common.

Suicide rates vary widely across European countries: the lowest rates can be found in southern European countries – Cyprus, Malta, Greece, Spain and Italy – as well as in the United Kingdom, at eight deaths or less per 100 000 population, and the highest rates in Lithuania, Hungary, Slovenia and Latvia (where suicide rates are more than 50% higher than the EU average). There are eight times more suicidal deaths in Lithuania (30.6/100.000) than in Cyprus (3.8/100.000), these countries have the highest and lowest suicidal death rates in the EU. The second highest suicide rate can be perceived in Hungary (24.1/100.000) (*http://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe-2014/suicide-mortality-rates-2011_health_glance_eur-2014-graph17-en*) (OECD, 2014). Suicide rates increased steadily after 1990 in Lithuania, especially among young men, peaking in 1996. The high suicide rates in Lithuania and Hungary have been associated with rapid socioeconomic transition, employment and other socioeconomic circumstances, increased social insecurity, and the lack of a national suicide prevention strategy. On an individual level, demographic and clinical factors have been cited as determinants for increased suicide risk (*http://www.oecd-ilibrary.org/*) (OECD, 2012).

Since 1995, the mean suicide rate has decreased by 31% in Europe. Although the rates have decreased by 40% or more in Bulgaria, Latvia and Estonia since then, the last two still have one of the highest rates in Europe. Although suicidal death rates increased in Malta, Portugal, Iceland and Poland after 1995, Portugal and Malta remained still below the EU average (See Figure 7) (OECD, 2012).

The number of suicide attempts is estimated to be 10-15 times higher than lethal suicides in Europe (*http://ec.europa.eu/health/archive/ph_determinants/life_style/mental/docs/pact_en.pdf*) (European Comission, 2008). It is important to prevent attempted suicides as they are the strongest indictors for completed suicide. The higher incidence of attempted suicide rates among women reflects the fact that women tend to use less fatal methods than men. With regard to age, young people under 25 and elderly are especially at risk for suicide in the European Union. While suicide rates among the older generation have declined over the last twenty years, only a little progress can be observed among younger people (OECD, 2012).

Table 2: Standardized suicide rate by residence in 2012

(Eurostat 2015)

COUNTRY	TOTAL	MALES	FEMALES
	SUICIDAL DEATHS/100.000 OF THE POPULATION		
European Union (28 countries)	11.72	19.44	4.94
Belgium	18.76	28.91	9.75
Bulgaria	12.11	20.86	5.1
Czech Republic	15.97	28.64	5.18
Denmark	12.22	19.05	5.9
Germany (until 1990 former territory of the FRG)	11.52	18.26	5.74
Estonia	18.4	34.33	6.16
Ireland	12.18	20.55	4.1
Greece	4.41	7.53	1.56
Spain	7.43	12.28	3.3
France	15.71	25.8	7.36
Croatia	18.23	31.58	7.66
Italy	6.68	11.2	2.79
Cyprus	3.82	7.54	0.38
Latvia	21.82	41.56	6.4
Lithuania	30.69	56.59	10.06
Luxembourg	10.69	17.08	4.69
Hungary	24.11	42.21	10.16
Malta	6.4	11.14	2.88
Netherlands	10.66	14.91	6.81
Austria	15.2	25.84	6.51
Poland	16.71	30.78	4.15
Portugal	9.98	18.03	3.66
Romania	12.67	22.97	3.42
Slovenia	21.53	39.57	7.48

COUNTRY	TOTAL	MALES	FEMALES
	SUICIDAL DEATHS/100.000 OF THE POPULATION		
Slovakia	11.1	21.05	2.65
Finland	16.14	25.29	7.79
Sweden	12.39	18.07	7.16
United Kingdom	7.22	11.78	2.92
Liechtenstein	9.64	10.12	9.23
Norway	10.62	15.38	6.01
Switzerland	13.2	20.55	6.93
Serbia	17.28	28.6	7.96
Turkey	2.12	3.27	1.05

Figure 5: Trends in suicide rates in selected European countries (2000-2011)

(OECD, 2014)
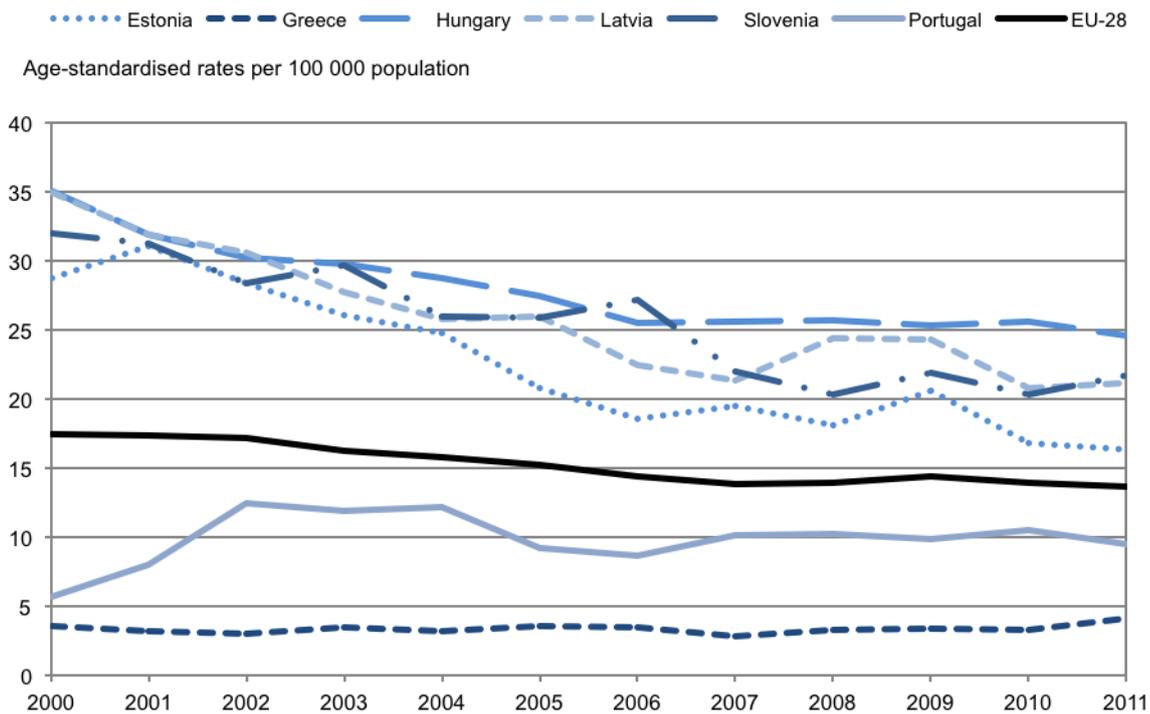
Figure 6: Changes in suicide rates between 1995 and 2010

(OECD, 2012)
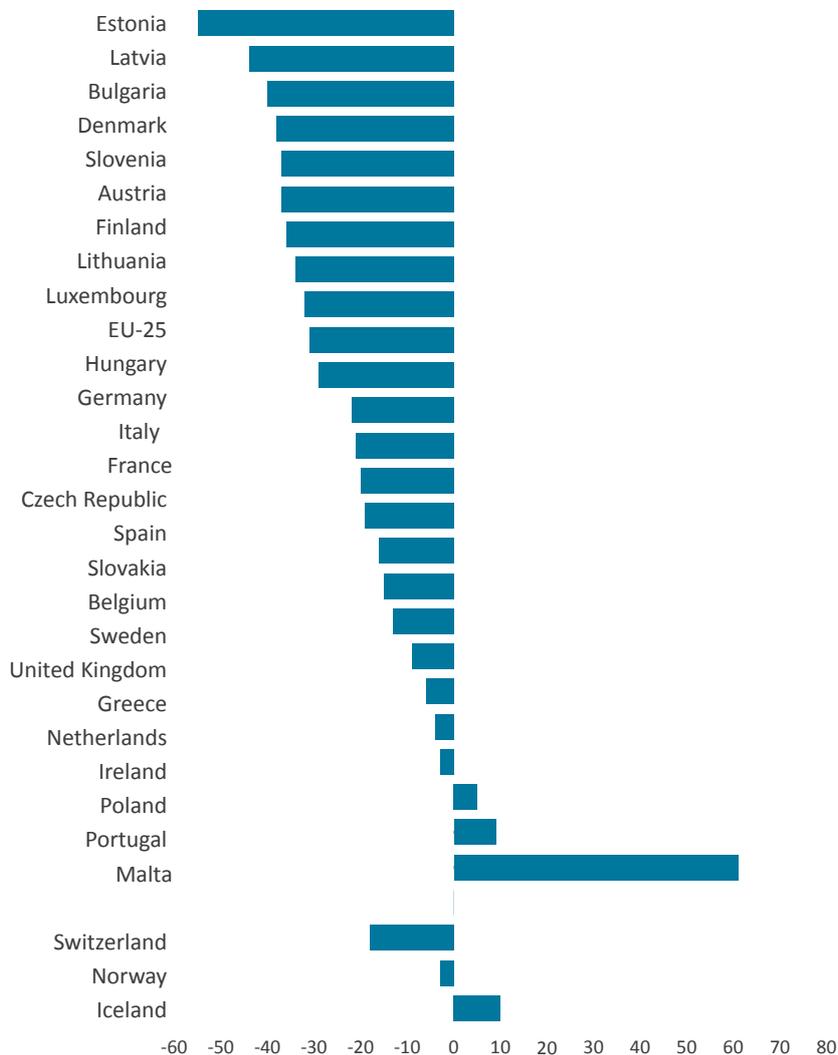
In sum, depression has become one of the most common mental health problems worldwide and poses a substantial burden to individuals, families, communities, and countries. As depression is associated with decreased productivity and increased absenteeism, it has a negative impact on the economy. Given the aforementioned burden of, action needs to be taken to combat depression. Depression does not only influence the health sector; but impacts the labour sector and employment (reduced productivity, absenteeism), as well as social benefits and social welfare, the economic sector (cost of care to the economy and proportion of GDP which depression accounts for), and the education sector also. Therefore tackling depression has become priority public health imperative in Europe.

Suicide and attempted suicide are also major public health problems worldwide. Although suicide rates have been declining in Europe overall, some European countries have experienced a recent increase in rates and within certain subgroups. Suicide remains a leading cause of death in young people. Suicide is not only a terrible loss of an individual, but also overwhelmingly distressing for the family and poses a health risk to the relatives/significant others affected by suicide. The prevention of suicide is vital necessity.

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1.2. Socio-demographic characteristics, high risk groups

> *Key messages*
>
> - *Major depression affects women almost twice as frequently as men*
>
> - *Men die three to four times more often by suicide and intentional self-harm than women do in all Member States*
>
> - *High risk groups for depression and suicide include those with severe somatic and other psychiatric illnesses, the socially disadvantaged, those suffering from recent loss, especially through suicide, persons in criminal and justice systems, and vulnerable groups like the unemployed, LGBTQ (Lesbian, Gay, Bisexual, Transgender, Queers), indigenous and immigrant groups*

Unipolar depression affects women almost twice as frequently as men. Socioeconomic as well as family-related factors moderate the relationship between gender and depression. Protective factors, such as marriage and cohabiting with a partner, as well as having a generally good socioeconomic position, are associated with a lower risk of depression in both genders. Socioeconomic factors have the strongest association with depression in both genders in most European countries. In general, being single or having a chronic illness increases the risk of depression (Van de Velde, Bracke, & Levecque, 2010). Additionally, depressive disorders are the most prevalent mental health problem among older people and estimated to affect circa 12% of adults in Europe aged 65 or above.

In the background document for the EU thematic conference: Preventing depression and suicide – Making it happen (Budapest, 2009), the main risk factors for suicide and depression were summarized as follows (*http://ec.europa.eu/health/mental_health/events/ev_20091210_en.htm, Wahlbeck, 2009*):

There are vulnerable groups more affected by depression and they have an increased risk to die by suicide. Depression and suicide are multicausal and they are linked to a range of determinants. High risk groups for suicide are those having mental disorders. The high risk groups also include those with severe somatic illness, the socially disadvantaged, those with recent loss, especially through suicide, and vulnerable groups like unemployed (Mäkinen and Wasserman 2009), LGBTQ (Hatzenbuehler et al. 2014), indigenous people (Wasserman et al. 2009), immigrants (Sharma and Bhugra 2009), and persons in criminal and justice systems (Kerkhof and Blaauw, 2009) . People with a history of suicide attempts in their anamnesis have an especially high risk of dying by suicide. Suicides are also linked to social isolation, substance abuse, family violence, and access to lethal means of suicide.

Men die three to four times more often by suicide than women in all Member States. However, women attempt suicide more often than men. A WHO study shows that young people are often at risk of suicide, and that suicide is the second leading cause of mortality in the 10-24 age groups and it is the principal cause of mortality among males aged 15-35 in the WHO European region. In addition, European data indicates that gender differences are marked in completed suicides by adolescents.

It has been shown that suicidal behaviour is associated with other risk behaviours among adolescents. Data from the Saving and Empowering Young Lives in Europe (SEYLE) project showed that pupils with

high levels of risk behaviours had the highest rates of suicidal ideation and attempts. Interestingly, an additional previously unrecognized group, with an "invisible risk", is not identified by adult observers. Despite having similar rates of psychiatric symptoms and suicidal behaviours as the other high risk group, it is not identified by adult observers because parents and teachers do not perceive students' sleep problems, excessive internet use and physical inactivity as particularly dangerous or alarming (Carli et al. 2013).

People having the following factors constitute vulnerable groups for suicidal behaviours.

MACRO-LEVEL SOCIO-ECONOMIC AND ENVIRONMENTAL RISK FACTORS

• poverty, financial difficulties

• poor education

• unemployment

• high debt

• social isolation

• socially exclusion and deprivation

LIVING AND WORKING CONDITIONS

• high workload

• precarious work

• high emotional demand

• school or work place bullying and violence

DEVELOPMENTAL RISK FACTORS

• prenatal maternal stress

• hostile, unstable, and unsupportive parent-child relationships

• corporal punishment, harsh parenting and child abuse

• physical, sexual and emotional abuse, and interparental conflict

• children of parents with depression

INDIVIDUAL RISK FACTORS

• stressors encountered early in life

• gender differences: depression and suicide attempts are more common among women, but suicides are more frequent among men

• sexual minorities

• chronic physical disease and functional limitations

• having a mental disorder, especially mood disorders and substance-related disorders

- previous suicide attempt in the anamnesis

- bereavement

AVAILABILITY OF SUICIDE MEANS

- Choice of suicide mean varies according to the country and even inside one country, and by age and gender.

- The use of different suicide methods depends on the availability of suicide means.

In sum, depression and suicide are characterized by gender and age differences, nevertheless socioeconomic factors shows the strongest association with depression in both genders in most European countries. Numerous high risk groups are identified for depression and suicide include those with severe somatic and other psychiatric illnesses, the socially disadvantaged, those suffering from recent loss, especially through suicide, persons in criminal and justice systems, and vulnerable groups like the unemployed, LGBTQ (Lesbian, Gay, Bisexual, Transgender, Queers), indigenous and immigrant groups. Socially disadvantaged position, isolation and social exclusion are important underlying factors of higher risk for both depression and suicide.

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1.3. The link between depression and highly prevalent chronic diseases

> **Key messages**
>
> - *Prevalence of chronic medical illnesses was found to be high in depressed people ranging from 64.9% to 71.0%*
>
> - *The relative risk for developing heart disease (leading cause of disability) in depressed individuals is approximately 1.6 times greater than among nondepressed persons*
>
> - *Unrecognized and untreated depression is a major risk factor of poor outcome and increased mortality in chronic diseases, while treatment of depression is associated with improved control of the chronic diseases*
>
> - *Despite of the high prevalence of depressed patients in health care settings, under-recognition is very common: it is estimated that around 50% of the cases remain undetected worldwide*
>
> - *Depression is associated with an approximately 50% increase in medical costs of chronic medical illness*
>
> - *Almost all EU countries approved or adapted their mental health policy in the last 10 years;*

Seven out of ten primary care visits concerns chronic illnesses (Veale, 2003). It is well-known, that depression is often comorbid with other chronic diseases (Chapman, Perry, & Strine, 2005a), and can worsen their associated health outcomes. The prevalence of chronic medical illnesses was found to be high in depressed people ranging from 64.9% to 71.0% (Wells, Rogers, Burnam, Greenfield, & Ware, 1991). In the Pan-European SEYLE study among adolescents, 85.8% saw a doctor in the previous 12 months, 2.8% described their state of health as poor/very poor, 2.8% reported physical disability and 15.0% reported chronic illness. Anxiety levels were significantly higher in adolescents who reported having physical disability ($p<0.001$, Cohen's d=.40), suffering from chronic illnesses ($p<0.001$, Cohen's d=.40), impairment associated with health conditions ($p<0.001$, Cohen's d=.61), or reported poor to very poor self-rated health ($p<0.001$, Cohen's d=1.11), compared to pupils who reported the opposite. Anxiety is closely associated with depressive disorders (Balázs et al. 2015).

Depressed patients present higher rates of comorbidity with chronic physical illnesses, and depression has a significant influence on the outcome of these comorbid illnesses such as cardiac diseases, diabetes, arthritis, hypertension, backache, obesity and cancer (Cassano and Fava, 2002; Wells et al., 1991). Furthermore there is evidence, that patients affected by chronic illnesses have a higher risk for depression compared to the general population (Cassano and Fava, 2002; Chapman et al., 2005a; Moussavi et al., 2007).

A possible explanation of this complex interrelationship was stated by Katon in 2003:

"Major depression may decrease the ability to habituate to the aversive symptoms of chronic medical illness, such as pain. The progressive decrements in function associated with many chronic medical illnesses may cause depression, and depression is associated with additive functional impairment (Katon, 2003)".

In the WHO World Health Survey 254 404 participants were studied from 60 countries from all over the world (Moussavi et al., 2007). The prevalence of depression, its comorbidity with chronic illnesses (angina, arthritis, asthma, diabetes) and its effect on the mean health score were investigated. As for the results the 1-year prevalence for ICD-10 depressive episode was 3.2%. On average, 9.3% - 23.2% of participants with at least one chronic disease had comorbid depression in addition to their existing

condition. The prevalence of depression in patients with chronic diseases was significantly higher than without chronic diseases. Respondents with depression had the lowest mean health score among all the chronic disease conditions irrespectively of the respondent's age, sex, country and other demographical variables. The lowest overall mean health score was for patients with two or more chronic conditions comorbid with depression.

IMPACT OF DEPRESSION ON COMORBID ILLNESSES

An increased risk of mortality was associated with coronary artery disease (Katon, 2003; Lespérance & Frasure-Smith, 2000; Penninx et al., 2001), cardiovascular disease, hypertension (Black & Markides, 1999) and cancer (Pirl & Roth, 1999) in depressed patients. A higher death rate was found among diabetic patients with high level of depressive symptoms (Black & Markides, 1999; de Groot, Anderson, Freedland, Clouse, & Lustman, 2001; Katon, 2003; Zhang et al., 2005). The adverse effect of major depression on health habits, such as smoking, diet, over-eating, and sedentary lifestyle, its maladaptive effect on adherence to medical regimens, as well as direct adverse physiologic effects may explain this association with increased morbidity and mortality (Katon, 2003). Among young people, high levels of depression were found to be equivalent in an invisible risk group (high media use, sedentary behaviours and reduced sleep) compared to a high risk group (high frequency of risk-behaviours) (Carli et al. 2014).

On the other hand major depression can be a life-threatening complication of several illnesses such as Addison's disease, Cushing's syndrome, hyperthyroidism, hypothyroidism and hyperprolactinemic amenorrhae (Fava, Sonino, & Morphy, 1987). Despite of the high prevalence of depressed patients in health care settings, underrecognation is very common: it is estimated that around 50% of the cases remain undetected worldwide (Lecrubier, 2001).

DIABETES

Depression is twice as common among patients with diabetes than among non-diabetic patients (Anderson, Freedland, Clouse, & Lustman, 2001). Low socioeconomic status may contribute to the development of diabetes among depressed people (Chapman, Perry, & Strine, 2005a). Depressive symptoms are associated with fasting insulin levels, physical inactivity, frequent overeating of sweets and high-fat foods as well as decreased ability among diabetic patients to adhere to a diabetic diet when away from home (Ahlgren, Shultz, Massey, Hicks, & Wysham, 2004; Golden et al., 2004). A significantly higher risk of diabetes-specific complications such as sexual dysfunction, retinopathy, nephropathy and neuropathy were associated with depression among Type 1 or 2 diabetic patients (de Groot et al., 2001). Treatment of depression was associated with improved glycaemic control (Lustman, Griffith, Freedland, Kissel, & Clouse, 1998).

CARDIOVASCULAR DISEASE

The relative risk for developing heart disease in depressed individuals is approximately 1.6 times greater than among nondepressed persons (Wulsin & Singal, 2003). Depression or depressive symptoms are also predictive of stroke: persons with significant depressive symptoms are approximately twice as likely to have a stroke within 10 years as those with few depressive symptoms (Ohira et al., 2001). Post-stroke depression has been associated with impairments in response to rehabilitation and with increased mortality (Gillen, Tennen, McKee, Gernert-Dott, & Affleck, 2001). Persons with a history of major depression are more than four times as likely to have a myocardial infarction (MI) than those with no history of depression (Pratt et al., 1996). There is a four to sixfold increase in mortality rate among post myocardial infarction patients with depression (Goodnick & Hernandez, 2000). Persons with depression following an MI are less likely to adhere to recommended lifestyle and behavioural changes, potentially increasing their risk for subsequent cardiac events (Ziegelstein et al., 2000).

THE COST OF COMORBID DEPRESSION

The cost of depression conditions in the European Union was estimated at Euro 118 billion in 2004, which corresponds to a cost of Euro 253 per inhabitant (Sobocki, Jönsson, Angst, & Rehnberg, 2006). Depression is associated with an approximately 50% increase in medical costs of chronic medical illness (Katon, 2003).

The sufficient diagnosis and treatment of depression have major public health significance. Their management should largely take place in primary care settings (Cassano & Fava, 2002), since the treatment of depression could greatly affect the impact of chronic disease. The presence of mental illness may be an important contributor to the aetiology of chronic disease. According to a study of the King's Fund (*http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/long-term-conditions-mental-health-cost-comorbidities-naylor-feb12.pdf*), the interaction of physical illness and comorbid mental health problems increase the health care costs by at least 45% for each person, which suggests that 12 -18% of all health care expenditure on long-term conditions are associated to mental health problems (Naylor et al., 2012). Thus, the promotion of mental health would likely result in reducing a considerable proportion of the burden of chronic diseases (Chapman, Perry, & Strine, 2005b).

In sum, depression is not solely the problem of mental health, but has also become a general health concern. It is very frequent, increases the mortality and morbidity of other disorders, while decreases the positive outcome of these. Therefore, it is a general duty of health care professionals in all areas of medicine to detect depression (as with detecting e.g. hypertension and high cholesterol), and help the clients receive appropriate treatment. This may also have the additional benefit of destigmatisation.

Depression is highly co-morbid with other chronic conditions (the most significant conditions are type 2 diabetes mellitus, cardiovascular disorders, chronic pulmonary diseases, chronic bone and joint disorders). Depression leads to a poorer prognosis of these disorders and due to poor compliance increases the overall treatment cost of these disorders. Therefore the management of depression is crucial in the aspects of better outcome and reduce treatment cost of these disorders

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1.4. Treatment gaps in depression and suicide

> **Key messages**
>
> - *Although effective treatments exist, it is estimated that around 56% of patients with major depression receive no treatment at all*
>
> - *The lack of appropriate diagnosis and treatment of depression can be one of the main cause of the high suicidal rates across Europe*
>
> - *Treatment barriers are: stigma of mental disorders and depression, limited accessibility to certain services for certain populations*

The European Study of the Epidemiology of Mental Disorders (*http://public-files.prbb.org/publicacions/3594-11817%20EpidemiolPsichSoc%20de%20Girolamo.pdf*) (ESEMeD) have found that the overall lifetime prevalence of major depression was 4.1%, with 48% of that number receiving no formal health care. In total, 3.1% of the adult population had an unmet need for mental healthcare (Alonso et al., 2007).

The lack of appropriate diagnosis and treatment of depression can be one of the main cause of the high suicidal rates across Europe. Although effective treatments exist, it is estimated that around 56% of patients with major depression receive no treatment at all. The reasons of high under-treatment rates are varying (Kohn, Saxena, Levav, & Saraceno, 2004):

- Failing to seek help because the problem is not acknowledged,

- Perceiving that treatment is not effective,

- Believing that the problem will go away by itself, and desiring to deal with the problem without outside help

- Lack of knowledge about mental disorders and stigma

- Issues of accessibility: Limited or lack of availability of services in many countries or for some populations

- Financial considerations

However not only stigma and limited access to care deepens the treatment gap in depression. There is a lot of unmet need concerning to both pharmacological and psychological treatment.

"NEGATIVE CASCADE" IN TREATMENT UTILISATION

The treatment utilisation of depression could be depicted with a „negative cascade" (Pence et al., 2012) mechanism: Significant number of depressive patients do not seek professional health, fewer are recognised as depressive, and even fewer receive appropriate treatment, and among them fewer are adherent to therapy for a longer term – at the end of the cascade, a relatively small number of patients have long-term benefits of the available evidence based treatments.

High numbers of patients do not seek treatment about their (depressive) symptoms, due to the belief that help is useless (hopelessness is an important symptom of depression). Other patients think that their emotional condition is a natural consequence of a negative life event (depression is often associated with negative life events and distress). Others that seek help in primary care often report only the non-psychological symptoms (fatigue, insomnia, weight loss etc.) and are reluctant to disclose their psychological distress (probably due to the fear of stigma). The partial disclosure of symptoms often lead to "quasi-therapy": The patients receive sleep pills for insomnia, vitamins for fatigue but miss appropriate treatment. (Serna et al., 2010, Boenish et al., 2012). The treatment with antidepressants alone does not guarantee the rapid relief of the symptoms; these medicines act relatively slowly, low dosage and the partial (or non) response for the first choice antidepressant are relatively common. All the mentioned could undermine the patients' (often weak) trust in remission. (Meijer et al., 2004, Olfson et al., 2006, Serna et al., 2010). Moreover, the adherence to therapy is more or less the same (or weaker) as in the case of other conditions which requiring longer term medication. Sometimes remission itself may weaken adherence (the patients thinks that the antidepressant is no longer needed). Often the treatment (both pharmacological and psychological) leads to partial remission and do not bring the expected level of relief.

In sum, it seems that the recent effective treatment modalities – although, considering the clinical symptoms, are supported by convincing evidences – also carries certain limitations which may influence quality of life and do not answer to numerous unmet needs of the patients.

UNMET NEEDS THAT MAY BE ASSOCIATED TO TREATMENT GAP IN DEPRESSION

Despite the crucial and yet irreplaceable role of antidepressants in the treatment of depression they often do not meet the needs of patients and their communities considering full recovery and more importantly, quality of life. There are a lot of unanswered demands concerning side effects that affect quality of life (weight gain, blunting, sexual dysfunctions, residual insomnia and cognitive symptoms). In the other hand, side effects would be much more tolerable if the available drugs had more convincing capabilities (e.g. faster action, less residual symptoms) to reduce the subjective complaints that distress patients the most.

Considering psychological treatment, the access to psychotherapy varies greatly from country to country. In some communities cultural stereotypes may undermine the use of psychotherapies, so that patients do not accept these even when other forms of treatment seems to have limited effects. Therefore the potential of evidence-based psychotherapy is still not being exploited in many European countries (Woelbert, 2015). The combination of medication and psychotherapy has an even narrower cross section.

Based on the previous researches WHO has laid out 10 recommendations to address treatment gaps (*http://www.who.int/whr2001/*) (Bebbington, 2001):

1. Mental health treatment should be accessible in primary care

2. Psychotropic drugs need to be readily available

3. Care should be shifted away from institutions and towards community facilities

4. The public should be educated about mental health

5. Families, communities and consumers should be involved in advocacy, policy-making and forming self-help groups

6. National mental health programmes should be established

7. The training of mental health professionals should be increased and improved

8. Links with other governmental and nongovernmental institutions should be increased

9. Mental health systems should be monitored using quality indicators

10. More support should be provided for research.

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1.5. The Economic and societal burden of depression and suicide in Europe

> **Key messages**
>
> - *Depressive disorder is the major cause of lost productivity in the European Union. Individuals with major depression report, on average, about 25% of lost work days, while sufferers of heart diseases or diabetes report 18% and 12%, respectively.*
>
> - *The cost of depression corresponds to 1% of the total economy of Europe (GDP)*
>
> - *A majority of costs (between 65-85%, estimated at €76 billion) arise indirectly from loss of productivity, increased morbidity, sickness absence, early retirement and from increased mortality as well*

Depressive disorder is the major cause of lost productivity in the European Union. Major depression leads to substantial impairment in quality of life and ability to take care of everyday responsibilities. Patients with major depression in Europe report more than seven times more work days lost than people without any mental disorder. Individuals with major depression report, on average, about 25% of lost work days, while sufferers of heart diseases or diabetes report 18% and 12%, respectively. (*http://ec.europa.eu/health/ph_determinants/life_style/mental/docs/depression_background_en.pdf*) (Wahlbeck, 2009).

In 2010 the cost of brain disorders (in billion €PPP) were estimated €798 with the highest proportion caused by mood disorders (including depression), €113.4 (Gustavsson et al 2011). In another paper of the same study group major depression alone caused costs of approximately €92 (Olesen et al., 2012). The cost of brain disorders distributed to 37% direct health care cost, 23% direct non-medical cost, and 40% indirect cost. The cost of depression distributed to approximately 26% direct health care cost, 15% direct non-medical cost and 59% indirect cost. These estimations highlights that mental disorders overall are much more costly than previously perceived and depression has large societal cost (Olesen et al., 2012).

One other recent estimation of the total cost of work related depression across the EU-27 Member States found that it amounts to even nearly €620 billion per year. Out of this amount, €270 would be born by employers as a result of absenteeism and presenteeism, and €240 billion by the economy due to lost output, followed by the healthcare systems due to treatment costs (€60 billion), and the social welfare systems due to disability benefit payments (€40 billion). Depression should therefore be treated as indicative of the large size of the problem, more than as a "mere" fact (*http://ec.europa.eu/health/mental_health/eu_compass/reports_studies/index_en.htm*) (Matrix Insight, 2012).

On the other hand suicide has an economic impact as well, which arises from costs such as attributable to police, funeral services, healthcare use, and loss of productivity as well as less tangible costs as those arising from pain and grief (McDaid et al., 2010). On average, each completed suicide accrues a lifetime cost of approximately £ 2million. McDaid et al. (2010) claimed that suicide prevention interventions are highly cost-effective, even for a modest 1% reduction in suicide rate. Multi-sectoral suicide prevention programmes which target restriction in access to means of suicide, prevention of depression, good recognition and treatment of mental disorders, as well as support for those at risk may offer the best results. Prevention should be implemented as early in a lifespan as possible, as scientific evidence shows that depression is highly prevalent in young people (Balázs et al. 2013). Both depression and suicidal behaviours can be prevented by universal school-based programmes (SEYLE Report to EU 2012; Wasserman et al. 2015).

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2. SOCIAL DETERMINANTS, ECONOMIC CRISE AND DEPRESSION: SUICIDE AND HARMFUL ALCOHOL CONSUMPTION IN FOCUS

Key messages

- *Taking measures against economic exclusion, promoting the social participation of individuals with mental health problems, and supporting protective social networks may be beneficial in tackling the detrimental effects of economic crisis*

- *Many studies suggest that unemployed males represent one of the most vulnerable groups effected by economic crisis*

- *Policies and measures against the consequences of financial crisis on MH should take into consideration the gender inequalities in social determinants of health*

- *The health system alone cannot alleviate the consequences of the economic downturn, all sectors of society should be involved in the promotion of mental health*

- *Awareness of depression, harmful alcohol consumption, and risks of suicide within all sectors should be high priorities during the economic crisis*

- *Accessible and responsive social services support people at risk and can prevent or mitigate mental health and social consequences of financial crises*

- *Financial crises can signify an opportunity to reform mental health and social care, promoting a healthy lifestyle*

- *Policy makers should consider investing more in health and social protection measures during economic crises on the EU and Member State level also*

Good mental health, as an integral constituent of human health and well-being, has several social determinants, including the social, economic, and physical environment of the individual. The gravity and frequency of risk factors pertaining to many common mental disorders are markedly correlated with social inequalities (Social determinants of mental health; WHO 2014; *http://apps.who.int/iris/ bitstream/10665/112828/1/9789241506809_eng.pdf?ua=1*). Similarly, depression and suicide are no exception to the shaping mechanisms of social determinants. In order to endorse health equity and to spur collaboration among policy makers, researchers and civil society, the WHO established The Commission on Social Determinants of Health (CSDH, 2008) and called for closing the health gap within one generation. Three central recommendations were put forward:

1. Improve the standard of living, particularly the well-being of girls and women

2. Tackle the unequal distribution of power, money, and resources, with the purpose of addressing health disproportions and inequitable living conditions

3. Measure, analyse and understand relating problems and assess the impact of actions

(European profile of prevention and promotion of mental health; EuroPoPP-MH; 2013, pp. 13-14)

2.1. Mental health and economic crisis

Social determinants of physical and mental health gain an even greater influencing momentum during times of economic crisis. „Keeping equity in health on the intersectoral agenda is particularly important in times of economic downturn and recession, when the effects on the social determinants of health and risk of illness increases. For example, mental health problems such as depression and anxiety associated with job losses and the fear of unemployment increase, relationship conflicts because of money problems increase and unemployment also triggers increased problematic drinking" (WHO, 2011, 41. p. *http://www.euro.who.int/__data/assets/pdf_file/0010/148375/id5E_2ndRepSocialDet-jh.pdf*).

Depression and suicide rates are commonly used as health indicators or prognosis factors for somatic diseases (e.g. as an indicator for a population's coronary disease percentage; Nicholson et al. 2006). Since the last global financial downturn in 2008, more attention has been directed toward collecting data on population-scale mental health, and research conducted in this area has enhanced our understanding of the effects economic crises have on mental health. To shed light on the particulars, the following will elaborate recent publications on depression and suicide, which are vital for policy-level decisions within the EU and the individual Member States as well.

People suffering from mental health problems comprise a group that may be acutely effected by economic recession since 2008, the recent Global fiancial downturn, there has been more attettion given for the data collection on population mental health, as well as researchers called attention the high importance of the consequance of the economic crises., as they are at higher risk of losing their jobs, and congruently, a more competitive labour market may exacerbate chances of finding vacancies. A comprehensive study conducted in 27 European countries (Evans-Lacko et al., 2013) assessed unemployment rates among individuals with mental health problems before and during the current economic recession. Subsequent to the onset of the most recent downturn, there was a significant increase concerning the gap in unemployment rates between individuals with mental health problems, and those without such difficulties (odds ratio: 1.12, 95% confidence interval: 1.03, 1.34, Evans-Lacko et al., 2013). This disproportion proved to be even greater among males and individuals with a low education level. The study also revealed that there is a correlation between attitudes concerning people with mental health problems and employment rates. According to the findings, if an individual resided in a community with higher levels of stigmatising attitudes (e.g. people with mental illnesses are dangerous), then they were more vulnerable to unemployment during an economic crisis (2010), than during relative economic stability (2006). Conversely, the concept that people with mental health problems have themselves to blame showed a decreased likelihood of unemployment for both afflicted and non-afflicted individuals. Ultimately, the authors conclude that economic hardship may intensify the social exclusion of people suffering from ill mental health, particularly males and individuals with a lower level of education. At times of economic crises, interventions directed at alleviating economic exclusion and promoting the social participation of those afflicted with mental health problems are even more crucial. Furthermore, these measures should target the support of the most vulnerable groups within the population (Evans-Lacko et al., 2013).

Malard et al. employed nationally representative prospective data (from the Santé et Itinéraire Professionnel survey) and also examined a sample of 5600 French workers through a structured diagnostic interview (The Mini International Neuropsychiatric Interview) for major depressive episode (MDE) and generalized anxiety disorder (GAD). The data was analysed according to age, origin, occupation, public/ private sector, self-employed/employee status and work contract. After assessing the results, the authors concluded that no differential changes occurred in mental disorders among the French working population between 2006 and 2010, save one: the prevalence of GAD increased among women employed in the public sector; however, this was not observed in the private sector (Malard, Chastang, Niedhammer, 2015).

Research conducted in the Spanish primary care setting investigated the connection between the recession and the frequency of mood, anxiety, somatoform, alcohol-related and eating disorders.

Primary care physicians selected randomised samples of patients attending primary care centres, and administered the Primary Care Evaluation of Mental Disorders (PRIME-MD), a tool for mental disorder diagnosis, to a total of 7940 patients in 2006–2007 and 5876 in 2010–2011. When comparing the pre-crisis period with the 2010 data, the results indicate a substantial increase in the number of patients with mood (19.4% in major depression), anxiety (8.4% in generalized anxiety disorder), somatoform (7.3%) and alcohol-related (4.6% in alcohol dependence) disorders, all significant at $P < 0.001$, except for eating disorders (0.15%, $P = 0.172$). Furthermore, apart from the noted risks of unemployment [odds ratio (OR) = 1.72, $P < 0.001$], the authors observed a highly elevated risk of major depression associated with mortgage repayment difficulties (OR = 2.12, $P < 0.001$) and evictions (OR = 2.95, $P < 0.001$). Among primary care attendees in Spain, recession proved to sizeably increase the frequency of mental health disorders and alcohol abuse, especially among families with unemployment and mortgage payment issues (Gili et al., 2012).

Modrek, Hamad, and Cullen analysed mental health service and medication utilisation trends among a panel of workers in the 25 largest plants (located in 15 states) of a US manufacturing firm, spanning the years between 2007 and 2012. This occupational cohort thus consisted of workers who remained continuously employed and insured, yet the authors found changes in mental health care utilisation during the Great Recession. Concerning all workers after 2009, mental health inpatient and outpatient visits, as well as the yearly supply of mental health–related medications increased. Medication usage increased more significantly among workers at plants with more layoffs. The authors concluded that the detrimental effects of the recession on mental health extend to employed individuals, despite the fact that this group is considered to have a lower risk of psychological distress (Modrek, Hamad, Cullen, 2015).

2.2. Consumption and abuse of psychoactives during the economic crisis

In another study conducted in Spain, researchers analysed changes in the use of alcohol, cannabis and hypnotics/sedatives vis-à-vis the time periods before and during the economic crisis. Their research extended to employed and unemployed individuals as well. Employing cross-sectional data from four editions of the Spanish Household Survey on Alcohol and Drugs, economically active individuals between the ages of 16 and 64 were selected (total sample=62,440) and two time periods were defined, that of pre-crisis (P1=2005-2007) and crisis (P2=2009-2011). During the period of economic recession, heavy drinking decreased, while binge drinking increased, and sporadic cannabis use intensified among older, unemployed men and women alike. There was an upsurge in the heavy use of hypnotics/sedatives among employed men, whereas among older women this figure increased regardless of employment status (Colell et al., 2015).

Concerning alcohol consumption, a similar pattern was found in a nationally representative sample of non-institutionalised white persons, aged 20–60, in seven waves of the Health Survey for England, 2004–2010 (n = 36,525). The authors aimed to examine trends in alcohol consumption and its frequency before, during and after the recession and its possible correlation to unemployment, correcting for possible changes in sample composition, as well as socio-demographic confounding variables. The core analysis contrasted 2006/7 with 2008/9, subsequent to the UK recession commencing in early 2008. There was a significant decrease (27.1% in 2006 to 23.9% in 2009, $P < 0.001$) in frequent drinking (defined as drinking four or more days in the past week) during England's downturn. This measurement of decline included the number of units of alcohol consumed on the heaviest drinking day ($P < 0.01$) and the number of days that individuals reported drinking over the past seven days ($P < 0.01$). However, there was a significantly elevated risk of binge drinking in 2009 and 2010 (odds ratio = 1.64, 95% confidence interval: 1.22–2.19, $P = 0.001$) among drinkers who were unemployed at the time. This figure was not observed throughout 2004–2008 (1.03, 0.76–1.41; test for effect heterogeneity: $P = 0.036$).

Thus, concerning the overall population, England's recession generated a decrease in hazardous drinking, but instigated an upsurge in binge drinking among the high-risk group of unemployed drinkers (Harhay et al., 2013).

In a recent systematic review involving studies published between January 1st, 1990 and May 1st, 2014, Moniek et al. explored medical, psychological, social, and economic databases searching for peer-reviewed, qualitative or quantitative empirical evidence that would help understand and predict the potential impact of economic crisis on alcohol consumption and alcohol-related health problems. From the 35 papers the authors reviewed, they extracted evidence concerning mechanisms, determinants, and outcomes, as well as investigated the country-level and individual contexts. They found 16 studies that proposed two chief behavioural mechanisms underpinning the interaction between economic crisis and alcohol consumption/related health problems. The first mechanism surmises that psychological distress, triggered by unemployment and income reductions, can aggravate drinking problems. Conversely, the second mechanism speculates that, due to tighter budget constraints, less money is spent on alcoholic beverages. The psychological distress mechanism was observed in several countries, mainly among men. The tighter budget constraints mechanism seems to prove true among all population subgroups throughout the examined countries. Thus, the systematic review concludes that the net impact of economic crises will increase alcohol consumption among men (as opposed to women), and this discrepancy in net impact may also contribute to growing gender-related health inequalities during times of crisis (Moniek et al., 2015).

2.3. Gender differences and the response to economic recession

Several studies exemplify the importance of gender differences in mental health outcomes before, during and after the Great Recession. In the USA, a recent study concluded that gender differences in mental health in connection with the economic recession illustrate the significance of policymakers taking these factors into consideration when planning economic and social policies in such circumstances. Future research, argue the authors, should focus on the causes underlying the decreased depression diagnoses among both genders, and "whether they signify decreased mental healthcare utilization or increased social support and more time for exercise and leisure activities" (Dagher, Chen, Thomas, 2015).

UK trends in population mental health before and after the 2008 recession also displayed gender differences. In a 2012 study, Katikireddi, Niedzwiedz, and Popham analysed representative samples of the working age (25–64 years) general population participating in the Health Survey for England between 1991 and 2010. The findings revealed that population mental health in men declined within 2 years of the recession's commencement. The figures, and their gender-related patterning, could not be explained by differences in employment status. The authors concluded that further analysis should be conducted in order to understand recessionary impacts on health inequalities with respect to gender (Katikireddi, Niedzwiedz, Popham, 2012).

An Irish study contrasted on the one hand a cohort of patients with first-episode depression related to the Irish economic recession, and on the other, a cohort of all other first-episode depressives who had been admitted during the same time period (2009–2010). Despite the fact that the study its limitations (e.g. a lack of follow-up interviews), they found a subgroup of patients with severe depression linked to economic recession, who also had a high suicide risk, though with a very favourable outcome (Thekiso et al., 2013).

2.4. Economic crisis and suicide

With respect to the prevalence of suicide, it is still unclear whether changes in suicide rates can be directly linked to economic crises or not. The Lopez-Ibor Foundation launched an initiative to study the possible impact of the economic crisis on European suicide rates. The initiative encompassed data from 29 European countries concerning the number of deaths by suicide among men and women, the unemployment rate, the gross domestic product (GDP) per capita, as well as the annual economic growth rate and inflation. The research showed a strong correlation between male suicide rates and all economic indices (except GDP per capita), but among women, suicide was only correlated with unemployment. However, it is important to note that the increase in suicide rates began several months before the economic crisis emerged. Overall, although this study verifies a general relationship between the economic environment and suicide rates, "it does not support there being a clear causal relationship between the current economic crisis and an increase in the suicide rate" (Fountoulakis, et al. 2014).

Other authors are less hesitant to draw a parallel between suicide rates and economic crises. Reeves, McKee, and Stuckler state that:

"there has been a substantial rise in 'economic suicides' in the Great Recessions afflicting Europe and North America,"

and estimate that:

"the Great Recession is associated with at least 10,000 additional economic suicides between 2008 and 2010" (Reeves, McKee, Stuckler, 2014).

The authors raise the question whether these suicide rises are inevitable or not, proposing that cross-national variations in suicides suggest that they can be avoidable. They remark that job loss, debt and foreclosure increase risks of suicidal thinking, while a range of interventions, from upstream return-to-work programmes through antidepressant prescriptions, can mitigate suicide risk during economic recession (Reeves, McKee, Stuckler, 2014).

Other studies, such as Reeves et al. 2014, support that during the 2007–11 recessions in Europe, suicide increases were concentrated only among men, although temporal factors and substantial differences across countries remain unrevealed. Contributing circumstances like increases in unaffordable housing, household indebtedness and job loss could account for these population differences, along with the potential mitigating effects of alternative forms of social protection. Reeves et al. employed multivariate statistical models to evaluate alterations in suicide rates in 20 EU countries from 1981–2011. The models were adjusted for pre-existing time trends and country-fixed effects, while interaction terms were utilised to evaluate modifying effects. They found that changes in levels of unaffordable housing had no effect on suicide rates (P = 0.32); yet in contrast, male suicide increases were significantly associated with each percentage point rise in male unemployment, by 0.94% (95% CI: 0.51–1.36%), and indebtedness, by 0.54% (95% CI: 0.02–1.06%). Spending on active labour market programmes (ALMP) (-0.26%, 95% CI: -0.08 to -0.45%) and high levels of social capital (-0.048%, 95% CI: -0.0096 to -0.087) regulated the unemployment–suicide correlation. They found no connection among the amount of anti-depressant prescriptions (P = 0.51), monetary benefits to unemployed persons (P = 0.77) or total social protection spending per capita (P = 0.37). The authors estimated that active labour market programmes and social capital prevented -540 and -210 male suicides, respectively. Job loss was pinpointed as a critical determinant of variations in male suicide risks at the time of Europe's recessions. The results indicate that greater spending on active labour market programmes and levels of social capital appear to alleviate suicide risks (Reeves et al. 2014).

In Greece, the impact of economic crisis on suicide rates is still debated (Rachiotis et al, 2015). The overall mean suicide rate rose by 35% between 2010 and 2012, from 3.37 to 4.56/100 000 population. The suicide mortality rate increased in both genders; for men from 5.75 (2003–2010) to 7.43/100 000 (2011–2012; p<0.01), for women less markedly, from 1.17 to 1.55 (p=0.03). This increase prevailed

among both sexes even when differentiated by age group (20-59 and >60 years). Similarly to Reeves et al., Rachiotis et al. found that each additional percentage point of unemployment correlated with a 0.19/ 100 000 population rise in suicides (95% CI 0.11 to 0.26) among working age men. By employing regression models and aggregate data on the population level, the authors showed that this clear increase in suicides coincided with austerity measures. The concern was also verified by Madianos et al., 2014.

It should be taken into account that, compared to other EU Member States, the suicide rates reported in Greece are very low. In 2012, the average suicide rate in the EU28 was 11.72 per 100,000 inhabitants, with highest suicide rates in Lithuania (30.8), Hungary (23.7) and Latvia (21.9) - and lowest suicide rates in Cyprus (4.17), Greece (4.52) and Malta (5.96).

A more recent study of Antonakakis and Collins (2015) investigated the effects of fiscal austerity on suicide across five Eurozone countries (Greece, Ireland, Italy, Portugal and Spain) and found a medium and long term relationship between austerity and male suicide in the 65-89 age group. The authors noted that improved labour market institutions and social protection measures hep to mitigate the negative effects of austerity on suicide mortality.

2.5. Policy responses to economic crisis in mental health

The WHO Regional Office for Europe, the Organisation for Economic Co-operation and Development (OECD), and professional associations also responded to the financial crises in Europe (WHO Regional Office for Europe, 2011, OECD, 2014). For example, the European Psychiatric Association (EPA) Guidance paper concerning the consequences of economic crisis on mental health is currently under preparation, intended to be published later on in 2015. The authors, who are a part of a working group of the EPA Council of National Psychiatric Associations, representing more than 80,000 psychiatrists in Europe, consider the increase of depression and suicide rates as one of the most striking facts of the Great Recession, particularly affecting countries with impaired social protection programmes. (Martin-Carrasco, 2013)

A recent EU policy level document suggested to

"use the context of the economic crisis and of the fiscal austerity policies, which many Member States have engaged in, as an opportunity for introducing innovative approaches, which can help to improve the quality and cost-efficiency of mental health systems" (Lithuanian Presidency Conference, Conclusions, 2013).

A background document, which was launched for that event, also gave a comprehensive overview about which measures should be potentially invested in the mental health service systems for tackling the effects of financial crisis on mental health in EU Member States (EuroPoPP-MH, 2013).

Recent reviews suggest that scientific evidence and suggested responses to prevent and mitigate of the impact of economic downturn have many common denominators. As chronic stress situations, economic crises are liable to have psychological and psychopathological consequences. According to Christodoulou and Christodoulou, they generate adaptive responses (normal sadness) and dysfunctional responses (chiefly depression and suicidal potential). The authors stress that managing the psychological effects of financial crises is a complex enterprise, which may necessitate political intervention, and add that Greece has been adversely affected in terms of the general physical and mental health of the population (Christodoulou and Christodoulou, 2013).

Shedding light on and understanding examples conveyed in studies is particularly important because they may serve as a foundation upon which predictions concerning other countries can be made ("contagion" of mental health effects of crisis), especially regarding countries with similar cultural and social characteristics (Christodoulou and Christodoulou, 2013).

Strong evidence suggests that there is a dire need for establishing social protection during times of economic crisis (De Vogli et al, 2013). Wahlbeck and McDade also confirm that financial crises produce adverse mental health effects, which may increase suicide and alcohol-related death rates. Yet simultaneously, they emphasize that nations baring more stable social safety nets, reduce the negative impacts of economic downturn on mental health. Thus, various policy measures may offset the effects of recession, and the authors emphasize that good mental health cannot be achieved by the health sector alone. Wahlbeck and McDaid continue by stating that "The determinants of mental health often lie outside of the remits of the health system, and all sectors of society have to be involved in the promotion of mental health. Accessible and responsive primary care services support people at risk and can prevent mental health consequences." The authors continue their recommendations by asserting that austerity measures involving mental health services need to be directed toward the modernisation of mental health care provision. One way to counteract the detrimental effects of economic crisis, according to the study, is establishing social welfare supports (e.g. family support programmes) and active labour market programmes concentrating on aiding people in retaining or re-gaining jobs, as well as in managing debt (Wahlbeck, McDaid, 2012).

In agreement with Van Hal's conclusions, the main reactions of most policy makers to the economic crisis are (severe) austerity measures (Van Hal, 2015). Yet these measures risk to have a detrimental effect on the mental health of the population: exactly when people are in dire need of mental help, these cost-cutting measures in the health care sector bring about a considerable drop in the level of services pertaining to the prevention, early detection, and cure of mental health problems. Van Hal suggests that

"Policy makers should support moderating mechanisms such as financial and psychological coping and acculturation and the role of primary health care workers in the early detection of suicidal thoughts, suicide attempts, and suicide in times of economic recession."

Several additional studies have shown that countries with strong social safety nets ensure the mental health of their population during times of economic crisis. Therefore, concludes Van Hal, instead of cutting back on health care and social welfare measures, policymakers should invest more in social protection measures during economic crises (Van Hal, 2015).

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3. INVESTMENT IN INTERNATIONAL ACTIONS TO ADDRESS DEPRESSION AND PREVENT SUICIDE

> ***Key messages***
>
> • *In the EU in recent years there has been some increase in recognizing the importance of tackling depression and preventing suicide*
>
> • *The economic impacts of depression and suicide have detrimental effects for the performance of the economies of member states and the EU as a whole*
>
> • *Some significant developments in specific member states were achieved, which potentially might be replicated elsewhere in Europe*

3.1. Background and context

In the EU in recent years there has been some increase in recognizing the importance of tackling depression and preventing suicide as important (and potentially avoidable) public health issues. It has been not only because of public health importance of these issues, but also, as we seen earlier in. The adverse economic impacts of depression and suicide have detrimental impacts for the performance of the economies of member states and the EU as a whole this report, there is consensus that it is also a substantial economic issue; they can adversely affect European competitiveness if poor mental health leads to a reduction in the productivity of the European workforce.

The brief chapter provides an overview of the some investments in policy developments and initiatives from institutions such as the European Commission and other EU institutions and international bodies that have taken place in recent years. Where possible it considers the potential impact that they have had. It also notes some significant developments in specific member states which potentially might be replicated elsewhere in Europe.

However, this chapter is not meant to be comprehensive but to provide a snapshot of activities and the broad direction of policy travel in the EU. Later sections in this report look at the effectiveness of many significant interventions and initiatives at member state level and also at experience and policy developments in the participating member state countries for this work-package of the Joint Action.

3.2. Selected EU level policy developments

Many of the policy initiatives related to actions against depression and suicide have been embedded in broader European policy initiatives relating to mental health. Although some of these actions, date back to the turn of the millennium, such as for instance through actions for mental health promotion and tackling stigma taken under past Finnish and Greek presidencies of the European Council respectively, this analysis of policy initiatives takes as its starting point the 2005 Green Paper from the European Commission on 'Improving the mental health of the population: Towards a strategy on mental health for the European Union." Subsequently supported by an EU Parliamentary resolution, and launched almost concurrently at the time of the WHO Regional Office for Europe's Declaration and Action Plan for mental health the Green Paper certainly acted as a catalyst for further actions around mental health and revisions to some national strategy documents. The Green paper put quite a lot of emphasis on actions to promote mental health and prevent depression; it also highlighted the importance of suicide prevention, citing in particular the work of the EU supported European Alliance Against Depression (discussed further in the review chapter of this report).

Following the positive reception of the Green Paper in the consultation process, the European Commission launched the "European Pact for Mental Health and Wellbeing" at a high-level conference in Brussels in June 2008. The Pact was supported by extensive preparatory work among European mental health experts, resulting in the development of five consensus conferences and expert papers, including one on depression and suicide prevention. This consensus paper noted that the promotion of good mental health, preventive action, early recognition and adequate treatment were key measures in reducing depression and suicide. It argued that effective actions listed were likely to be multi-sectoral, for instance when looking at suicide prevention working with business and regulatory authorities on restriction in access to alcohol and in curbing access to products (such as pharmaceuticals and toxins). This would be in addition to measures to help train the health (and other stakeholders) to help in the recognition of depression and suicidal behaviour. A subsequent high level conference in Budapest in 2009 noted that:

"preparation and implementation of national and/or sub-national strategies and action plans for mental health, with prevention of depression and suicide as key components and bringing together key stakeholders, is needed to allow horizontal actions in all relevant sectors and that "each Member State and region should have a strategic mental health plan, encompassing prevention of depression and suicide".

An EU Compass for Action on Mental Health and Wellbeing, an online portal, was also set up to provide a platform for sharing information on mental health, including activities funded by the Commission.

While it is not possible to measure the success of these European policy initiatives in terms of impacts on mental health or suicide, one indicator of success in raising awareness and interest in the field of mental health has been the participation of nearly all Member States in the joint action between member states and the Commission for mental health and wellbeing launched in 2013. In addition, one can also point to high level EC events such as the 2013 Lithuanian Presidency Conference "Mental Health: Challenges and Possibilities" held to further promote implementation of the European Pact for Mental Health and Well-Being, and in particular to encourage multi-sectoral collaboration to achieve this.

3.3. EU level investments to tackle depression and risk of suicide across Europe

Ideally it would be possible to identify the level of funding that is invested into tackling depression and suicidal behaviour at both national and international levels. In practice however, it is only possible to get a very partial picture of funding in Europe, identifying some specific examples of initiatives, including research funding. The most well funded mental health systems in Europe, such as in Germany and England, allocate around 10% of their health system budgets to mental health, but in some EU countries figures suggest spending is well below 5% of total public sector health expenditure, with spending in Bulgaria, the Czech Republic and Romania being around 3% (Dlouhy 2014). There is great variety in the state of mental health services around Europe, which in turn will impact heavily on the level and nature of investment in actions to tackle depression and suicide. While depression may be a common mental disorder in countries where spending on mental health is particularly low, this is likely to be concentrated in institutional and other care for people with the severest mental disorders, such as psychosis, with little funding left for other mental health needs. Health promotion and protection budgets may also be sources of funding for measures to promote better mental wellbeing and therefore reduce the chances of depression; they also can be sources of funding for some elements of suicide prevention strategies. Again the level of funding for promotion and protection budgets varies considerably, but is rarely more than 3% of the overall health budget (OECD Health Statistics, *http://www.oecd.org/els/health-systems/health-data.htm*).

Improving surveillance and intelligence systems in respect of depression and suicide is another area for investment. Recent developments at member state level to improve this capability include the French national observatory on suicide set up in 2013. This body was specifically created to address the lack

of intelligence and surveillance information on the topic, so as to better coordinate actions. One of the first areas of analysis for the observatory was to look at the relationship between the recent economic downturn and suicide rates in the country.

It should also be noted that investments in actions to address depression and prevent suicide will also take place outside of the health care sector, for instance through actions in workplaces, schools and the provision of good quality housing. In the case of suicide prevention in particular, some of the most significant impacts on suicide rates have arisen as unintended positive additional outcomes of various pieces of EU consumer, environmental and traffic safety regulation and legislation. This included the mandatory installation of catalytic converters in new cars from the early 1990s as well car safety measures including front seat airbags.

Although workplace health is the subject of another workpackage, it is also worth noting investment in activities by major employer and social partner organizations across Europe on actions to promote better mental health at work. Alleviating stress and depression is at the very heart of these actions. Some businesses have also focused on the issue of suicide, triggered in part by unusual levels of suicidal activity in some workplaces. In the case of the depression the Framework Agreement between the different social partners on work-related stress is one example of actions that have been supported and facilitated through the European Commission and the European Agency for Safety and Health at Work.

3.4. European research funding

The European Commission has through various funding streams provided significant funding to support actions on mental health, including those specifically to tackle depression and suicide across Member States. Within the 7th Research Framework Programme, it was recently estimated that about 6% of funding went to mental health related projects1. This included some major initiatives in the field of suicide prevention. Table X provides examples of some of the different relevant recent projects that have been supported by the European Commission. One report on FP7 funded projects from 2007 to 2012 reported €9 million were invested in suicide prevention initiatives, including two discussed later in this report – OSPI – Optimising Suicide Prevention Interventions and the Saving and Empowering Young Lives in Europe (SEYLE) project. Funding has also been provided for studies to help identify the prevalence of depression and anxiety disorders in selected European countries, as well as the relationship with the use of mental health services through the ESEMED initiative, undertaken to inform the World Mental Health Survey. More recently EU funding has been made available for research initiatives to harness the power of new digital and other media to tackle depression and suicidality. The OECD has also produced several recent reports on the state of mental health in Europe, focused on both health and other issues such as participation in employment.

3.5. Example: support for telephone helplines

One example where the European Commission has helped to play a role is in reserving short numbers with a single format - 116 + 3 digits - for free of charge telephone helplines across Europe. These include a phone number 116 123 that is specifically for people experiencing loneliness, in a psychological crisis, or thinking about completing suicide. This phone number currently operates in 13 EU Member States (*https://ec.europa.eu/digital-agenda/en/116-your-country-0*) – funding to operate the services is determined at Member State level. In some countries services receive core funding from governmental bodies, but some services rely more heavily on charitable donations to continue to operate. In some instances telephone companies may also waive phone line charges. There is also a child helpline 116 111 operating in 23 member states; child abuse and the risk of child abuse is another risk factor for poor mental health across the lifecourse.

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4. BEST PRACTICES AGAINST DEPRESSION AND SUICIDE – A COMPREHENSIVE REVIEW OF EUROPEAN ACTIVITIES

The aim of this chapter is a state of the art review of evidence-based good practices in prevention of depression, suicide. Reviewing and showcasing these interventions, tools, and programmes could serve as a model for other countries.

The first research action involved conducting a comprehensive literature review in order to assess the state of the art of prevention efforts for depression and suicide, and current efforts in mainstreaming e-mental health interventions at the European level. The reviews are not intended to be exhaustive; rather, they provide an overview of available programmes and interventions (and associated challenges) throughout Europe.

4.1. Search strategy

A multi-phase strategy was employed for the search strategy. First, based on the review question, a number of key scoping papers were used to extract initial keywords to use in the scientific databases. Then these search terms, in combination with other search terms deemed relevant for the review question by the research team were used to yield references in the following databases in May and June 2014: Pubmed and PsycINFO. In addition to the database search, school-based suicide prevention programs were identified using PsycINFO and Google Scholar. References were excluded if they were not focused on Europe. In addition to primary research articles and review articles, book chapters and textbooks on suicide prevention were also included.

According to the systematic review of Mann et al. (2005), the following key areas of suicide prevention and treatment were identified:

I. Prevention

A Education and awareness programs

Primary care physicians

General public

Community or organizational gatekeepers

B Restriction of Access to Lethal Means

C Screening

D Media Reporting Guidelines for Suicide

II. Treatment

E Pharmacotherapy

F Psychotherapy

G Follow-up for Suicide Attempts

A recent review in preparation (Salzman et al.,) suggests two additional key areas:

H Community, Family and Group Interventions

I Telephone and Internet Services

In our review we aim to give a detailed overview about the evidence-based suicide prevention programs conducted in Europe in the last decades.

4.2. Training programs provided to health care professionals in Europe on depression and suicide

> **Key messages**
>
> - *Training programs for health care professionals decrease the treatment gap in depression and decrease the number of suicides. However, short-term programs have no long-term effects, continuous education is needed*
>
> - *The majority, but not all of the trainings have proven to be effective. Further research is needed for clarifying the most effective elements of the educational programs*

TRAINING PROGRAMS FOR GENERAL PRACTICIONERS

The Gotland study (Sweden)

The Gotland study in Sweden was a pioneering intervention; it was clinically based, public-health oriented suicide-preventive intervention initiated in 1982 by the Swedish Committee for the Prevention and Treatment of Depression (PTD). An intense (2x1.5 day) postgraduate training program was given to all the general practitioners working on the Swedish island of Gotland. Results from the study provided the first evidence of the positive effect of early recognition and treatment of depression, on suicide prevention. As a result of these findings, the rate of prescribed antidepressants increased markedly (thus clients with depression were treated with pharmacotherapy in increasing numbers) and suicide rates declined by 60%, and the rate of suicides linked to depression declined significantly in females (from 42% to 16%, p<0.01, Rutz et al.et al., 1989; Rutz et al., 1997; Rihmer, Rutz & Pihlgren, 1995). Alcohol use was not addressed in the program, which might contribute to the lower effect of the program amongst men. However, years after the PTD programme - when several GPs left the island - suicides increased again but continued to decline after the introduction of a second GP training in 1992 (Rutz et alet al., 1997).

The Kiskunhalas program (Hungary)

In cooperation with the American Foundation for Suicide Prevention, the National (Hungarian) Institute for Psychiatry and Neurology and the local mental health centre organised a 5-year educational programme on the management of depression for 28 primary care physicians in the area of Kiskunhalas, a high suicide-risk region in Hungary. The training consisted of 4 workshops in October-November 2000, followed by booster sessions over and a one-hour lecture 3 times a year, both over the course of 5 years. Parallel to the training program a Depression Treatment Clinic was established in the intervention region, and telephone consultation services for primary care physicians with psychiatrists were made available. The programme resulted in a significant reduction in the suicide rate within the intervention region (59.7 to 49.9/100 000, respectively). Furthermore, the suicide rate among rural women in the intervention region decreased by 34% and increased by 90% in the control region. However, decrease was found in females not males. The psychological autopsy study showed that alcohol misuse in males – similarly to the Gotland Study - was not addressed by GPs and males who completed suicide were not treated for their alcohol misuse. The number of clients treated with antidepressants increased significantly in the intervention compared to the control region, and more so among women than men (Szántó et al., 2007).

Primary care educational program in Jämtland County, Sweden

Between 1995 and 2003 a continuous education program on depression was provided to GPs in Jämtland County, Sweden. Between 1995 and 2002 a total of 85 doctors participated in at least one seminar out of eight. Compared to the pre-intervention period, the suicide rate decreased by 36%, while this reduction was only 30% in the country during the same time period. The decrease in male suicide rate was 30% in Jämtland county, and 29% in Sweden. For woman, the decrease was 49% in Jämtland, and 30% for Sweden. Parallel with the decrease of suicidal rate the use of antidepressants increased by 161% in this county (Henriksson and Isacsson, 2006).

"Take care" educational program (England)

In England an educational package was provided to general practitioners for the detection and management of depression (Hannaford et al, 1996). The aim was to investigate whether the package affects the recognition rate of depression or not. Following the implementation of the the Take Care package there was a significant improvement in the recognition of depressed patients. Prior to the project, general practitioners missed a depressive illness in 24.1% of patients, while subsequent to the package, this number decreased to 17.1% (decrease 7.0%, p<.005).

Despite the promising results provided above across several countries, not all training programs have proven to be effective. For instance, a GP training program for 88 GP's in Northern Ireland found that despite knowledge on depression increased it was not sustained, this may have been avoided if booster sessions and routine skills trainings had been provided (Kelly, 1998)

In Hampshire, England the effectiveness of an educational programme was tested in improving the recognition and outcome of primary care depression. Education was delivered in a representative sample of 60 primary-care practices. The primary endpoints were recognition of depression, defined by the hospital anxiety and depression (HAD) scale, and clinical improvement. The sensitivity of physicians to depressive symptoms was 39% in the intervention group and 36% in the control group after education (odds ratio 1.2 [95% CI 0.88–1.61]). Thus, training programmes at the primary care level may increase knowledge however it may not always be the most effective strategy in reducing depressive symptoms in clients seeking care at the primary care level. (Thompson et al, 2000).

Optimizing Suicide Prevention Programs and their Implementation in Limerick (OSPI Limerick) –
Awareness and skills training with General Practitioners on depression and suicidal behaviour

An introductory workshop with GPs presented an overview of OSPI-Limerick, and suicide and self-harm in Ireland, and addressed issues of self-care for those working in primary care. An open discussion was held with GPs following the presentations in relation to time commitments to suicidal patients and referral pathways.

An advanced workshop was held with seven GPs from the Limerick. Four training sessions were held late in 2011. A total of 98 GPs received training during the course of the study period. Information DVDs on depression for young people were sourced from Lothian Alliance Against Depression in Scotland which were developed as part of the European Alliance Against Depression. The DVDs were distributed to 120 GPs throughout Limerick as part of an information package which included leaflets, posters and information on OSPI-Limerick. Data on the outcomes of training were available for a small number of GPs. (n=7). GPs exhibited improvements between pre- and post-training measures in their levels of attitudes (51.33 vs 55.00, t= -1.96, p=0.11) and confidence (21.14 vs 26.57, t= -2.80, p=0.31). (all information from OSPI report, 2013 – Arensman et al, 2013).

TRAINING PROGRAMS FOR OTHER HEALTH CARE PROFESSIONALS

The National Swedish Prevention of Suicide and Mental Ill-Health (NASP) training programmes

The Swedish National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at Karolinska Institute introduced a 200-hour academic, postgraduate educational programme (based on the training-of-trainers model) in suicide prevention. Twenty-nine key persons from 11 psychiatric intervention clinics in Stockholm County attended the first course. Preconditions for implementing suicide-preventive activities were assessed (n=10). A wide range of suicide-preventive activities had been implemented as a result of the NASP course (Ramberg, 2004a). Perceptions of being sufficiently trained (p < .01) improved significantly among staff working at intervention clinics. Compared with the control group, the intervention group had a better understanding of essentials (p < .05); found instructions clearer (p < .01) and experienced fewer problems with superiors' differing views (p < .05) at follow up. Assistant nurses working at intervention clinics seemed to benefit the most (Ramberg, 2004b).

Other Swedish training programmes for mental health professionals

In Stockholm, Sweden attitudes of psychiatric nursing personnel (N=47) towards suicide attempters were examined before and after a training program in psychiatric suicide prevention. General understanding and willingness to provide care for these suicidal patients increased significantly (p<0.01), and the suicide risk of patients was estimated more accurately (p<0.01) after the program. The results suggest that it may be possible to enhance positive attitudes toward attempted suicide patients among psychiatric nursing personnel (Samuelsson and Asberg, 2002).

The Skill Training on Risk Management (STORM) project

In England suicide risk management training was delivered for 167 health professionals working in primary care, accident and emergency departments and mental health services. Appleby et al. showed that a 6-month training period significantly improved suicide risk assessment and management skills. (Appleby et al., 2000).

The STORM training package was also implemented among prison staff In England and Wales. STORM is a package emphasizing the practice and review of interactions with suicidal persons. The prison staff who received training completed questionnaires before and after the training and and during the 6 to 8 months follow-up. Attitudes, knowledge, and confidence improved significantly, and improvements were maintained during follow-up. (Hayes et al., 2008).

PROGRAMS FOR THE GENERAL PUBLIC

As it is discussed in the chapter "Multi-level community-based programs", there are several interventions targeting the general public. The aim of those programs is to inform the broad public about depression and/or suicide, decreasing the stigma, increasing the awareness of the problem, in order to push more patient into the health care system. The interventions are using the well-known tools such as posters, cinema sport, public events, brochures and leaflets. The online sources become more important and some interventions (e.g. iFightdepression) aim to serve the public through the internet with valid and up-to-date information.

Training programs for gatekeepers

This topic is also discussed in the chapter "Multi-level community-based programs". Gatekeepers (often called community facilitators) are those persons who have access to many other people and have a possibility to interact with them. Psychologists, teachers, social workers, counsellors, priests have an important role. The emergency services, police, firemen are those who meet the people in case of suicide attempt, suicidal situations, families right after an event etc. Pharmacists, and district nurses are also in a position where the suspicion of depression or suicide risk can be recognized. Also the role

of certain kinds of professionals (hair dressers, waiters, taxi drivers) cannot be overestimated. There can be workshops for certain kind of gatekeepers, where the TTT model can be widely used. The public campaign, the media has a crucial role to deliver the messages to the community facilitators.

Mental Health First Aid (MHFA)

Mental Health First Aid (MHFA) is an effective standardised psychoeducational intervention for improving knowledge, attitudes, and behaviour about mental health and disorder. The main aim of the program is the empowerment of the public to recognize, approach and support of individuals with mental ill-health, and also help them to seek professional help. According to a meta-analysis of Hadlaczky et al. (2014) MHFA programmes show a powerful potential as a public mental health awareness-increasing strategy, with a convincing effect size (Glass's Δ 0.56, 0.28 and 0.25 respectively) in three different outcome measures: change in knowledge, attitudes, and helping behaviours. These results demonstrate that MHFA increases participants' knowledge regarding mental health, decreases their negative attitudes, and increases supportive behaviours toward individuals with mental health problems, and could be recommended as a feasible, effective method for public health action.

Emergency Healthcare Staff Training in the Assessment and Management of Self-Harm (National Suicide Research Foundation, University College Cork; Liaison Psychiatry Service, Cork University Hospital)

This initiative involves the implementation of an evidence based self-harm and suicide awareness-skills training to emergency healthcare staff in working with self-harm or suicidal patients. This programme involves two levels: level 1 involves the development and delivery of a one-day training programme to mental healthcare staff in the management and assessment of self-harm and suicidal behaviour using the Train-The-Trainer (TTT); level 2 involves the development and delivery of a 2-hour self-harm and suicide awareness and skills-based training to all Emergency Healthcare Staff (EHS) using the Train-The-Trainer (TTT) model. Both the TTT workshop and 2-hour awareness training were based on models that were developed by the European Alliance Against Depression (EAAD) and recently optimised as part of the Optimising Suicide Prevention Programmes and their Implementation in Europe (OSPI-Europe) initiative. The training covers the following four key aspects: 1) The extent of self-harm and suicide and associated risk factors; 2) Attitudes towards depression and suicidal behaviour; 3) Direct and indirect effects of alcohol in relation to self-harm and suicide; and 4) The identification of risk and responding to a patient presenting with self-harm or suicidal behaviour. The study design was a prospective follow-up study involving a single cohort of people. Six Cork-based healthcare professionals took part in a one-day/eight hour Train-the-Trainer (TTT) workshop which equipped them to subsequently deliver the 2-hour training sessions to EHS. To date, 102 EHS attended the 2–hour awareness training programmes on self-harm and suicidal behaviour. This training is still being rolled-out. Identical pre- and post-training questionnaires were given to all participants. Eighty seven participants of the 2-hour training (85.3%) completed both pre and post-training evaluations. Following the training there were significant improvements in all areas targeted by the training: knowledge and understanding of self-harm, attitudes to self-harm, and confidence in relation to the management of patients presenting with suicidal behaviour, and confidence in recognising potential suicide risk in a patient. To date 35 participants (response rate: 34%) have successfully completed the 6-month follow-up training evaluation. Paired t-tests were used to compare any changes between participant's knowledge, attitudes and confidence at each stage of evaluation. There was a positive increase at each stage in attitudes, knowledge and clinical confidence for participants (all from the draft report of the Emergency Healthcare Staff Training, 2014).

National Dialectical Behaviour Therapy (DBT) Project

It is run by the Health Service Executive, aims to establish new DBT teams across the country and expand those already in operation. In the first year of operation (2013 - 2014), eight teams, comprising 59 therapists from all around the country were trained to provide DBT. In addition to this, over 30

therapists were also trained to supplement existing DBT teams throughout the country. In year 2 of the project (2014-2015), a further eight teams were trained to run DBT programmes. Also, in May 2015, 43 additional therapists were trained in DBT to join teams based throughout Ireland. In addition, research is undertaken to evaluate the effectiveness, cost effectiveness and implementation of each DBT team. The effectiveness of DBT will be evaluated using psychological assessments, client record information filled in by their individual DBT therapists (services utilised, hospitalisations, A&E attendances pre, during, and after the programme), and records of attendance and phone coaching. A separate DBT programme has been implemented for adults (12 months in length with 6 month follow-up) and adolescents (16 week programme and 16 week follow-up).

Applied Suicide Intervention Skills Training (ASIST)

It is a two day suicide intervention skills training course. The course was developed by Living Works in Canada and is delivered as part of many counties suicide prevention strategies. Skills, knowledge and attitudes are developed through educational modules, group discussion and a variety of simulated intervention situations. ASSIST also aims to provide a networking opportunity for participants. ASSIST is delivered free of charge throughout the country by the HSE, in partnership with various community groups. However, LivingWorks is responsible for ASSIST quality control in Ireland and oversee the training of ASSIST trainers. ASSIST differs from most other "Gatekeeper" models in that it does not follow a linear model of identification, intervention, referral. Rather, it advocates that referral to formal services is not always appropriate for suicidal individuals. The National Office for Suicide Preventions All island evaluation of Applied Suicide Intervention Skills Training (ASSIST) found that ASSIST improves participants' knowledge and skills scores, attitudes towards suicide, willingness to intervene and increases self-reported intervention behaviour.

In sum, referring to training programs, many best practices are identified. These programs decrease the treatment gap in depression and decrease the number of suicides, if they are delivered in the form of continuous education. However, the majority, but not all of the trainings have proven to be effective. Further research is needed for clarifying the effective elements as well as the cost-effectiveness of the educational programs. Nevertheless the appropriate training programs also have an additional beneficial effect of reducing stigma.

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4.3. Restriction of access to lethal means

> ### *Key messages*
>
> - *Restricting the access to lethal means proved to be very effective for decreasing the number of suicides*
>
> - *Providing contact details of telephone helplines for suicidal individuals in suicide sites reduces the number of suicides and increases mental health care utilisation*
>
> - *Education and surveillance of anxiolytic and hypnotic drug (AHD) prescription, and the restriction of allowed paracetamol tablets per pack reduced the number of suicides by 25% and 21% respectively*

RESTRICTING ACCESS TO SUICIDAL SITES

Jumping appears to be more common in some countries and cities where there are a large number of high-rise buildings. Jumping from a high place is a highly lethal method, so there are sound reasons to try to prevent suicides committed by jumping. Sites include bridges, viaducts, high-rise public, residential and institutional buildings and cliffs. These places are referred to as "hotspots" (Beatruis, Gibb, 2009).

Installing barriers or safety nets at "hotspot" sites is one preventative approach that has been used in Europe, for instance in Bristol, England on the Clifton Suspension Bridge. A study assessing the effects of this preventative approach found that suicides on this bridge halved from 8.2 to 4.0 per year p=0.008) (Bennewith et al., 2007). As another preventative method (Bennewith et al., 2007) expanded the role of bridge staff to include the monitoring of incidents and the installation of CCTV cameras.

A safety net was built in 1998 to prevent people in Switzerland from jumping at the Bern Muenster Terrace, which eliminated suicides completed at this site (Reisch and Michel, 2005). The number of people jumping from all high places in Bern was significantly lower compared to the years before, which suggests that no immediate shift to other nearby jumping sites took place.

Skegg and Herbison (2009) investigated the effects of a road closure of the suicidal hotspot "Beachy Head in Sussex", United Kingdom. There were 13 deaths involving suicide or open verdicts in the 10 years before access was restricted, and none in the 2 years following the preventive measure. No jumping suicides occurred elsewhere in the nearby police district following the road closure. Police callouts for threatened suicide also fell significantly, from 19.3 per year in the 4 years prior to road closure to 9.5 per year for the following 2 years.

Another preventive measure is to erect signs providing contact details of telephone help lines for suicidal individuals. A study by King and Frost (2005) revealed that the Forestry Commission car parks in New Forest, England attracted a number of nonlocal suicide attempters, who died primarily from car exhaust gas poisoning. Signs displaying the Samaritans' national telephone number were erected in the 26 car parks in which 50% of the car park suicides had occurred. During the 3-year intervention period the number of suicides fell significantly from 10 to 3.3 per year. The average annual total number of suicides in the New Forest registration district also decreased, and the reduction in suicide rate was sustained up to two years following the evaluation. The study also explored the impact of the reduction at the intervention sites on the overall number of suicides in the district and found that this decreased, suggesting that substitution had not occurred.

Control of media reporting is a major aspect of suicide prevention by jumping from high places, since suicides from iconic public sites often lead to extensive media coverage (Beautrais, Gibb, 2009). The effect of responsible reporting on suicide is discussed in more detail in one of the following chapters.

PREVENTION OF RAILWAY SUICIDE

Railway suicide is a particularly violent suicide method, and case fatality is 90% of all attempts. The tendency to choose this method of suicide is prevalent among males (as opposed to females) and younger people with a mental illness (Ladwig et al, 2009).

Denying access to the railway track is by far the most effective method to prevent especially those in the proximity of psychiatric hospitals (Erazo et al., 2004). Drainage pits in metro system were found to decrease mortality due to the increased space between the attempter's body and the train (Clarke and Poyner, 1994).

RESTRICTION OF THE AVAILABILITY OF DRUGS AND MEDICATION AS MEANS OF SUICIDE

Suicide by prescription drugs and medications is a common suicide method in many countries worldwide, given their easy access. Gunnel (1997) found a positive correlation between paracetamol sales and the rate of attempted and lethal suicide both in England and France, the same trend was identified in Sweden for antipsychotics and anxiolytics (Isacsson et al., 1995).

In a Swedish study by Melander et al. (1991) prescription surveillance and an information campaign in Malmö resulted in a 4-year decrease in anxiolytic and hypnotic drug (AHD) prescribing (12%), in AHD misuse abuse (40%), in barbiturate prescribing (45%), and in barbiturate suicides (70%). The total suicide rate was reduced by 25%. In the control region (Gothenburg), the suicide rate increased over seven consecutive years. The suicide rate in Malmö did not increase in the following 4 years due to other drugs or other means, but after 5 years there was an increase in suicide by non-pharmacological means.

In England, after a law was introduced concerning the number of allowed tablets per pack of paracetamol in 1998, the number of annual deaths due to paracetamol poisoning decreased by 21% and the number from salicylates decreased by 48% (11% to 70%). Liver transplant rates after paracetamol poisoning decreased by 66% (55% to 74%). The rate of non-fatal self-poisoning with paracetamol in any form decreased by 11% (5% to 16%), mainly because of a 15% (8% to 21%) reduction in overdoses of paracetamol in non-compound form. The average number of tablets taken in paracetamol overdoses decreased by 7%, and the proportion involving >32 tablets decreased by 17% (4% to 28%) (Hawton et al., 2001).

Withdrawal of distalgesic from the Irish market

Distalgesic, the prescription-only analgesic compound of paracetamol (325 mg) and dextropropoxyphene (32.5 mg) known as co-proxamol in the UK, was withdrawn from the Irish market as of January 2006. Corcoran et al evaluated the impact of the withdrawal of distalgesic in terms of intentional drug overdose (IDO) presentations to hospital emergency departments (EDs) nationally. They reported that the withdrawal of distalgesic has had positive benefits in terms of IDO presentations to hospital in Ireland and provides evidence supporting the restriction of availability of means as a prevention strategy for suicidal behaviour.

In sum, numerous convicting studies demonstrate that restricting the access to lethal means proved to be very effective for decreasing the number of suicides. The legislation and action plans for the wider implementation of these tools are vital necessities in Europe.

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4.4. Restriction of alcohol consumption

> **Key messages**
>
> - *Suicide and alcohol consumption are highly correlated*
>
> - *A high proportion of suicide attempters have been found blood alcohol positive after the attempt*
>
> - *Between 1984-1988, during the anti-alcohol campaign of "Perestroika" in the former Soviet Union, when alcohol prices were raised and sales were limited, suicide rates showed a 32% decline among males and 19% among females*
>
> - *The restriction of alcohol availability decreases suicidal behaviour*

Suicide and alcohol consumption are highly correlated (Beautrais et al., 1996; Cheng, 1995, Hawton & van Heringen, 2009; Wasserman, Hadlaczky, 2009). Thus, restricting access to alcohol or promoting more appropriate consumption of alcohol could contribute to fewer suicides. At the policy level, in 1985 an anti-alcohol campaign was initiated by Gorbachev in the former Soviet Union. Alcohol prices were raised and sales were limited. Suicide rates fell between 1984-1988, with a 32% decline among males and 19% among females. However, when "perestroika" (restructuring) ended, the suicide rate sharply increased again, particularly among men (Värnik et al., 1998, Wasserman et al., 1998).

Blood alcohol concentration (BAC) at the time of suicide was examined in relation to the marked falls in suicide rates and per capita alcohol consumption in Estonia during the major Soviet anti-alcohol campaign from June 1st 1985. During the campaign, annual per capita alcohol consumption in Estonia fell from 10.9 to 6.6 litres. Alcohol in blood was found in 47.9% before, 35.1% during and 40.9% after the campaign. During the intervention, BAC-positive, i.e. alcohol-positive, suicides decreased by 39.2% for males and 41.4% for females, with the largest fall occurring at the BAC 2.5‰+ level for both sexes. Changes in BAC-negative suicides were modest. When the campaign ended suicide rates started to rise (Värnik et al., 2007).

Nevertheless alcohol consumption has many cultural, symbolic and social aspects, deeply rooted in the European culture, and its impact of the associated lifestyle should not be neglected (SIRC Report the EC, 1998 *http://www.sirc.org/publik/social_drinking.pdf*)

In sum, a number of interventions provide good examples that the restriction of the availability of alcohol could reduce the number of suicides. There are a number of laws in Europe about either the ban or the limit of buying and consuming alcoholic beverages. These laws vary applying to time period, location and age group. Although legislation about the restriction to access to alcohol has many public health benefits, considering the primacy of the socio-cultural aspects of alcohol, it is important to highlight, that restriction should not to be the single way of reducing the effects of harmful drinking. Promotion of more health friendly, responsible drinking behaviours has equal importance; therefore more attention should be directed toward the social, cultural and symbolic elements of drinking behaviour prior to the development of health promotion programs targeting alcohol consumption. The better understanding of the cultural role of alcohol in the culturally different European communities could lay a firm foundation for the development of cost-effective promotion programmes aiming to change drinking culture in Europe.

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4.5. Media reporting guidelines

> ### *Key messages*
>
> - *Media reporting on suicide could precipitate suicidal behaviour (imitative or copycat suicide)*
>
> - *Responsible communication guidelines could drop the number of suicide attempts by approximately 80%*
>
> - *A WHO Guideline is available, but the media adherence of the guidelines is extremely poor in general*

Many studies demonstrated that media reporting influences suicide (Westerlund et al., 2009). In one of the most recent systematic reviews Sisask and Värnik (2012) provided a detailed overview of mediating the role of media reporting in suicide prevention.

MEDIA CAMPAIGN AND GUIDELINES FOR RESPONSIBLE COMMUNICATION IN VIENNA

Railway or metro suicide often leads to extensive media coverage. In preventing imitative suicides, it is crucial to influence mass media to limit reports and depictions (Etzersdorfer and Sonnek, 1998). After the implementation of the Vienna subway system in 1978, it became an increasingly acceptable means to commit suicide. This and the fact that the mass-media reported about these events in a very dramatic way, lead to the formation of a study-group within the Austrian Association for Suicide Prevention (ÖVSKK), which developed media guidelines and launched a media campaign in mid-1987. As a result the media reports changed markedly while the number of subway-suicides and -attempts dropped more than 80% from the first to the second half of 1987, the effects of which was sustained for 5 years (Etzersdorfer, Sonneck, 1998). According to Niederkrotenthaler and Sonneck (2007) Viennese subway suicides showed a highly significant level shift and a highly significant trend change after the introduction of the guidelines. These effects corresponded to vital changes in the quality and quantity of media reporting.

In another study the impact of media guidelines was investigated with interrupted time series analysis. There was some evidence of a nationwide impact of the guidelines, calculated as a significant reduction of 81 suicides annually. This effect was particularly due to a substantial reduction in the area with the highest coverage rates of the collaborating newspapers. Viennese subway suicides showed a highly significant level shift (t = -4.44, df = 19, p <0.001) and a highly significant trend change (t = -4.20, df = 19, p <0.001) after the introduction of the guidelines. These effects also corresponded to crucial changes in media reporting (Niederkrotenthaler, Sonneck , 2007).

In 1992 officials from the Swiss media were urged to follow guidelines for reporting suicide. A content analysis of stories pre and post the introduction of guidelines showed a substantial increase in the responsible reporting of suicide. The percentage of suicide stories on page one and stories with sensational headlines declined from 20% to 4% and 62% to 25%, respectively (Michel et al., 2000).

In a study by Niederkrotenthaler et al. (2010) the possible preventive effects (Papageno effect) of suicide-related media content was tested in Austria. Coverage of individual suicidal ideation not accompanied by suicidal behaviour was negatively associated with suicide rates, which means that reporting on positive coping strategy in adverse life events can have protective effects.

SOCIAL MEDIA PLATFORMS IN SUICIDE PREVENTION

Exchanging information through social media platforms has become usual daily habit particularly amongst young people. However limited information is available about the role of social media in suicide

prevention. In their recent paper Robinson et al., (2015) highlight the favours and the challenges of using social media platform in the reduction of suicidal behaviour based on a systematic review of thirty studies.

Favours

- social media has a strong potential for reaching large numbers of individuals

- provide an anonymous, easily accessible forum for those hard to engage

- create a platform for a forum of experiences and for prompt online intervention of others

Challenges

- unresolved difficulty of controlling users and adequate risk assessment

- privacy and confidentiality issues

- possibility of adverse effects, most notably the contagion of suicidal behaviour in a copycat manner

Nevertheless the authors highlight the possible significant potential of social media in suicide prevention. However, despite the extensive common use of social media, they could not identify any intervention. There is an urgent necessity of more research about the efficacy and safety of the use of social media platforms in suicide prevention.

THE WHO GUIDELINES FOR MEDIA PROFESSIONAL

In 2000, WHO released the publication, Preventing suicide. - a resource for media professionals, which is a summary of what the media should and should not include in their reporting. The most important elements of the responsible media communication of suicidal event are the following:

- Avoid prominent placement of news about suicide

- Avoid language which sensationalizes or normalizes suicide, or presents it as a natural consequence of a life event, or solution to problems

- Avoid description of the method and information about the site of suicide

- Take the opportunity to educate the public about suicide, provide information about where to seek help

- Exercise caution in using photographs or video footage

- Take particular care in reporting celebrity suicides

- Show due consideration for people bereaved by suicide

- Provide information about where to seek help on local predicted venues of suicidal events (e.g. high places, railway crossings etc.).

ADHERENCE TO GUIDELINES FOR RESPONSIBLE MEDIA COMMUNICATION OF SUICIDE

Although the WHO guidelines are widely available from 2000, the media compliance to these guidelines is generally very poor. For example, a recent study by Pitman and Stevenson (2015) reflects a highly disappointing scene: 100% of the reviewed 68 British newspapers failed to show full adherence. Of the reviewed newspapers, 21% used inappropriate language; 38% provided explicit descriptions of the suicide; 7% employed simplistic explanations for suicide triggers; 27% romanticized the suicide; and 100% omitted information on sources of support.

In sum, the promotion of legislation concerning the rules of responsible media communication, and also reaching a significantly increased level of compliance of media professionals are important areas of the primary prevention of suicide. Nevertheless, strengthening public response to mental health problems trough appropriate media communication has a considerable potential for shaping attitudes at the individual, professional and community level, and reducing stigma. Therefore public information activities and especially the increasing use of social media become increasingly important in preventing depression and suicide.

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4.6. Health care approaches to depression and suicide: prevention and treatment 1. Pharmacotherapy

> *Key messages*
>
> - *Treatment with antidepressants has proven to be effective in reducing suicidal behaviours among the elderly, but there are conflicting results concerning their efficacy in younger populations*
>
> - *Lithium and mood stabilizer treatments of bipolar disorders are highly effective in the prevention of suicide attempts*
>
> - *Novel antipsychotic treatment and clozapine have proven to reduce the risk of suicide in schizophrenia*
>
> - *The following unmet needs are associated with pharmacological treatment: Side effects that impact the quality of life tend to diminish compliance. However, side effects would be much more tolerable if the available drugs had greater capabilities to reduce the symptoms that distress patients. Slow action, a high rate of non-response for the first chosen antidepressant, partial remission and residual symptoms (insomnia, blunting, residual cognitive symptoms) are some of the obstacles for treatment compliance*
>
> - *For suicidal patients a combination of pharmacotherapy and psychotherapy is recommended*

ANTIDEPRESSANT TREATMENT OF DEPRESSION

Antidepressants (in unipolar depression) and mood stabilizers (in bipolar disorders) have the most prominent place in the psychopharmacological treatment of depression and the prevention of suicide (Möller, 2009, Rihmer and Gonda, 2013). Several studies confirm the effectiveness of antidepressants in treating depression, thus reducing suicidal thoughts, attempts and completed suicides. Preventive measures at an individual and population level are essential. The effect and indication of pharmacotherapy may vary in adolescent age groups. However considering the benefits of antidepressant treatment, a discrepancy could be found between the results of epidemiological and treatment studies. The convincing advantages of antidepressant treatment in treatment studies are not demonstrated so clearly in epidemiological studies due to confounding factors.

In a study by Barak et al. (2006) the association between exposure to antidepressants and suicidality in elderly patients suffering from major depressive disorder (MDD) was evaluated over a 10-year period. Elderly depressed patients treated with antidepressants may be at reduced risk of attempting suicide. The index group comprised 101 patients who had attempted suicide in the month prior to admission. The proportion of patients exposed to an antidepressant was significantly greater in the control group, than in the group of patients who had attempted suicide (58 vs. 42). SSRIs were prescribed to 29% of patients in the control group vs. 21% of patients in the index group (p=0.03).

Suicidal thoughts and intentions disappear with the reduction of depression as a result of antidepressant treatment, not only in unipolar but also in bipolar depression (Möller, 2003). In Sweden statistics on suicide were obtained for the years between 1978 and 1996. The author hypothesized, that a five-fold increase in the use of antidepressants might reduce Swedish suicide rates by 25%. Increase in the use of antidepressants provided a 'natural experimental situation' for prospectively testing this hypothesis. Suicide rates decreased in accordance with the a priori hypothesis from 23.3/100.000 in 1991 to 18.8 in 1996 (p<0.05) (Isacsson, 2000). Carlsten et al.et al. (2001) found a decrease in suicidal rate in Sweden between 1977 and 1979 while the antidepressant sales increased. However, the change in suicide

rates in men and women which coincided with the introduction of the SSRI antidepressant in Sweden preceded the exponential increase in antidepressant sales (Carlsten et al., 2001). The decline among men was from 48.2 to 33.3 and in women from 20.3 to 13.4. Montgomery et al. (1981) in agreement with the hypothesis, found a faster reduction of suicidal thoughts under treatment with doses of zimelidine and amitriptyline that were comparable with respect to the global antidepressant treatment success.

Several studies proved that antidepressants are able to reduce suicidal ideation. In a study of Baesley et al (1991) suicidal ideation reduced significantly more with fluoxetine than with placebo (72% vs. 54.8%, p<0.001), and the improvement was similar to the effect of TCAs (Baesley et al., 1991). In terms of suicidal behaviour there was no relevant difference. In other study similar results was found (Lopez-Ibor, 1994): on the Hamilton Depression Scale the suicidality item showed that paroxetine and the active control group were significantly superior to placebo in reducing suicidal thoughts. Concerning suicidal behaviour there were no substantial differences between the groups. This is in line with the observation that suicidal thoughts are indicators of depression. Other randomized, controlled, short- and long-term trials do not support the hypothesis, that antidepressants reduce attempted or completed suicides (Möller, 2006). However, these studies have many confounders.

On the other hand, epidemiological, naturalistic studies demonstrated the capacity of antidepressants to reduce suicidal behaviour in recent years (Möller, 2006). In a Scandinavian study Isacsson (2000) found a decrease in suicidal rate in parallel with the increased use of antidepressants as mentioned above. The same tendency was observable in other countries, such as Denmark, Norway and Finland between 1990 and 1996.

In a cohort study, all subjects were hospitalized because of a suicide attempt in Finland, and were followed up through a nationwide computerized database. In the entire cohort, fluoxetine use was associated with the lowest risk (RR, 0.52), and venlafaxine hydrochloride use with the highest risk (RR, 1.61), of suicide. Among subjects who had ever used any kind of antidepressant, the current use of medication was associated with a markedly increased risk of attempted suicide (39%, P<.001), but also with a markedly decreased risk of completed suicide (-32%, P=.002) and mortality (-49%, P<.001), when compared with no current use of medication (Tiihonen et al., 2006).

In their 34-38 year-long naturalistic follow-up study including 186 formerly hospitalized patients with unipolar major depression, Angst et al. (2002) found that patients who received long-term pharmacotherapy (antidepressants, antipsychotics and/or lithium) tended to live longer and to have significantly (2.5-fold) lower suicide rate (7.1% versus 18.1%) than untreated unipolar depressives.

In Hungary the suicide rate showed a steady decline between 1984 and 1998, which indicates a more than 30% decrease. This decline was greater after 1990 when the political and economic changes in Eastern Europe had begun. This marked decrease in suicide mortality in Hungary occurred in spite of the fact that between 1989 and 1996 there was a six fold increase in unemployment, a 25% rise in official estimates of alcoholism rates and a 21% increase in divorce. More extensive medical training on depression and suicide was followed by a fivefold rise in the use of antidepressants, which was followed by a 30% decline in the suicide rate in Hungary between 1984 and 1998 (Rihmer, 2001). Later studies from Hungary have also supported the role of a more widespread use of antidepressants in the declining national suicide rate (Kalmár et al., 2008, Sebestyén et al., 2010, Döme et al., 2011). As national suicide rates are affected by many factors, isolating the means of better treatment of depression is not easy. However, the marked decline of national suicide rates in countries where antidepressant utilization recently increased by three-to-tenfold (while no consistent correlation or no correlation between suicide rates and unemployment, alcohol consumption, GDP etc. have been found) supports the suicide reducing effect of antidepressants (Ludwig et al., 2009, Gusmao et al., 2014). This also suggests that the aforementioned beneficial effect could be detected even at the level of the general population.

In Italy from 1988 to 1996 antidepressant sales increased by 53%. In the 7-year period over which SSRI use increased, male suicide rates increased from 9.8 to 10.2 per 100,000 inhabitants, and female suicide rates declined from 3.9 to 3.2 per 100,000 (Barbui et alet al., 1999).

In Northern Ireland, between 1989 and 1999 there was a fivefold increase in the prescription rate of antidepressants. Several factors associated with suicide were investigated by an older and a younger age group. In the younger group there was no association between antidepressant prescribing and suicide. Among the older group increased antidepressant prescribing was associated with a reduction in suicide rate over the 10 years of the study (Kelly et al., 2003).

On the other hand there, are studies which were unable to confirm the association between the prescription rate of antidepressants and a decreased suicide rate. In their study, Helgason et al. (2004) investigated the public health impact of the escalating sales of antidepressants. Sales of antidepressants increased from 8.4 daily defined doses per 1000 inhabitants per day in 1975 to 72.7 in 2000, which is a user prevalence of 8.7% for the adult population. Suicide rates fluctuated during 1950-2000 but did not show any definite trend. Rates for out-patient visits increased slightly over the period of 1989-2000 and admission rates increased even more. The prevalence of disability due to depressive and anxiety disorders has not decreased over the past 25 years.

TREATMENT WITH LITHIUM AND OTHER MOOD STABILIZERS

Lithium is an effective treatment for reducing the risk of suicide among people with mood disorders (Cipriani et al., 2013). In a meta-analysis lithium was more effective than placebo in reducing the number of suicides (OR 0.13). In unipolar depression, lithium was associated with a reduced risk of suicide (0.36,0.13 to 0.98) and also the number of total deaths (0.13, 0.02 to 0.76) compared with placebo. In their comprehensive review of 45 randomized, controlled and open clinical studies (including 34 studies also providing data without lithium treatment) involving a total of 85,229 person-years of risk exposure Baldessarini et al. (2006) reported an about 80% risk reduction for attempted and completed suicides both in in bipolar and unipolar patients with long-term lithium treatment. The risk reduction was similar for suicide attempts and for completed suicides. The incidence-ratio of attempts-to-suicides increased 2.5 times with lithium treatment, indicating reduced lethality of suicidal acts. The authors concluded that the robust reduction of suicidal behaviour with lithium maintenance in bipolar and unipolar patients to overall levels was close to general population rates.

In a Danish study, using linkage of national registers, Sondergard et al (2008) investigated the association between continued mood stabilizing treatment and suicide among all patients discharged nationwide from hospital psychiatry as an in- or outpatient with an ICD-10 diagnosis of bipolar disorder during 1995 and 2000 (n=5926). Patients who continued treatment with various mood stabilizers (lithium, divalproex, lamotrigine, oxcarbazepine and topiarmate) had a significantly decreased rate of completed suicide compared to patients who purchased mood stabilizers only once, and the rate of suicide decreased consistently with the number of additional prescriptions. Although long-term treatment with lithium and antiepileptic mood stabilizers was associated with a similar reduction in the suicide mortality, these results suggest that lithium may have some superiority in preventing suicide.

After a 11 year follow-up study the mortality of 103 patients attending in a lithium clinic were compared with what was expected on the basis of age/sex/year-specific rates for England and Wales. Only 10 patients died during the study, although the expected number of deaths was 18.31 and no deaths from suicide were observed. After correcting for the prevalence of mood disorder in the general population, the relative risk was 0.60 (95% CI 0.29-1.12) which suggests that lithium reverses the excess mortality associated with recurrent mood disorders, including that from suicide (Coppen et al., 1991).

In a meta-analysis by Tondo et al., (2001) suicide was 82% less frequent during lithium- treatment among 5647 patients. The computed risk-ratio in studies with rates on/off lithium was 8.85.

TREATMENT OF SCHIZOPHRENIA

Treating schizophrenia with novel or atypical neuroleptic drugs decreases attempted and completed suicide rates among patients with psychotic disorder.

In a 2-year, international, randomized, multicentre study the risk for suicidal behaviour in 980 schizophrenic patients treated with clozapine and olanzapine was compared. The results proved the positive effects of clozapine. Suicidal behaviour was significantly less in patients treated with clozapine vs. olanzapine (hazard ratio, 0.76)- Fewer clozapine-treated patients attempted suicide (34 vs. 55; P = .03), required hospitalizations (82 vs. 107; P =.05) or rescue interventions (118 vs. 155; P = .01) to prevent suicide, or required concomitant treatment with antidepressants (221 vs. 258; P = .01) anxiolytics or soporifics (301 vs. 331; P =.03) (Meltzer et al., 2003). An 11-year population-based cohort study in Finland found Clozapine associated with a substantially lower risk of suicide than any other drug (Tiihonen et al., 2009).

In another study 44 patients with chronic DSM-IV schizophrenia were treated with clozapine or haloperidol decanoate in an open prospective 6-month trial. As a result the researchers found that the clozapine-treated group (N = 18) had a significantly greater reduction on all outcome measures compared with the haloperidol decanoate-treated group (N = 26). Only in the clozapine-treated group did the reduction in measures of suicidality correlate significantly with a reduction in impulsiveness and aggression (Spivak et al, 2003).

In a study by Hennen and Baldessarini (2005) random-effects meta-analysis indicated a substantially lower overall risk of suicidal behaviours with clozapine vs. other treatments (risk-ratio 3.3). For completed suicides, the risk ratio was 2.9. Long-term treatment with clozapine was associated with three-fold overall reduction of risk of suicidal behaviours.

UNMET NEEDS ASSOCIATED WITH THE PHARMACOLOGICAL TREATMENT OF MOOD DISORDERS

Demands concerning the side effects of drug treatment

With pharmacological treatment, as with every long-term treatment, minimizing side effects that impair quality of life is the focus of intense demand. Side effects that impact quality of life are always a threat to patient compliance, especially in the long term. The main side effects associated with antidepressants are increased body weight and sexual dysfunction. Increased body weight is itself a major risk factor, and increases the likelihood of many serious conditions. This is a complex question, because individual patients vary considerably in how they react to the drugs, and drugs have also been found to vary in this respect (Serretti and Mandelli 2010). Compliance is also subject to many factors besides side effects, including age, socioeconomic status and comorbid conditions. Doctors' attitudes toward the side effects and how they communicate them also have a major influence on compliance. Overall, however, minimising side effects is important for both patients and doctors.

Limitations of present medication

It is also important to bear in mind that side effects would be much more tolerable if the available drugs had greater capabilities to reduce the symptoms that distress patients. Slow action of antidepressants is a variable but ubiquitous characteristic of these drugs, and a drug which acted more quickly and more perceptibly could greatly increase the effectiveness of therapy and improve therapeutic compliance. Another major problem is that the majority of patients do not react to the treatment of first choice (Trivedi et al. 2006, Pae et al. 2012). There is still no consensus in the literature as to how long one treatment should be tried before changing to another antidepressant (Kudlow et al. 2014). A third problem of present antidepressant treatments is partial remission and residual symptoms that impair quality of life. The most common of these are residual insomnia (McClintock et al. 2011, Gülec et al. 2011), which is also a risk factor for relapse, emotional blunting and residual cognitive symptoms of

depression (Jaeger et alet al. 2006). The latter greatly hinder return to work and to full everyday life in general, and also increase the risk of relapse. It seems, therefore, that despite our broad repertoire of antidepressant treatment for depression, and however well-functioning and irreplaceable they are in the treatment of a large proportion of patients, current medications do not meet the needs of patients and their communities to attain full recovery (and fully regain their quality of life).

For suicidal patients, combination of pharmacotherapy and psychotherapy is recommended (EPA guidelines on suicide prevention, Wasserman et al., 2012).

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4.7. Health care approaches to depression and suicide: prevention and treatment 2. Psychotherapy

> *Key messages*
>
> - *There is a considerable body of evidence supporting that a large proportion of depressive patients can be effectively treated with properly-chosen psychotherapies, which are: cognitive behaviour therapy, dialectical behaviour therapy, interpersonal psychotherapy, mindfulness based cognitive therapies and problem solving therapy; these are evidence-based treatments of depression and effective tools of suicide prevention*
>
> - *However the accessibility of these therapies varies greatly from country to country.In many European countries the accessibility is limited, and does not reflect the community needs: long waiting lists and limited funding of psychotherapies are frequent, and in some countries psychotherapies are mainly available in private practice only.*
>
> - *There is an urgent need to improve the accessibility of evidence-based psychotherapy services. There are some promising studies which suggest that appropriate psychotherapy might be a cost-effective alternative to long term pharmacological treatment in many cases of depression.*

COGNITIVE BEHAVIOUR THERAPY

Cognitive behaviour therapy has become the gold standard non pharmacological treatment of depression, it is extensively used worldwide for treating depressive patients. In a meta-analysis by Tarrier et al. (2008) cognitive behavioural therapy was also found as an effective suicide prevention strategy. It has a highly significant effect in reducing suicide behaviour among adults in an individual setting. On the other hand no significant effect could be revealed in the POPMACT multicentre study of 480 patients. The main outcome measure, the proportion of those repeating deliberate self-harm in the 12 months of the study, showed no significant difference between those treated with Manual-Assisted Cognitive Behavioural Therapy (39%) and treatment as usual (46%) (OR 0.78).

DIALECTICAL BEHAVIOUR THERAPY (DBT)

Dialectical behaviour therapy is an outpatient, cognitive behavioural treatment which is a proven method to reduce suicidal behaviour in patients with borderline personality disorder (Stanley, Brodsky, 2009). Its main component is teaching the patient skilful behaviour to replace their maladaptive ones (Linehan et al., 2006). In Europe several studies verified the effectiveness of DBT. In Freiburg, Germany Bohus et al. (2000) developed a 3-month inpatient program prior to the long-term outpatient therapy of 24 patients. A highly significant decrease in the number of parasuicidal acts was reported one month after discharge. In addition significant improvements in depression, dissociation, anxiety and global stress were found. In the Netherlands Verheul et al. (2003) found that dialectical behaviour therapy resulted in better retention rates and greater reductions of self-mutilating and self-damaging impulsive behaviours compared with usual treatment, especially among those with a history of frequent self-mutilation. A down-turn in overall self-harm was seen in a study conducted in the United Kingdom in three female prisons, where Dialectical Behaviour Therapy programmes were undertaken for BPD patients (Nee and Farman, 2005).

INTERPERSONAL THERAPY

Interpersonal problems are very frequent in the background of suicidality, and interpersonal therapy focuses on such problems. In a randomized controlled trial, patients in the intervention group received

a brief psychodynamic interpersonal therapy within one week after deliberate self-poisoning with the focus to identify and help resolve interpersonal difficulties which caused distress. The control group got the usual treatment offered by the GP. Participants of the intervention group had a significantly greater reduction in suicidal ideation during the six month follow up compared to those in the control group (reduction in the mean Beck scale 8.0 v 1.5). They were more satisfied with their treatment and were less likely to report repeated attempts to harm themselves at follow up (proportion repeating 9% v 28% in control group; difference 19%) (Guthrie et al., 2001).

PROBLEM-SOLVING THERAPY

Low problem solving skills are strongly correlated with suicidal tendency, this therapy method aims to improve such strategies. In 1990 Salkovskis et al., found this therapy method effective in a controlled trial. 20 patients at high risk of repeated suicide attempts were randomly allocated to either cognitive-behavioural problem solving or a 'treatment-as-usual' control condition. The group practising problem solving improved significantly more than controls in ratings of depression, hopelessness, suicidal ideation and target problems at the end of treatment and at follow-up of up to one year. Furthermore there was evidence of an effect on the rates of repetition over the six months after treatment.

In a meta-analysis of randomized controlled trials, Townsend et al. (2001) studied the effects of brief problem-solving therapy. At follow-up, patients who were offered problem-solving therapy had significantly greater improvement in scores for depression (standardized mean difference = - 0.36) and hopelessness (weighted mean difference= - 3.2), and significantly more reported improvement in their problems, than patients who were in the control treatment groups.

Williams et al. (2005) divided 34 participants who had a history of depression into 2 groups, those having previous suicidal ideation or behaviour (n=19) and those having no such symptoms (n=15), then compared the 2 groups with a group of participants who had no history of depression (n=22). Assessment of interpersonal problem-solving performance using the Means-Ends Problem-Solving (MEPS) task before and after a mood-induction procedure (sad music and sentences) showed that only formerly depressed people with a history of suicidal ideation shifted in MEPS performance, producing significantly less effective problem solutions following mood challenge. This result supports the hypothesis that problem solving deficit is a state rather than a trait phenomenon.

MINDFULNESS-BASED COGNITIVE THERAPIES

Recently many studies have been published on the effectiveness of mindfulness-based cognitive therapies (Hoffman et al., 2010, Kuykel et al., 2015). The elements of mindfulness-based cognitive therapies (MBCT) are guided meditation, mindfulness and attention focus skills in the form of both individual and group therapies. In a recent study, Kuykel et al. (2015) suggests that MBCT may prevent relapses of depression, thus possibly providing a cost-effective alternative to long term pharmacological treatment.

LIMITATIONS OF EVIDENCE-BASED PSYCHOTHERAPIES

There is a considerable body of evidence supporting that a large proportion of depressive patients can be effectively treated with properly-chosen psychotherapy. The therapies with the greatest evidence base are cognitive-behavioural and interpersonal therapies (NICE guidelines, 2010, Cuijpers et al., 2008), but recently, many studies have been published on the effectiveness of mindfulness-based therapies (Hoffman et al 2010, Kuykel et al., 2015) and even of brief dynamic therapies (Driessen et al., 2010). Access to psychotherapy varies greatly from country to country. Some countries have a well-established system – and proper funding of psychotherapeutic care, but in others, patients have to wait a long time for therapy. In some European countries, psychotherapy is severely underfinanced

and in most cases is only available in private practice. A further problem is that cultural stereotypes inhibit the use of psychotherapy in many communities and subcultures, so that patients do not accept it even when other forms of treatment have proved ineffective. According to the survey of the German Bundespsychotherapeuten Kammer (Federal Chamber of Pychotherapists), titled Psychotherapy in Europe – Disease Management Strategies for Depression - National Concepts of Psychotherapeutic Care (*http://www.bptk.de/fileadmin/user_upload/Themen/PT_in_Europa/20110223_national-concepts-of-psychoth-care.pdf*),

and recent report of the EC by Woelbert

(*http://publications.jrc.ec.europa.eu/repository/bitstream/JRC94870/psychotherapy%20for%20 mental%20illness%20in%20europe.pdf*), the potential of evidence-based psychotherapy is therefore still not being realized in many European countries (Woelbert, 2015). The combination of medication and psychotherapy, understandably recommended in these circumstances, has an even narrower cross section. In suicidal patients, combined pharmacotherapy and psychotherapy is recommended by the European Psychiatric Association (Wasserman et al. 2012).

In sum, access to appropriate, affordable and effective care for depression still remains a problem in many health systems in Europe. The burden that depression places on health systems has not yet been reflected in depression care or management. Improving access to care can improve productivity, cut the overall cost of health services, and result in ameliorated outcomes for other chronic non-communicable diseases (e.g. diabetes, cardiovascular disease, etc.)

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4.8. Prevention and therapy among adolescents

> ***Key messages***
>
> - *Although many school-based programs have been conducted in Europe, few of them are evidence-based*
>
> - *Evidence-based programs suggest that the empowering of gatekeepers, professionals and peer groups are effective methods for tackling crisis, depression and preventing suicide*
>
> - *Evidence-based universal school mental health promoting program, of Youth Aware of Mental Health (YAM) tested on 11,000 students in the Pan-European EU funded RCT within the FP7, SEYLE project showed a reduction of incident suicide attempts and severe suicidal ideation with plans by 50%. This effect is higher than those noted in other successful public health interventions, e.g. bullying (17-23%) or specific school-based interventions addressing smoking cessation (14%)*
>
> - *Evidence-based psychotherapies are effective methods amongst adolescents*
>
> - *Although in some cases antidepressant treatment is associated with higher suicidal risk under the age of 25, antidepressant treatment of depression decreases the overall suicide mortality amongst adolescents. The decrease of antidepressant prescription amongst adolescents and children due to the FDA black box warning was followed by a 14% increase of youth suicide in the USA and 49% in the Netherlands. Antidepressant treatment amongst adolescents must be closely monitored, and the accessibility to other treatments, such as psychotherapy or additional E-health interventions, must be facilitated. However, it has been proven that emerging suicidality during antidepressant treatment is associated with a poor response to treatment and with specific side-effects, such as agitation*
>
> - *cCBT and other E-health interventions may be additional cost-effective tools for tackling suicide and depression*

Suicide among youth is a major public health concern worldwide, as suicide is one of the leading causes of death among teenagers. Prevention efforts have been extensively reviewed previously (Gould et al., 2003); of these, the following prevention strategies are reviewed here briefly: 1. School-based programs; 2. Community-based programs; 3. Healthcare-based programs. It should be noted that the majority of the evidence-based programs were conducted in the USA, however, there are some key examples from Europe as well.

SCHOOL-BASED PROGRAMS

In a recent systematic review, five types of suicide prevention programs adapted from the USA were identified among evidence-based school programs (Katz et al., 2013): 1. Awareness/education curricula; 2. Screening; 3. Gatekeeper training; 4. Peer leadership training; 5. Skills training.

Few programmes performed in school-settings are evidence-based, with the exception of the RCT in EU countries performed on 11,100 adolescents (SEYLE Program, Wasserman et al., 2015).

In Belgium, a suicide prevention program providing psychoeducation was implemented among 172 high school students. The program had no effect on coping styles and hopelessness among high school students, however there was a positive effect on knowledge and an interactional gender-related effect on attitudes was also identified (Portzky, Van Heeringen, 2006).

In a study by Poijula et al., (2001), the relation between crisis intervention and suicide contagion was investigated in three secondary schools after five students committed suicide. Following a suicide attempt, the number of suicides significantly increased if adequate crisis intervention was not available. On the other had no new suicides took place at schools where adequate crisis intervention was conducted by mental health professionals. These results support the importance of proper crisis intervention.

The SEYLE Program

The Saving and Empowering Young Lives in Europe (SEYLE) EU funded FP7 research project was performed to evaluate and compare the effectiveness of different interventions for mental health promotion and suicide prevention among adolescents (Wasserman et al., 2010; Carli et al., 2013). The interventions involved three different preventive approaches designed to empower key actors: mental health professionals, teachers and other school staff as well as the pupils themselves. The interventions were: a) Screening by professionals (ProfScreen) with referral of at-risk pupils; b) Question Persuade and Refer (QPR), a gatekeeper training targeting teachers and other school personnel and; c) Youth Aware of Mental Health (YAM) targeting pupils.

QPR is a manualised gatekeeper programme (www.qprinstitute.com), which was employed to train teachers and other school personnel to recognize risk for suicidal behaviours in pupils as well as to enhance their communication skills in order to motivate and help pupils at risk for suicide to seek professional care. The YAM programme, (www.y-a-m.org) is a programme for 14 – 16 year olds promoting increased knowledge and discussion about mental health including the development of new skills (e.g. problem solving, coping with stress and crisis) and emotional intelligence. YAM offers a hands-on approach to mental health issues such as stress, crisis, depression and suicide allowing the personal experiences of the participants to influence the programme's content and discussion. ProfScreen is a questionnaire-based screening intervention. Once pupils completed the questionnaire, health professionals reviewed their answers, pupils who screened at or above predetermined cut-off points were invited to participate in a professional mental health clinical assessment and subsequently referred to clinical services, if needed.

The three interventions were compared with a control group, which, for ethical reasons, received a minimal intervention similar to YAM. Structured evaluation questionnaires, which contained well-established psychometric scales, demographics and measures of suicidal ideation and behaviour were administered to pupils at baseline, as well as at a 3-month and 12-month follow-ups. A total of 11,110 pupils (mean age: 14.9) were recruited from 168 schools randomly selected in 10 European Union countries: Austria, Estonia, France, Germany, Hungary, Ireland, Italy, Romania, Slovenia and Spain, with Sweden serving as the coordinating centre.

Longitudinal analyses showed significant improvements in adolescent mental health with the YAM Programme compared to the other two interventions and to the control group, by effectively reducing depression, negative emotional symptoms, conduct problems and hyperactivity (SEYLE report, 2012). The most important results were the significant reductions in incident suicide attempts, severe suicidal ideation and suicide plans, which are the utmost consequences of stress and mental health problems (Wasserman D et al., 2015). Thus, if carried out on a large-scale, this approach could be expected to significantly reduce costs for mental health care and the overall burden of disease in Europe. The YAM Programme engendered understanding among pupils, encouraged peer support, and allowed the pupils to get to know each other better, helping them understand that they were not alone with their problems, hence they were more likely to seek help when needed. It was also very well-received and appreciated by the adolescents, who found it to be useful and an inspiring experience (Wasserman C et al., 2012). Materials of the Youth Aware of Mental Health (YAM) are available in 14 languages (Arabic, English, Estonian, French, Gaelic, German, Italian, Hebrew, Hungarian, Romanian, Russian, Slovenian, Spanish and Swedish).

More than 12,000 students from 11 European countries participated in the Saving and Empowering Young Lives in Europe (SEYLE) cooperative program (*http://www.seyle.eu/*).

In the context of the European effort to promote health and prevent risk-taking, violent and suicidal behaviour in youth, the objectives are:

- Gather information on health and well-being in European adolescents

- Perform interventions among adolescents leading to better health trough decreased risk-taking and suicidal behaviours

- Evaluate outcomes of interventions in comparison with an adolescent control group from a multidisciplinary perspective including social, psychological and economical aspects

- Recommend effective culturally adjusted models for promoting the health of adolescents in different European countries

The effects of three different suicide prevention interventions were tested in this multi-centre study: 1. Empowering professionals to screen at-risk students; 2. Empowering teachers and school staff by giving them the tools to recognize students at risk; 3. Empowering students by giving them a wellness manual to gain knowledge on healthy behaviour (Carli et al., 2013). Preliminary data of the project suggested that emergency cases are more common than expected (4-6%), and that there are a great number of students at risk (45-55%). Anxiety, depression, substance use and exposure to media and the Internet were identified as major determinants of suicidal risk (Wasserman, 2013).

WHO recommendations for school-based suicide prevention: the mhGAP programme

The WHO mhGAP Intervention Guide (2010) contains a large number of evidence-based recommendation for diagnosis and treatment of medical conditions that are considered priorities by the WHO, including suicidal behaviour. In the second version of the mhGAP Intervention guide a specific recommendation about school-based suicide prevention was added. After scrutinizing 294 papers identified on major databases of scientific evidence, three school-based interventions were found effective in reducing suicide attempts:

1. The Signs of Suicide (SOS) prevention programme, which includes two approaches to suicide prevention for adolescents into one programme, combining a mental health awareness raising education with self-recognition of depression and other risk factors associated with suicidal behaviour. Students are taught that suicide is not a normal reaction to stress and that it is related to depression or mental illness. Students are also taught how to recognize signs of suicide and depression in themselves and others, as well as the necessary actions to respond to these signs. SOS was evaluated on a sample of 2,100 students in 5 high schools in the US. Students were randomly assigned to intervention and control groups. Self-administered questionnaires were completed by students in both groups approximately 3 months after programme implementation. Significantly lower rates of suicide attempts, as well as greater knowledge and more adaptive attitudes about depression and suicide were observed among students in the intervention group. The modest changes in knowledge and attitudes partially explained the beneficial effects of the programme. The effectiveness of the SOS suicide prevention programme was also evaluated on an expanded sample of 4133 high school students and confirmed a significant effect of the programme in reducing suicide attempts in comparison with the control group.

2. 2 Wilcox et al. (2008) evaluated the effectiveness of the classroom-based preventive intervention The Good Behaviour Game (GBG) in reducing the risk of suicide attempts. The GBG is a classroom, team-based behaviour management strategy that promotes good behaviour by rewarding teams that do not exceed maladaptive behaviour standards as set by the teacher. The goal of the GBG is to create an integrated classroom social system that is supportive of all children being able to learn with less aggressive, disruptive behaviour. The methods involve helping teachers define unacceptable behaviours clearly and to socialize children with regulation of teammate's behaviour through a process

of team contingent reinforcement and mutual self-interest. GBG was tested in an RCT performed on two cohorts of first grade children. In the first cohort, a GBG-associated reduced risk for suicide attempts by age 19-21 years compared to control was observed. In the second cohort, no significant effects of the GBG intervention were observed.

3. The Youth Aware of Mental Health (YAM, www.y-a-m.org) programme evaluated in the SEYLE research project (see previous section on SEYLE), was shown to be effective in reducing incident suicide attempts (OR: 0.45 [0.24 – 0.85]; p=0.0141) and severe suicidal ideation (OR: 0.50 [0.27 – 0.92]; p=0.0250) after 12 months in comparison with the control. YAM includes three components: 1. A booklet given to adolescents with themes covering the topics of Awareness about Mental Health, Self-help advice, Stress and crisis, Depression and suicidal thoughts, Helping a troubled friend, Getting advice (who to contact); 2. Six posters are hung around the classroom with similar information as in the booklet; 3. Five hours interactive group sessions during 4 consecutive weeks, with three role-play workshops at the core, backed by lectures held by trained instructors, as well as guided discussions. In a non-judgmental atmosphere, over the course of four weeks, the adolescents' confidence and knowledge about mental health is boosted.

On the basis of the current evidence concerning school-based suicide prevention programs, the WHO concluded that Mental Health Awareness programmes that include skills training (e.g. problem solving, coping with stress) are effective in reducing suicide attempts. Also, the WHO recommended that the implementation of preventive programmes, which include mental health awareness training and skills training, should be considered in the school setting for all adolescent students

Mind Yourself (Ireland)

Mind yourself is a two part workshop, targeted at adolescents aged 15-17. It aims to promote positive mental health through the use of Cognitive Behavioural Therapy, encouraging students to adopt a more positive mentality. The project also aims to encourage and facilitate students to seek help if they experience mental health problem by highlighting the available resources. A pilot study was conducted by the National Suicide Research Foundation to investigate the feasibility and effectiveness of the Mind Yourself workshop in terms of improved coping and resilience for participants. The design of the study was a randomised pre and post between subjects group study, with an experimental and control group including adolescents aged 15-17 years. The final sample comprised 392 participants of which 141 had completed the Mind Yourself programme and 251 were in the control schools. The overall response rate at follow-up was 85.2%. Comparing baseline and follow-up, significant positive changes were observed on 2 of the 8 problem solving strategies for the Mind Yourself intervention group, whereas no significant positive changes were observed among those in the control schools. At follow-up, a significantly higher proportion of adolescents who had received the Mind Yourself programme indicated that they would talk to someone and try not to think about what is worrying them when they were worried or upset. For both male and female adolescents, emotional resilience had increased following participation in the Mind Yourself programme. This effect was only significant for the male adolescents. In line with the problem solving outcomes, the rate of change between baseline and follow-up was greater among adolescents who had received the Mind Yourself programme compared to those who had not. Changes in levels of self-esteem and depression did not significantly differentiate adolescents who participated in the Mind Yourself Programme from those in the control schools. However, the greatest reduction was observed in boys who had received the Mind Yourself programme. (all information taken from the draft report of Mind Yourself, 2010).

PSYCHOTHERAPY FOR ADOLESCENTS

In England 162 deliberate self-poisoners were randomly allocated to routine care or routine care plus the intervention (home-based family intervention). The intervention targeted family conflict, parental distress, adolescent suicidality and hopelessness. There were no significant differences in the primary

outcomes between the intervention and control groups. Parents in the intervention group were more satisfied with treatment. A subgroup without major depression had much less suicidal ideation at both outcome assessments (p < .01) compared with controls. The home-based family intervention resulted in reduced suicidal ideation only for patients without major depression (Harrington et al., 1998).

In the United States the combination of cognitive behavioural therapy and medication produced a robust reduction in suicidal events (March et al., 2004), yet a European study by Goodyer et al. (2007), did not confirm the protective effects of the combined therapy. In Goodyer's study 208 moderate to severe depressed adolescents (aged 11-17) with suicidality or conduct disorder were included in this study, 103 of them received and SSRI and routine care, and 105 received SSRI, routine care and CBT. In this project no protective effect of CBT on suicidal thinking or action was found.

A study in England investigated the role of post-hospital care of adolescent suicide attempters. 105 patients were randomized to either (1) a treatment group receiving standard management plus a token allowing re-admission to hospital on demand; or (2) a control group receiving standard management only. Of those with open access, 6% reattempted suicide versus 12% of those with usual care. Although the differences between the groups did not reach the level of statistical significance, the results do suggest lower rates of repeated suicide attempts in the group that received the token, even if it was not used (Cotgrove et al., 1995).

PHARMACOTHERAPY FOR ADOLESCENTS

In 2003 and 2004, U.S. and European regulators issued public health warnings (FDA Black Box Warning) about a possible association between antidepressants and suicidal thinking and behaviour. In a study, the authors examined USA and Dutch data on prescription rates for selective serotonin reuptake inhibitors (SSRIs) from 2003 to 2005 in children and adolescents (patients up to age 19), as well as suicide rates for children and adolescents. SSRI prescriptions for youth decreased in both countries by approximately 22% after the warnings were issued. The youth suicide rate increased by 14% in the USA and by 49% in the Netherlands and showed a significant inverse association with SSRI prescriptions in both countries (Gibbons et al., 2007). Similar findings have been reported from Canada (Katz et al., 2008) and from Sweden (Isaccson and Ahlner, 2014). A recent study also showed that in the 11 health plans in the U.S. Mental Health Research Network, FDA safety warnings about antidepressants resulted in a decrease in antidepressant use and a simultaneous increase in suicide attempts among children, adolescents and young adults (Lu et al., 2014)

COMPUTERIZED THERAPY/E-HEALTH INTERVENTIONS FOR ADOLESCENTS

The Suicide Prevention through Internet and Media Based Mental Health Promotion (SUPREME) Project (*http://www.supreme-project.org/*) was a multi-centre study undertaken by seven European countries between 2010 and 2013. The SUPREME project aimed to develop, implement and evaluate an Internet- and media-based, multi-language, culturally adapted, peer-facilitated mental health promotion and Suicide Prevention intervention programme. The project was comprised of a highly interactive website targeted at adolescents and young adults in the age group 14-24 years, and a set of published guidelines, aimed at Media that targets young audiences, such as newspapers and magazines and at stakeholders with the intention of delivering internet based suicide prevention programs.

The aims and objectives of the SUPREME Project were as follows:

- Development of a culturally adjusted model for mental health promotion on the Internet

- To map and produce an exhaustive list of existing resources on the Internet, in Scientific Journals and in the general media, which promote mental health and prevent suicide

- Implementation of an Internet based mental health promotion and suicide prevention intervention

- Development of guidelines for best practices in Internet and media-based mental health promotion and suicide prevention

- Developing partnerships for action: ensuring sustainability and future actions through connections with other organisations

The work performed to achieve these objectives involved collaboration between seven European partners with a high level of academic and clinical expertise within the field of adolescent mental health and suicide prevention. Partners were situated in Estonia (ERSI), Hungary (VAGLE), Italy (UNIMOL), Lithuania (VU), Spain (PsMAR), Sweden (NASP) and the United Kingdom (ANGLIA). The project was coordinated by the Swedish National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP); however all core work package activities, including interventions, were conducted in all participating countries. All intervention and data collection materials, as well as other core materials such as guidelines and research protocols, were translated into all official languages of the participating countries (including Catalan). Translation and adaptation followed a detailed methodological protocol that included back-translation and review. Moreover, throughout the project, efforts were made to expand the partnership to include other organizations and projects with objectives similar to that of SUPREME. Such were identified and contacted with the aim of increasing the user-targeted impact of the project, to effectively disseminate information, improve scientific methods and guidelines, and to ensure sustainability in future public health actions. Potential partners in each country were identified and contacted, which resulted the successful inclusion of 32 additional partners.

The contents of the web-based intervention were founded on scientific evidence gathered from literature reviews, and other systematically collected expert recommendations and from the YAM intervention. Information from adolescent focus groups interviews was used to aid in the design and structure of the website. The intervention finally comprised a highly interactive website targeted at adolescents and young adults in the age group 14-24. The website offered users access to interactive services such as a real-time chat communication and a discussion forum moderated by mental health professionals, as well as written information addressing various mental health problems. The written content aimed to raise knowledge and awareness about mental health and suicide, combat stigma, and to stimulate helping and help-seeking behaviours. The effectiveness of the intervention website was tested in a randomized, single-blind, minimal treatment-controlled, parallel, multi- centre trial conducted in all SUPREME consortium member countries. The study was approved by an ethics committee in all participating countries and was registered in ISRCTN Current Controlled Trials (trial registration number: ISRCTN65120704). Pupils, 14-18 years old, were recruited from public schools in each country, resulting in a total sample of 2286 consenting participants. Study subjects participated in three waves of data collection that took place during school-based sessions carried out at baseline and at 2 and 4 months follow-up. Longitudinal analyses of the effectiveness of the intervention website suggested a statistically significant decline in nearly all mental health related outcomes in the total sample (all p-values < 0.01 or < 0.001), and a non-significant trend suggestive of the efficacy of the full interventions in comparison with control. The observed, unexpectedly strong, effect of the minimal intervention performed in all study arms, may partially account for these results.

The SUPREME project has generated and documented considerable evidence supporting the effectiveness of internet-based adolescent mental health promotion and suicide prevention. As confirmed by the evaluation study, the vast majority of European adolescents spend substantial time on the Internet every day, where mental health related information is indeed sought. This provides a unique opportunity to offer targeted mental health promoting services, such as the intervention website developed by SUPREME. On the basis of the work performed within the project, guidelines have been developed for the best practices in the field of internet mental health promotion interventions for adolescents. They primarily target stakeholders with an interest in developing such strategies, and include recommendations concerning various aspects of the content and implementation of internet-based interventions. The guidelines also consider the role of traditional media in mental health promotion, such as existing

prevention strategies, media broadcasters' rules, guidelines and regulations on suicide prevention, and the scientific evaluation of such resources.

Within the SUPREME project the effectiveness of the website was evaluated in a randomized controlled trial. In the participating countries schools were randomly selected where over 2100 students between 14 and 16 took part. Depression, anxiety, stress, suicidal thoughts and ideation levels significantly decreased after both 2 and 4 months follow-up among all participants. The report on best practices of the project can be accessed here: *http://www.supreme-project.org/deliverables/report_best_practices.pdf.*

cCBT for adolescents

Online therapy is a growing area and this is of particular relevance to young people. In the United Kingdom a randomized controlled trial investigated the efficacy of computerized cognitive behavioural therapy (cCBT) for depressed patients (Proudfoot et al., 2004). The package consisted of 8 therapy sessions with homework, customised to the patient's special needs. The CBT improved depression, negative attributional style, work and also social adjustment.

PratenOnline

In a Dutch study individual chat treatment (PratenOnline) was offered to 131 young depressed individuals (age 12 - 22). The treatment was based on Solution-Focused Brief Therapy. At 9 weeks and 4.5 months follow-up the intervention group showed a significantly greater improvement in depressive symptoms than the control group (n=132) (28.2% vs. 11.4% P<.001) (Kramer et al., 2014).

iFightDepression

Within the EU Health Programme, the European Alliance Against Depression (EAAD) in the framework of PREDI-Nu program (Preventing Depression and Improving Awareness through Networking in the EU) developed an internet-based guide self-management tool for adolescents and young adults with mild to moderate depression (Arensman et al., 2015). Based upon the previous EAAD and OSPI activities (discussed in more detail elsewhere in this paper) multi-faceted content was created in nine languages, which raises the awareness of depression and suicidality and also offers guided self-management based on computerised cognitive behaviour therapy (iFightDepression, *https://ifightdepression.com/en/*). A comprehensive training program was also developed to increase awareness of depression among professionals and gatekeepers, as well as for the better implementation of iFigthDepression. PREDI-NU further aims to strengthen multidisciplinary networks for improving the identification and adequate treatment referral of depression. The results of the project are currently under publication.

In sum, although many school-based programs have been conducted in Europe, few of them are evidence-based. The empowerment of gatekeepers, professionals and peer groups are effective methods for tackling crisis, depression and preventing suicide. Some school mental health promotion programs showed a reduction of incident suicide attempts and severe suicidal ideation and this effect is higher than those noted in other successful public health interventions. Evidence-based psychotherapies are also effective methods amongst adolescents. Although antidepressant treatment is associated with higher suicidal risk in some cases under the age of 25, antidepressant treatment of depression decreases the overall suicide mortality amongst adolescents. Therefore antidepressant treatment in younger age groups should be closely monitored, and the accessibility to other treatments, such as psychotherapy or additional E-health interventions, must be facilitated. Evidence-based e-mental health interventions may have a strong future potential for tackling depression and suicide among all age groups, but particularly among adolescents.

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4.9. Prevention and therapy among the elderly

Key messages

- *Even though suicide rates among the elderly are the highest amid vulnerable groups, evidence-based programs are limited*

- *Telephone counselling and support decreases suicide risk*

- *Limited information is available concerning the benefits of comprehensive management of common chronic disorders and depression among the elderly. Increased awareness of depression in specialized treatment and nursing services may improve the identification and adequate treatment referral of depression*

- *Conceptualizing depression as a general medical responsibility (e.g. hypertension and high cholesterol level) may help more clients receive appropriate treatment. This may also have the additional benefit of destigmatisation*

- *E-health solutions are another unexploited possibility for tackling depression and suicide amongst the elderly, as the development of these tools commonly targets young people*

Even though suicide rates among the elderly are the highest amid vulnerable groups, evidence-based programs are limited (Lapierre et al., 2011). In a systematic review, Lapierre et al. (2011) identified five main strategies for preventing suicide among older people: 1. Primary care interventions; 2. Community based outreach; 3. Telephone counselling; 4. Clinical treatment; and 5. Programs focusing on improving resilience.

Evidence-based prevention programs in the different intervention areas were conducted mostly out of Europe (USA, Canada and Japan).

Telephone counselling service was successfully implemented in Northern-Italy (De Leo et al., 2002), providing a 24h emergency alarm service for elders to call for help, and a twice-weekly telephone support. The long term impact on suicide rates was evaluated by the researchers with the comparison of 18641 service users and the general population. After 11 years the number of suicide among service users was significantly lower than expected (nOBSERVED=6, nEXPECTED=20.86;, P<0.001). The service performed well for elderly females (nOBSERVED=2, nEXPECTED=12.03, p<0.001). Reductions in depression scores and hospital admissions were indicators of positive outcomes in psychosocial functioning.

Limited information is available concerning the benefits of comprehensive management of common chronic disorders and depression among the elderly. Increased awareness of depression in specialized treatment and nursing services may improve the identification and adequate treatment referral of depression. Due to the fact that depression is very frequent and increases the mortality and morbidity of other disorders, identifying depression (as with identifying hypertension and high cholesterol) and helping clients to receive appropriate treatment should be considered a general duty of all health care professionals.

E-health solutions are another unexploited possibility for tackling depression and suicide amongst elderly, as the development of these tools commonly targets young people.

In sum, despite the fact that elderly people frequently encounter different health care professional in various sites of different health services, suicide rates among the elderly are the highest amid vulnerable groups. This discrepancy and the fact of limited number of evidence-based suicide prevention programs amongst elderly highlight an important unmet need in suicide prevention, and emerge imperatives in public health as well. These imperatives could be summarized in the following points:

1. There is a necessity for the development and research of suicide prevention programs targeting elderly population.

2. A comprehensive management of the mental and physical state of elderly people is needed. Depression (and in a broader extent, mental status) not only a significant background factor of suicide but also increases morbidity of other disorders, and therefore increases overall mortality. Detection of depression or simply the feeling of hopelessness and desperation among elderly users ought to be a general duty of health and social care professionals in all services of medicine and social care (as with detecting e.g. hypertension, high cholesterol or common age-related physical problems). This comprehensive management do not only lead to the better management of age-related depression and suicide but may also have the additional benefit of destigmatisation.

3. As we mentioned before E-health solutions are another unexploited possibility for tackling depression and suicide amongst elderly. E-tools are often developed and designed for younger users, nevertheless the use of Internet shows increasing tendency in the elderly population as well.

4. Preventing the isolation and social exclusion of the elderly people may not only prevent suicides, but also could build up more socially connected and supportive communities

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4.10. Follow up care of suicide attempters

> **Key messages**
>
> - *Most of the programs support that outreach is an effective method for reducing repetition rate in suicide attempts, even minimal follow-up could be beneficial*
>
> - *SUPRE-MISS intervention is inexpensive and effective*
>
> - *Chain-of-care programs and increased accessibility to mental health services in general could clearly be recommended as effective methods for preventing relapses of depression and the repetition of suicide attempts.*

The chance of repetition after an attempted suicide is very high. A Norwegian study included all hospitalized suicide attempters (n = 1,031) and all completed (n = 161) between the years of 1984 and 1995. After follow-up care, the parasuicide rate decreased from 170 per 100,000 in 1984 to 79 per 100,000 in 1995 (53.5%). Regions with chain-of-care programs have lower drop-out rates and fewer repetition rates (Dieserud et al., 2000).

In Norway, between 2005 and 2007, the OPAC (Outreach, Problem solving, Adherence, Continuity) Program was offered to all attempters without a major psychiatric disorder (Hvid et al., 2011). Out of the 133 participants, 69 were randomized to the intervention. After one year, significantly fewer patients repeated a suicide attempt (8.7%) in the intervention group than in the control group (21.9%), and the number of repetitive acts was also considerably lower (8 vs. 22).

In a Swedish study, no significant differences were found in the rate of reattempted suicides between the intervention and control groups. In this study, one month after their suicide attempt, 216 patients were randomised to either two telephone interventions in addition to treatment as usual, or no such intervention during the subsequent year. At follow-up treatment attendance was high and did not differ between the randomised groups (Cederke et al., 2002).

After non-fatal deliberate self-harm (DSH), rapid, easy access to on-call trainee psychiatrists was offered. After one year there was a significant reduction of actual or seriously threatened DSH in the experimental group, whom also made considerably less demands on medical and psychiatric services, when compared with controls (Morgan et al., 1993). These results suggest that minimal follow up can be beneficial.

When following-up suicide attempters, the results of the WHO SUPRE-MISS brief intervention (BIC) show that focusing on suicide attempters by providing psychosocial counselling and supportive ongoing contact can significantly reduce mortality due to suicide (Fleischmann et al., 2008). One of the main advantages of BIC is that it requires little training, as opposed to the high-skill training that is characteristic of more sophisticated psychotherapeutic treatment, such as cognitive-behavioural therapy. Given its low cost, it can be carried out with very modest resources of space, equipment and personnel. This makes it suitable for extensive application in low- and middle-income countries.

In sum, strong evidence supports that previous suicidal attempts predict the subsequent risk of suicide; therefore follow-up care is crucial to prevent another attempt from occurring in the future. Follow up care aims to treat comorbid mental health problems, increase emotional resilience and foster problem solving skills.

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4.11. Low threshold crisis intervention helplines

Key messages

- *Studies analysing the efficacy of hotline services show mixed results, however, the differences are partly explained by methodological differences*

- *Many best practices could act as a model program in Europe. There is no doubt that hotline services and crisis helplines could be beneficial for promoting the utilization of mental health care services and reducing suicide, provided they are linked to a chain-of-care or to the universal, population-oriented and school-based programmes*

- *Recent rapid technological development in IT expands the possibilities (and probably the efficacy) of these kinds of services. Therefore, it is important to focus on the advancement and activity of crisis helplines, with particular emphasis on accessibility and cost-effectiveness*

- *The increased utilization of helplines is part of the European Union's digital agenda; the use of 116 123 should be promoted in every Member State*

Since suicidal behaviour is often associated with a crisis, helplines are ubiquitous sources of help worldwide (Gould and Kalafat, 2009). The main aim of these services is to reduce the harmful outcome for callers by easing their current crisis and suicidal states. Lester suggested indirect ways of providing evidence to support the utility of these services as it is very difficult to evaluate their effectiveness (Lester, 2011). In his meta-analysis Lester (1997a) found a significant overall preventive effect.

In an early British study, Bagley (1968) found that the Samaritans had a significant preventive effect on suicide rate (*http://www.samaritans.org/*). This independent national organization aims to provide confidential non- directive listening service to people in trouble. In a controlled study Barraclough et al. (1977) did not confirm this positive effect. In a study by Riehl et al. (1988) involving 25 German cities, hotlines proved to have no significant effects on suicide. Lester (1997b) found correlation between the number of suicide prevention centres and the number of suicide between 1952 and 1985 for England and Wales (r = -.90), and tendency for Northern Ireland (1960-1975, r= -.40) as well. A study of Scottish suicide rates from 1958 to 1981 showed no evidence for the preventive effect of a growing number of Samaritan centres (Lester, 2005). However, these data are rather outdated, since in the last decade telephone hotline services has produced a rapid development both on technology and the excellence and quality control of counselling skills. Many of them as the Samaritans, the Livslinien in Denmark, (*http://www.livslinien.dk/*), and the LESZ in Hungary (*http://www.sos-116-123.eoldal. hu/*) and the International Federation of Telephone Emergency Services (IFOTES, *http://www.ifotes. org/*) have become best practices. These organisations fill an essential niche in suicide prevention and could, on the one hand, act as a model program to other Member States, and on the other, furnish them with qualitative evaluations of the components of the intervention. There is no doubt that hotline services and crisis helplines are beneficial for promoting the utilization of mental health care services and reducing suicide, provided they are linked to a chain-of-care. The recent rapid technological development in IT expands the possibilities (and probably the efficacy) of these kinds of services. Therefore, it is important to focus on the advancement and activity of crisis helplines, with particular emphasis on accessibility and cost-effectiveness. Furthermore, it is important to note that more up-to-date research is needed for demonstrating their efficacy. The increased utilization of helplines is part of the digital agenda of the European Union, and the use of the 116 123 hotline number should be promoted in every Member State.

In sum, the provision of contact details of telephone helplines with appropriate media communication seems very effective for decreasing the number of suicides. Its potential is esteemed to increase with the rapid technical development of IT sector, so the increased utilization of helplines should be promoted in Europe.

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4.12. Multi-level community-based programs

> ### *Key messages*
>
> - *Multilevel programs incorporate the effective tools of prevention and therapy in a comprehensive model of care, exploit the synergy between them, thereby increasing their efficacy*
>
> - *Training and accessibility, as key essential elements of any effective intervention, have specific emphasis*
>
> - *The multilevel approach exploits the communities' own resources, and tailors the evidence-based tools to the specific needs and possibilities of the community*
>
> - *The multilevel approach has a strong adaptive potential for incorporating any advances in prevention and therapy*
>
> - *The multilevel approach increases the level of awareness and collaboration, therefore facilitates the building of more socially connected communities*
>
> - *Even though few outcomes of multilevel interventions have been reported thus far, it is important to further test which components are tackling depression and suicide, as they have already been implemented in many European regions within the framework of various European projects (European Alliance Against Depression, MONSUE, EUREGENAS, etc.*

Multilevel and multifaceted interventions simultaneously tackle factors associated with depression and suicidality, while incorporating almost all effective prevention and therapy tools in a comprehensive model of care. Their effect may be stronger due to the synergy between the different interventions (Hegerl et al., 2009a). In a review article, best practice elements of multilevel suicide prevention strategies were identified as follows:

- **Training general practitioners** (GPs) to recognize and treat depression and suicidality

- Improving **accessibility of care** for at-risk people

- **Restricting access** to means of suicide

Although no outcomes were reported for multilevel interventions or for synergistic effects of multiple interventions applied together, indirect support was found for possible synergies in particular combinations of interventions within multilevel strategies (Feltz-Cornelis et al., 2011)

DEFEAT DEPRESSION CAMPAIGN

Many of the intervention programs address only one or two suicide-related aspects. The Defeat Depression Campaign was implemented in the UK between 1992-1996 (Paykel et al., 1998); the campaign aimed to improve attitudes towards, and the recognition of, depression on a national basis. The problem was addressed on two levels: GPs were trained and offered support in diagnosis and treatment of depression. In addition, the general public was educated about depression through videos, flyers and a media campaign. Over the years of the campaign, suicide rates had fallen from 7.71/100.000 to 6.89/100.000, however, the reduction cannot be solely attributed to the campaign. During the programme, a noticeable improvement in awareness for depressive disorders, and knowledge about neurobiological factors involved could be observed. An increased number in prescription rates of antidepressants were noted: from 7 million to about 15 million (Paykel, 2001).

CHOOSE LIFE

In Scotland, a two-phase prevention plan was implemented in 2002. The "Choose Life" program aimed to improve early prevention and crisis response, engagement with the media, and the adoption of an evidence-based approach (Mackenzie et al., 2007). The programme was based on seven key objectives: early prevention and intervention; responding to immediate crisis; improving support for hope and recovery; providing support to those who are affected by suicidal behaviour or a completed suicide; awareness-raising and encouraging people to seek help early; supporting the media in the reporting of suicide; and knowing what works. In the first year of implementation a decrease in male suicide rates (34.1/100.000 to 29.1/100.000) occurred (MacKenzie et al., 2007), which may also be due to other influencing factors such as restricting sales of paracetamol. The campaign effectively raised the suicide awareness of a substantial proportion of those targeted, but with regional variations. It also affected the attitudes and behaviour of those who were highly aware. However, men and women engaged somewhat differently with the campaign. The sports and leisure settings approach was effective in reaching younger men (Robinson et al., 2014).

NUREMBERG ALLIANCE AGAINST DEPRESSION

During an intense four-level community-based intervention program conducted in Nuremberg in 2001 and 2002 (Nuremberg Alliance Against Depression), the number of suicidal acts (main outcome completed + attempted suicides) had dropped significantly (-24%), while the rate remained stable in the control region (Wuerzburg).

The multilevel approach comprises the following four levels:

1. **Co-operation with general practitioners and paediatricians GPs** and paediatricians were invited to educational workshops on how to recognize and treat depression as well as explore suicidal tendency in the primary care setting. Information materials (e.g. video tapes) were distributed to GP´s whom can hand them out to their patients.

2. **Public Awareness Campaign** The broad public were addressed by large-scaled public awareness campaigns including posters, cinema spots, information leaflets, brochures, public events and Internet homepages. The aim was to improve knowledge about adequate treatments of depression and to reduce the stigmatization of the topic "depression" as well as the affected individuals.

3. **Offers for high risk groups and self-help activities** "Emergency Cards" were handed out to high risk groups (primairly young people in adolescent crisis and persons after suicide attempt) guaranteeing direct access to professional help in a suicidal crisis. Initiatives were taken to found regional self-help groups and support them with expert advice. Partnerships with patient associations were established and intensified.

4. **Training sessions for community facilitators** Educational workshops were provided to various target groups playing an important role in disseminating knowledge about depressive disorders (e.g. health care professionals, priests, counsellors, police). Particular emphasis was put e.g. on special offers for parents, youth workers and teachers for example in order to reach children and adolescents suffering from depression, deliberate self-harm and suicidal behaviour (e.g. information sessions and prevention programs in schools). A close co-operation with the media took place to strengthen the public discussion. Special guidelines on media coverage of suicidal tendency were distributed to prevent imitative suicides.

To assess the sustainability of the intervention effects the number of suicidal acts was assessed at 1-year follow-up. The reduction in suicidal acts compared to baseline (2000 vs. 2003: -32.4%) was significantly larger than that in the control region (P = 0.0065) (Hegerl et al., 2006). The reduction was even larger than that of the intervention years (2001, 2002). Thus, 1 year after the end of the main intervention, preventive effects on suicidality of the NAD remained stable. A strong reduction (-47%) of the five

high-risk suicidal methods was observable (jumping from a high place, hanging, firearm, drowning, being run over). After the implementation of a 14-item media guide containing recommendation for accurate and helpful media reports of suicide, more help-seeking information was provided in the local newspapers. Antidepressants prescription by neurologists increased significantly (+25% in 2001, +41% in 2002) compared to other regions (Hegerl et al., 2009b).

A public campaign was launched in 2000 as part of the intervention. For the general population, the campaign was successful in creating awareness for the NAD. For persons who reported experience with depression and persons aware of the NAD, analyses showed positive desirable effects: more awareness of depression and the NAD. In addition, among those aware, more positive attitudes towards medication treatment and antidepressants developed and also 'lack of self-discipline' declined as causal explanation as did the notion 'pull yourself together' as treatment option. The campaign induced relevant changes mainly in persons aware of the NAD and persons who reported to have had experience with depression (Dietrich et al., 2009). NAD is presently implemented in many European regions (Hegerl et al., 2010). In Germany under the umbrella of the German Alliance Against Depression there are around 40 regions that initiated their own intervention programmes.

EUROPEAN ALLIANCE AGAINST DEPRESSION

Based on the experiences from the model region "Nuremberg Alliance against Depression", the European Alliance Against Depression (*http://www.eaad.net/*) was established in 2004, financed by the European Commission (Executive Agency for Health and Consumers (EAHC)), with the aim of spreading and implementing this successful approach in 17 other European regions and countries (Hegerl et al., 2008; Hegerl et al., 2009b). Today there are nearly 100 regional networks Europe-wide. The EAAD project uses a bottom-up approach: it starts from a regional model project and moves toward a national expansion of activities.

One of the most significant effects was found in Hungary after the EAAD intervention. For the duration of the programme and the follow-up year, suicide rates in the intervention region (Szolnok) were significantly lower than the average of the previous three years (p = .0076). Thus suicide rate went down from 30.1 per 100,000 in 2004 to 13.2 in 2005 (−56.1%), 14.6 in 2006 (−51.4%) and 12.0 in 2007 (−60.1%). This decrease of annual suicide rates in Szolnok after the onset of the intervention was significantly stronger than that observed in the whole country (p = .017) and in the control region (p = .0015). Men had the same decrease in suicide rates as women. As secondary outcome, an increase of emergency calls to the hotline service (200%) and outpatient visits at the local mental health services (76%) was found (Székely et al., 2013). At the WHO European Ministerial Conference on Mental Health in Helsinki in 2005, the European Commission presented the EAAD project as one of the most promising strategies in the area of mental health and named it as a best practice example for improving mental health in Europe through community-based intervention.

OSPI PROJECT

Based on the EAAD concept, the European research project "Optimised suicide prevention programmes and their implementation in Europe" commenced in 2008, with the aim of optimising and evaluating community-based suicide prevention programmes in European countries (Hegerl et al., 2009c). The EAAD model is enhanced by other evidence-based interventions and implemented simultaneously and in standardised way in four regions in Ireland, Portugal, Hungary and Germany.

The advisory group found a key mechanism that had a substantial impact on the ease of implementation of OSPI interventions, particularly on their ability to recruit to training interventions. In order to maximise the potential of high level 'gatekeepers', it is necessary to first transform them into OSPI stakeholders. Motivations for OSPI stakeholders included: personal affinity with the shared goals and target groups; the complementary and participatory nature of OSPI that adds value to pre-existing

suicide prevention initiatives; and reciprocal reward for participants through access to the extended network capacity that organisations could accrue for themselves and their organisations from participation in OSPI (Harris et al., 2013).

OTHER SIGNIFICANT PROJECTS IN THE FIELD OF DEPRESSION AND SUICIDE PREVENTION

MONSUE

The MONSUE project (Monitoring Suicidal Behaviour in Europe) was a European multicentre study on suicidal behaviour and prevention (*https://kiedit.ki.se/sites/default/files/final_report_monsue.pdf*). MONSUE was an extensive research project, carried out within 15 EU countries and 8 countries within the EUROPEAN region of the WHO. The project was based on the experiences of the WHO/EURO Multicentre Study on Suicidal Behaviour (Schmidtke et al., 2004) and was co-operating with the WHO/EURO Network on Suicide Research and Prevention. With a continuous monitoring of suicides and attempted suicide the main aim of this research project was to identify suicide trends and high risk groups as well as protective factors and the effects of preventive measures.

Main goals of the MONSUE project were:

1. Putting mechanisms in place for a systematic and homogeneous data collecting procedure on the base of a common monitoring form for the assessment of suicide attempts;

2. Comparison of suicide data, i.e. on completed suicides in relation to attempted suicides as well as their changes over time;

3. Evaluation and assessment of the main suicide and suicide attempt methods in Europe;

4. Assessment of restriction of methods, access to "hot spots" and preventive measures for specific groups at risk;

5. Detection of indicators for suicidal behaviour;

6. Development of a proposal for an action plan for suicide prevention in Europe

Each of the participating countries conducted a national survey on suicide rates and methods as well as suicide prevention strategies. The final report of the project can be downloaded: *https://kiedit.ki.se/sites/default/files/final_report_monsue.pdf*.

EUREGENAS

Euregenas (European Regions Enforcing Actions Against Suicide) (*http://www.euregenas.eu/*) was a three years project, funded by the European Union under the Public Health Programme between 2008 and 2013. The overall objective of the EUREGENAS project was to contribute to the prevention of suicidality in Europe through the development and implementation of strategies for suicide prevention at regional level that can be of use to the European Community as examples of good practice. 15 partners with different experiences in suicide prevention were involved. The specific objectives were to:

- Identify and catalogue good practices of existing actions and strategies on suicide prevention

- Carry out a stakeholders' needs analysis

- Develop and disseminate guidelines and toolkits on suicide prevention and awareness raising strategies

- Develop the technical specifications for an integrated model for e-mental healthcare oriented at suicide prevention

- Improve knowledge and capabilities among local and regional professionals (i.e. psychologists, psychiatrists, GPs)

The core work packages were the follows:

1. On-line library and assessment of needs

2. Development of E-conceptual model

3. Development of prevention guidelines and toolkits

4. Development and piloting of training module

5. Increasing visibility and promoting accessibility to survivor support groups

All the materials and guidelines are available and can be downloaded from the project website (www.euregenas.eu).

In sum, multi level programs for tackling depression and suicide deliver a comprehensive toolkit of various evidence-based methods, increase the availability and access to care, and exploit these synergic effects. Focusing to active elements and cost-effectiveness could produce a further increase of its potential.

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4.13. Some examples of national suicide prevention activities in European countries

> **Key messages**
>
> - On national level, many best practices have already been implemented in some European countries
>
> - These programs could serve as model programs for other countries and communities with similar resources and cultural backgrounds

The collection of the following examples of national activities is not exhaustive. These are selected on the basis of visibility, extensiveness, sustainability and scientific background, however could not represent all best European national practices on the field. They could serve as model programs for other European activities.

Estonia

National policy

With the economic support of the Stockholm County Council and the Swedish Eastern European Committee, the Estonian-Swedish Institute of Suicidology (ERSI) was established in 1993. In 2001, ERSI was asked to develop a national suicide prevention action plan with contribution from the Swedish National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP), and a chapter on suicide prevention was also incorporated in accordance with political decisions on National Mental Health Policy. Many international conferences, as well as workshops on suicidology and suicide prevention, were held in Tallinn (Värnik and Wasserman, 2009).

Preventive measures

ERSI has been educating physicians, nurses, psychologists, social workers, schoolteachers, and police officers as well as future educators in train-the-trainers courses leading to certification. Besides training trainers in Estonia, ERSI in collaboration with the Swedish Eastern European Committee also trains Russian psychiatrists from St Petersburg and Kaliningrad in the 'Suicidology and Reforms in Psychiatry' project, who in return are requested to organise primary and secondary preventions courses in their districts. ERSI also provides courses in suicidology and interventions during suicidal crisis to university students. ERSI is involved in both graduate and post-graduate education in the field of suicidology.

ERSI established the Estonian 'Lifeline' in 1995, which by now functions as a crisis centre. ERSI trains volunteers to work in different emergency crisis services. ERSI also provides consultations on special suicide cases for medical staff and other specialists, e.g. concerning YAM (Youth Aware of Mental Health) program on an ad hoc basis.

ERSI has spread knowledge about suicidology among the Estonian authorities, specialists and the public Suicide awareness measures are continuously taking place in the country. Between 1995 and 2005 the suicide rate decreased from 41 to 19/100.000 and it was 16 in 2011.

Finland

National policy

In 1986, the minister of Social Affairs and Health launched a national suicide-prevention programme whose aim was to reverse the increasing trend of suicide mortality and to decrease the suicide rate by 20 percent within the subsequent ten years (Upanne et al., 1999). The programme was a part of the Finnish national strategy of the WHO's "Health for All by the Year 2000" action plan (Ministry of Social Affairs and Health, 1987). In 2001, the Finnish government developed a new public health policy called

the "Governmental Resolution on the Health 2015 Public Program" (Ministry of Social Affairs and Health, 2001). This programme targeted younger generations and was developed to reduce accidental and violent death among young adult men by one-third of the level exhibited during the late 1990s.

Preventive measures

The national suicide prevention programme launched in 1986 was based on a novel concept. Around 250 physicians, psychologists, social workers, and nurses specializing in psychiatry were trained for interviewing relatives, the next of kin, and treating personnel. They were asked to collect data on every suicide case. Every suicide case was then shared with the 15 provincial project groups in Finland, including representatives of the police, medical and legal experts, primary health care and social services, as well as psychiatric services. Every case report ended with specific recommendations for suicide prevention, based on the findings from each individual case (Lönnqvist, 1988). In addition, longitudinal and cross-sectional epidemiological studies on suicide mortality were launched together with media events such as local public meetings, lectures and public awareness campaigns.

France

National policy

Following the launch of the first national suicide prevention programme in 1998 and the WHO worldwide SUPRE suicide prevention "Live your Life" initiative in 1999 (World Health Organization 1999), France introduced the National Strategy for Suicide Prevention (2000-2005) in September 2000 (Ministre délégué de la Santé, 2001).

Primary preventive measures

Regional "train the trainers" programmes were launched, organized by psychiatrists and psychologists for people interested or involved in suicide prevention. Over the last 10 years, focus has been placed on adolescents. Specific trainings have been conducted on site for school staff, doctors, and nurses. Today, it is a requirement to assess all adolescents' and teenagers' mental health, and observe any changes in their behaviour or appearance. Referral to a specialist can be organised within the care network.

Secondary preventive measures

Following a consensus conference in October 2000 on suicide crisis organised by the French Federation of Psychiatry in partnership with ANAES (Agence Nationale d'Accreditation et d'Evaulation de la Santé), a model to diagnose and better manage suicidal people was developed including children and adolescents (FFP, 1998). Recently, the French government has established an observatory for suicide prevention.

Germany

National policy

In 2002, the German Association for Suicide Prevention (DGS) initiated the "Nationales Suizidpräventionsprogramm" (NaSPro), which has been embraced by a large number of stakeholders in the country chaired by Professor Armin Schmidtke (Etzersdorfer, 2009).

Preventive measures

There is a wide spectrum of preventive initiatives, such as telephone services, crisis intervention centres, and inpatient facilities, as well as numerous institutions, which help deliver services. In line with the multicausal nature of suicide, the stakeholders include scientists, physicians, psychologists, political, religious and other organisations (more than 80) that might contribute to successful suicide prevention. NaSPro's projects are overseen by an independent scientific board consisting of national as well as international experts who are not directly involved in the activities). Projects were developed by expert

working groups and are targeted at specific high-risk populations (e.g., adolescents, elderly), various care settings (e.g., primary, secondary), and care delivery structures (e.g., workplace, armed forces).

In order to ensure quality and fine tuned training activities, the German Academy for Suicide Prevention has been founded, which oversees the development and continuous improvement of various types of training. The Academy also develops material for the training of specific professional groups, such as nurses in retirement homes. At the child and adolescent clinic at Heidelberg University, information concerning the YAM (Youth Aware of Mental Health) program is disseminated.

Ireland

National policy

Reach Out

Reach Out - a National Strategy for Action on Suicide Prevention - was launched in 2005 in Ireland. This was a 10-year strategy concluded in 2014, and takes a whole population approach to suicide prevention. This strategy guided suicide prevention work in 26 action areas, and it was coordinated by The National Office for Suicide Prevention (NOSP). Since 2011 the funding available to NOSP has increased by 100% to 8.1million Euro.

Connecting for life 2015-2020

Connecting For Life – Ireland's National Strategy to Reduce Suicide 2015-20120 aims to guide and co-ordinate the efforts of the countries state bodies and non-statutory organisations in reducing suicide. In addition, the strategy will integrate suicide prevention into a variety of future policy measures. The National Office for Suicide Prevention (NOSP) will continue to oversee the co-ordination of suicide prevention activities alongside a newly established Cross Sectoral Steering and Implementation Group with representation from the health sector, government, and NGOs.

The strategy focuses on the following objectives:

- Improving attitudes amongst the general population

- Standardising community based interventions

- Increasing the availability and quality of support services

- Reducing access to lethal means

- Improving the quality of research and evaluation

Preventive measures

The main function of the NOSP is the coordination of the activity of the voluntary and statutory agencies working in suicide prevention area. The NOSP oversees the implementation, monitoring and evaluation of Reach Out.

Reach Out addressed suicide prevention in four different levels:

1. **General population:** Promotion of mental health

2. **Targeted approach:** High risk and vulnerable groups

3. **Responding to suicide:** Reduce distress in families following suicidal death

4. **Information and research:** Support and dissemination of best practices in suicide prevention and information about suicidal behaviour in Ireland

Since 2000 the National Registry of Deliberate Self-Harm (NRDSH) is in operation and provides data on persons who present in a hospital after deliberate self-harm. It has a national coverage since 2006.

Between 2004 and 2013 the suicide rate fell from 12.2 to 10.3 in Ireland.

Italy

National policy

There is no integrated national policy on suicide prevention and treatment in Italy.

Preventive measures

Despite the lack of a national policy, non-governmental organisations, such as private agencies or associations, psychiatric associations and universities have been very active in suicide prevention. A wide variety of projects have been launched to target populations (adolescents) in specific universal school-based programmes as Youth Aware of Mental Health (YAM) at Molise University or general public awareness projects about depression and suicide risk.

Romania

National policy

Whilst there is no specific national suicide prevention policy, the Law for Mental Health and Protection of Persons with Mental Disorders includes provisions for suicide prevention.

Preventive measures

The Law identifies appropriate institutional structures for primary and secondary prevention such as mental health centres, crisis intervention centres, 72--hour psychiatric treatment (without patient consent) for suicide attempters, and review of continued treatment by a panel of psychiatrists after 72 hours (Official Monitor, 2002).

Furthermore, the non-governmental organization (NGO) Anti-Suicide Alliance (ASA) has been actively involved in developing and running suicide crisis centres with psychological counselling through the LIFE LINE hotline. 'Cry for Help', another NGO, runs effective suicide prevention activities in one of Romania's counties with the highest suicide rates. NGOs have been active in socializing suicide as a topic in the media and at Romanian psychiatric congresses and symposia within the past two years. NGOs have also launched various educational initiatives for certain target groups including children with increased social vulnerability and the elderly as well as for health care professionals (Cozman, 2009). At the Clinical Psychology Department, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, information concerning the YAM (Youth Aware of Mental Health) program is disseminated.

Scotland

National policy

In December 2002, the 'Choose Life' suicide prevention strategy and action plan was launched. The plan stipulates that suicide prevention should be the shared responsibility of public, private, and voluntary agencies. The following key objectives are covered in the strategy:

- Early prevention and intervention
- Responding to immediate crisis
- Longer-term work to provide hope and support recovery
- Coping with suicidality

- Promoting public awareness

- Media support

- Knowing what works

The Government issued national guidance on developing and implementing local suicide-prevention action plans, fostering collaboration among local public and private organisations, and implementing capacity building and training. 'Choose Life' is integrated into the National Programme for Improving Mental Health and Wellbeing developed by the Scottish Government (Platt, 2003). A body or agency is recommended to coordinate implementation of national suicide prevention strategies. 12 million GBP was allocated to Choose Life in the first phase of its implementation. The local suicide prevention action plans are targeting local needs, organisations, community-based and self-help initiatives.

Preventive measures

The 'Choose Life' programme includes primary, secondary, and tertiary prevention projects such as educational initiatives, crisis management, longer-term work to support recovery and rehabilitate patients, psychological support to ensure coping with suicidal behaviour and completed suicide to care-givers, media awareness campaigns, monitoring the effectiveness of the projects, and conducting research to ensure that targeted programmes can be developed.

Between 2002 and 2006 the suicide rate fell by 13% in Scotland.

Sweden

National policy

The National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) was founded in 1994 at the Karolinska Institute. The Swedish National Council for Suicide Prevention was set up. Following Sweden's first national suicide-prevention programme launched in 1995, the Swedish government introduced the second programme in 2005, the National Programme for Suicide Prevention. This programme combines public health and health care strategies and sets forth the legal requirements for action to be taken by different actors. Its extensive scientific basis combines different background areas:

- Biological studies (Karolinska Institute)

- Sociomedical suicidiological studies (Jan Beskow)

- Socio-epidemiological studies (Lars Jacobsson)

- GP educational programme on the Island of Gotland (Rutz)

- Child and adolescent psychiatry (Anne-Liis von Knorring)

- Psychodynamic and genetic studies (Danuta Wasserman)

In 2008, the Swedish government announced the "Vision Zero" for suicide initiative, which positions suicide prevention as every citizen's responsibility. This policy also aims at removing the stigma and taboo surrounding suicide (Wasserman et al., 2009).

Preventive measures

In 1997, six regional networks for suicide prevention were formed by NASP and cross-sectorial management teams were appointed in each region. The National Programme for Suicide Prevention sets ambitious goals:

- To minimize alcohol consumption in target and high-risk groups

- To restrict access to self-harm means

- To educate gatekeepers about effective management of persons with suicide risk

- To educate and support health care professionals and allied services in preventing suicide

- To analyse and monitor suicides and their follow-up within a month after discharge in the country

- To foster collaboration between government and voluntary organizations

There is a continuous evaluation of suicide preventive activities in Sweden, and the suicide rates decline year by year. At the Swedish National Centre of Suicide Research and Prevention of Mental Ill-Health (NASP) at the Karolinska Institute, trainings are held on YAM (Youth Aware of Mental Health), Supre-Miss, SUPREME, and MHFA (Mental Health First Aid).

Ukraine

National policy

Whilst no specific national suicide-prevention programme exists in Ukraine, it is mentioned in the National Health Promotion Plan and Conception of Mental Health Care. The government is working on reforming the mental health care system in Ukraine. Recently, the National Suicide-Prevention Strategy and Plan has been developed with help from local professional organisations and an international steering committee including experts from Sweden, Estonia, Germany and Israel. Professional and public discussions are being conducted about the further implementation of the plan.

Preventive measures

Suicide prevention is undertaken mainly by NGOs and volunteer organizations (Vijayakumar et al., 2005). Major NGOs such as Human Ecological Health with help from the Swedish Eastern European Committee and the Swedish National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) have implemented a wide variety of prevention measures in the Ukrainian Army and other areas of the Ukrainian society. NGOs provide education to the public and health care professionals, and using the 'train-the-trainers' methodology, they encourage volunteer and professional organisations to take charge. With the scientific support of the National Swedish Prevention of Suicide and Mental Ill-Health (NASP) at the Karolinska Institute the education in suicide prevention was expanded to medical doctors, school teachers, psychologist, hotline volunteers and mass media representatives (Rozanov, Mokhovikov, 2009). Since 1996 the suicide rate lowered from 29.4 to 19.5 per 100.000 in 2006.Train the trainer education together with resource dissemination and network establishment is considered to be a useful model for suicide prevention in countries without national suicide-prevention strategy.

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4.14. The WHO World Suicide Report

Countries that are involved in the WHO Mental Health Action Plan 2013–2020 aim for a 10% reduction in suicide rate. In 2014, the WHO released "Preventing Suicide. A global imperative", known as the WHO World Suicide Report. Developed by the most prominent experts in the world, this report builds on two key elements: a global knowledge base on suicide, and actionable steps based on previous research and best strategies, tailored to the countries' current resources and contexts (WHO, 2014).

The report

- Emphasizes the significance of national strategies

- Promotes timely and evidence-based interventions

- Encourages the development of comprehensive multisectoral strategies that bring together the health sector, education, employment, social welfare and judiciary and others

- Encourages governments to develop and strengthen surveillance

- Proposes practical guidance on strategic actions that governments can tailor on the basis of resources

According to the report, in terms of policy, 28 countries (13 from the European region) are known to have national suicide prevention strategies. The report summarises the core components of effective suicide prevention. These suicide preventive strategies have been chosen on the basis of the evidence-based mhGAP recommendations for suicide prevention, as follows:

- Development of a surveillance system of suicide, suicide attempts and monitoring interventions for tackling suicide

- Restriction of access to means for suicide

- Early identification and effective management of mental disorder that requires access to health care

- Mental health policies and policies that reduce the harmful use of alcohol

- Responsible media reporting

- Increase of awareness concerning mental health, substance use disorders and suicide

- Targeted interventions for specific vulnerable groups

- Gatekeeper training (health care providers, teachers, community leaders, police, military and fire-fighter personnel, spiritual and religious leaders, HR staff)

- Crisis helplines

- Appropriate assessment and management of suicidal behaviour, mental disorders and substance abuse disorders

- Follow-up and community support, reducing stigma

Recently, a second edition of the mhGAP Intervention Guide added school-based interventions to the list of recommended actions for suicide prevention. In particular, it has been recommended that universal preventive programmes with the objective of raising awareness about mental health and training new skills should be considered for implementation in the school setting for all adolescent students. The report also recommends objectives and key elements for executing national action plans

Objectives

- Increased surveillance and research activity

- Identification and targeting of vulnerable groups

- Improvement of the assessment and management of suicidal behaviour

- Promotion of environmental and individual protective factors

- Increasing awareness through public education

- Eliminating stigma towards people with mental disorders or suicidal individuals

- Reduction of access to means of suicide

- Encouraging the media to adopt better policies and practices about reporting suicide

- Support of individuals bereaved by suicide

Key elements

- Multisectiorial priority regardless of resources

- Tailoring for diversity

- Establishing and dissemination of best practices

- Appropriate allocation of resources (finance, workforce, time)

- Effective planning and collaboration

- Using of evaluation findings and communication lessons learned

The report also incorporates useful case examples of different national strategies for tackling suicide.

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5. PREVENTION OF DEPRESSION AND SUICIDE IN EUROPE: REVIEW CONCLUSIONS

Depression has become a top health priority of the XXI. Century. Depression was found to be a top cause of disability, and leads to increased morbidity of other frequent chronic diseases. Unrecognised and untreated depression in chronic diseases is a major risk factor of poor outcome and increased mortality, while treatment of depression is associated with improved control of chronic diseases. Depression is the most frequent (but not single) background factor of suicide. Suicide is the second main cause of death in the 15-29 year age group. Suicide has a higher frequency amongst middle-aged men and in the elderly. Suicide is probably the most tragic human act, with long-term negative consequences for survivors, family members and peers. Especially high risk groups for depression and suicide include those with comorbid somatic illness, the elderly, adolescents, the socially disadvantaged, those with recent loss, especially through suicide, and some migrant groups.

In sum, both depression and suicide have a dramatic economic and societal impact. Depressive disorder is the major cause of lost productivity in the European Union. Individuals with major depression report almost two times more lost work days than sufferers of heart diseases or diabetes. The cost of depression corresponds to 1% of the total economy of Europe (GDP) and the majority of which arises indirectly (loss of productivity, increased morbidity, sickness absence, early retirement, increased mortality). Therefore, tackling suicide and depression is a pan-European imperative.

Despite the previous efforts and investments of tackling depression and suicide, despite the available evidence-based approaches for preventing and treating depression and suicide, and despite the existing best practises in Europe, there are still a lot of unmet needs in combating depression and suicide.

In spite of the high prevalence of depressed patients in health care settings, under-recognition is frequent; it is estimated that around 50% of the cases remain undetected. The following barriers of recognition and treatment are common and lead to significant treatment gaps in the Member States: stigma of mental disorders and depression, limited accessibility of prevention programs for certain populations, and disproportionate access to services (e.g. psychiatric care, evidence-based psychotherapies or E-health solutions).

Although evidence-based therapies are available in Europe, several unmet needs can be identified and may lead to the limited outcome of treatment. The following unmet needs are associated with pharmacological treatment: Side effects that impact quality of life tend to diminish compliance, slow action, high rate of non-response for the first chosen antidepressant, partial remission and residual symptoms (insomnia, blunting, residual cognitive symptoms). Although a large proportion of depressive patients can be effectively treated with properly-chosen psychotherapies, the accessibility of these therapies varies greatly from country to country. In many European countries accessibility is limited and does not reflect the community needs; long waiting lists and limited funding of psychotherapies are frequent, and in some countries psychotherapies are mainly available in private practice only.

Responsible reporting of suicidal events is an important aspect in decreasing suicide attempts. Although a WHO Guideline is available, media adherence to the guidelines is extremely poor in Europe.

Nevertheless, numerous programmes and best practices have been invested in Europe thus far and provide good examples for implementation and practice in broader European contexts.

6. SITUATION ANALYSIS ON PREVENTION OF DEPRESSION AND SUICIDE IN WP4 PARTICIPATING MEMBER STATES

6.1. Methodology

The first research action involved conducting a comprehensive literature review in order to assess the state of prevention efforts for depression and suicide (Part I of this report), as well as current efforts in mainstreaming e-mental health interventions at the European level (Part II of this report). The reviews are not intended to be exhaustive; rather, they provide an overview of available programmes and interventions (and associated challenges) throughout Europe.

SEARCH STRATEGY

A multi-phase strategy was employed for the search. First, based on the review question, a number of key scoping papers were used to extract initial keywords to use in the scientific databases. Then these search terms, in combination with other search terms deemed relevant for the review question by the research team were used to yield references in the following databases in May and June 2014: Pubmed and PsycINFO. In addition to the database search, school-based suicide prevention programs were identified using PsycINFO and Google Scholar. References were excluded if they were not focused on Europe. In addition to primary research articles and review articles, book chapters and textbooks on suicide prevention were also included.

SITUATION ANALYSIS

A comprehensive questionnaire was developed in collaboration with national associated partners (one national counterpart per participating country). The questionnaire had the aim to evaluate current actions against depression and suicide as well as current efforts in implementing and mainstreaming e-mental health interventions. More specifically, within these three thematic Work Package areas, the items gauged policy planning and legislation, financing, existing collaborations and organisations operating at national/international level, providers of services, prevalence rates of depression and suicide, and service utilisation data such as admission rates. 9 Member States have completed the situation analysis for their country (Latvia, Estonia, Sweden, Denmark, Hungary, Netherlands, Germany, Ireland and Bulgaria).

In the Situational Analysis, we asked participating countries to fill out the questionnaire about the strengths, weaknesses, opportunities and threats (SWOT analysis) in the fields of the treatment of depression, suicide, and also about the use of E-Health solutions in their country. The SWOT analysis for depression and suicide prevention had the same possible answers, and e-mental health had a different set of options for participants to select.

The countries were asked to tick these areas regarding the treatment, thereby showing the current situation in the respective countries. The number of ticks in the different areas is shown in the tables. The cells are highlighted where the number of answers was dominant. The results of the SWOT analysis are presented in Annex 2.

It should be noted that not all figures tally to 9 Member States, as not all Member States submitted complete data or did not have information available, and the data from Ireland were obtained and evaluated separately.

ASSESSMENT OF INTERVENTIONS AND PRACTICES

In each of this Work Package Member States, national counterparts and key stakeholders were engaged to provide information on interventions focusing on the prevention of depression and suicide, as well as e-mental health intervention. A questionnaire was developed by the Work Package team to evaluate best practices and tools used in Member States and inquired about the intervention itself, as well as its management, quality control and sustainability of best practices as well as its accessibility. In country and cross-country collaborations are also assessed. 8 Member States have submitted interventions developed in their country (Latvia, Estonia, Sweden, Denmark, Hungary, Netherlands, Germany and Bulgaria). The data from Ireland were obtained and evaluated separately.

6.2. Mental health legislation, policy and planning for prevention of depression and suicide

Table 3. Summary of the main results of situational analysis on country level

	BULGARIA	DENMARK	ESTONIA	GERMANY	HUNGARY	IRELAND	LATVIA	NETHERLANDS	SWEDEN
National policy									
Depression/suicide	✓	✓	✓	✓	✗	✓	✓	✓	✓
E-mental health	✓	✗	✓	✗	✗	✗	✓	✗	✗
Action plan									
Depression/suicide	✓	✓	✓	✗	✗	✓	✓	✓	✓
E-mental health		✗	✓	✗	✗	✗	✗	✗	✓
Legislation									
Depression/suicide	✗	✓	✓	✗	✗	✗	✓	✓	✗
Legislation regarding suicide prevention									
Reduction of access to lethal means	✓	✓	✗	✓	✗	✓	✓	✓	✗
Recognition and treatment of at risk populations in primary health care	✓	✓	✗		✗	✗	✓	✓	✓

	BULGARIA	DENMARK	ESTONIA	GERMANY	HUNGARY	IRELAND	LATVIA	NETHERLANDS	SWEDEN
Recognition and treatment of at risk populations in specialised care	✓	✓	✓	✓	✗	✗	✓	✓	✗
Media communication of suicidal events	✓	✗	✗	✓	✗	✗	✗	✗	✗
Access to crisis interventions	✓	✓	✗	✓	✗	✗	✗	✓	✗

At the legislation and policy level, eight out of nine Member State (MS) had a national policy or strategy addressing depression and/or suicide, and slightly less (n=7) had a national action plan. Three MS had health or technology related policies addressing e-mental health, six did not have any policy addressing e-mental health. Even less MS (n=2) had an e-mental health implementation action plan. Only three MS stated that their policies and plans were evidenced-based, stressing the need for incorporation of evidence into policy development and formulation to inform decision-making.

Four of nine MS had legislation regarding depression and/or suicide risk. Eight out of nine MS had legislation in place to protect people from depression and from losing their job due to their illness.

Related to suicide prevention, within national legislation, six MS have provisions related to reduced access to lethal means, five MS have provisions for the importance of recognising and treating at-risk populations in primary care, six MS recognise treatment of at-risk populations in specialised services, four mention access to crisis interventions, and only two MS has a provision for moderating the media communication of suicides. Additional provisions within legislation mentioned in a few MS included regulation for medication, rules for involuntary treatment and suicide prevention in schools.

Four out of nine MS have a registry at the national or regional level collecting routine information on depression, suicide and interventions (including e-mental health interventions).

With regards to clinical guidelines, eight out of nine MS apply these on prevention and/or treatment of depression and suicide. Concerning to adherence to guideline recommendations in clinical practice, one MS stated that guidelines exist but are rarely followed in daily practice, two estimated adherence to guidelines among professionals to be approximately 50% whereas the majority (n=5) stated that health care professionals generally adhere to guidelines but there are exceptions to full compliance. Barriers to adherence included large volume of patients at GP practices and thus less time per patient, too few specialist referrals, lack of management for depression in primary care, lack of motivation, lack of monitoring and evaluation of the clinical practice as well as lack of motivation.

6.3. Mental health financing in countries for prevention of depression and suicide

Finance mechanisms for mental health had the poorest response rate among the section of situation analysis. Budget breakdowns according to the specificity of what was asked in the questionnaire were not available in any of the countries with the exception of one MS. Services were primarily funded through insurance companies or through government contributions depending on the health system financial model in the respective MS. Funders and providers of e-mental health interventions included insurance companies, research grants, and non-governmental organisations through fundraising.

Roughly half (n=4) of the MS stated that the health budget is, to a certain extent, allocated according to the relative needs of the population. Three MS stated that there is no formula within the budget for the allocation of mental health based on population needs.

With respect to social benefits, the proportion of service users with depression who receive long-term disability compensation varied, from 25% in Sweden to 40% in the Netherlands. Of those who were unemployed and diagnosed with depression, between 16-19% (in Germany and the Netherlands, respectively) received social welfare benefits or pension due to disability attributed to depression.

Antidepressant treatment had national coverage in half of the MS at the specialised care level and at the primary care level. Psychotherapy and/or counselling did not have the same coverage rate through insurance or packages of care as did treatment with antidepressants.

Figure 7: Antidepressant treatment in primary and specialised care
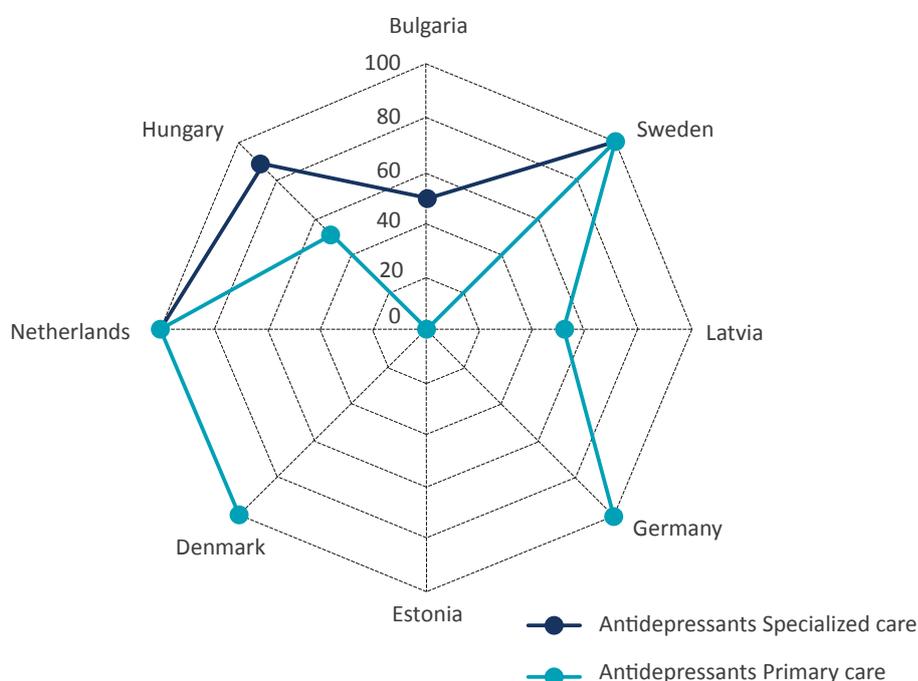
Figure 8: Psychotherapy in primary and specialised care
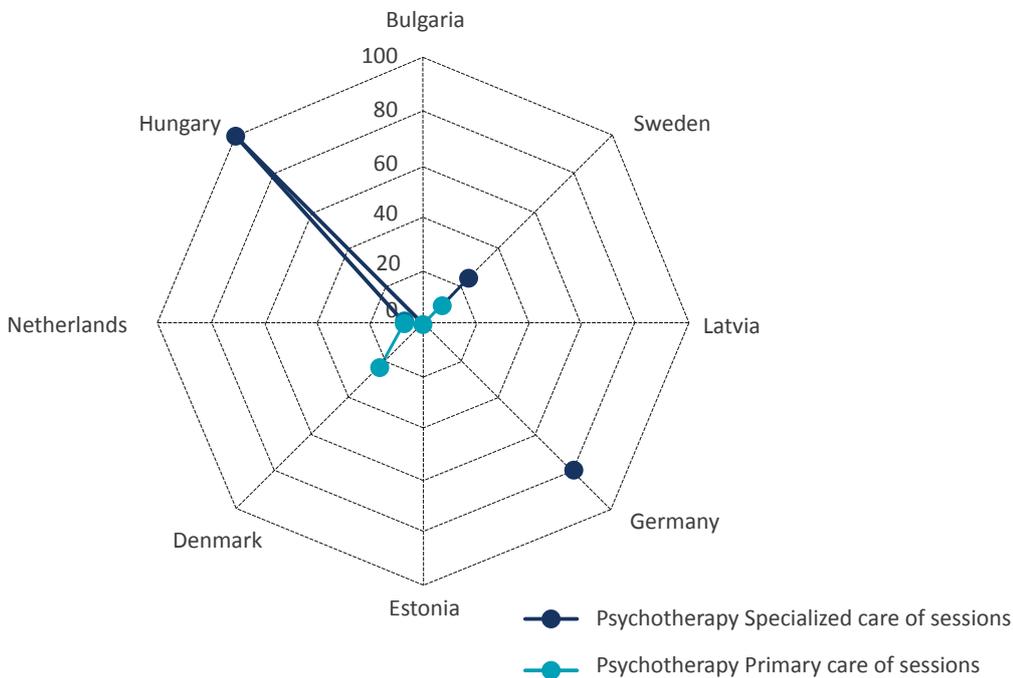
6.4. The situation at the programmatic level for prevention of depression and suicide

All MS had a special program in place which focused on depression and/or suicide prevention, ranging from the EAAD, to ERSI, to national-level suicide prevention programmes that were not in collaboration with other MS. The majority of such programmes have been implemented at the national level; however some MS have only implemented these programmes at the regional level.

Figure 9: Target groups of the programs
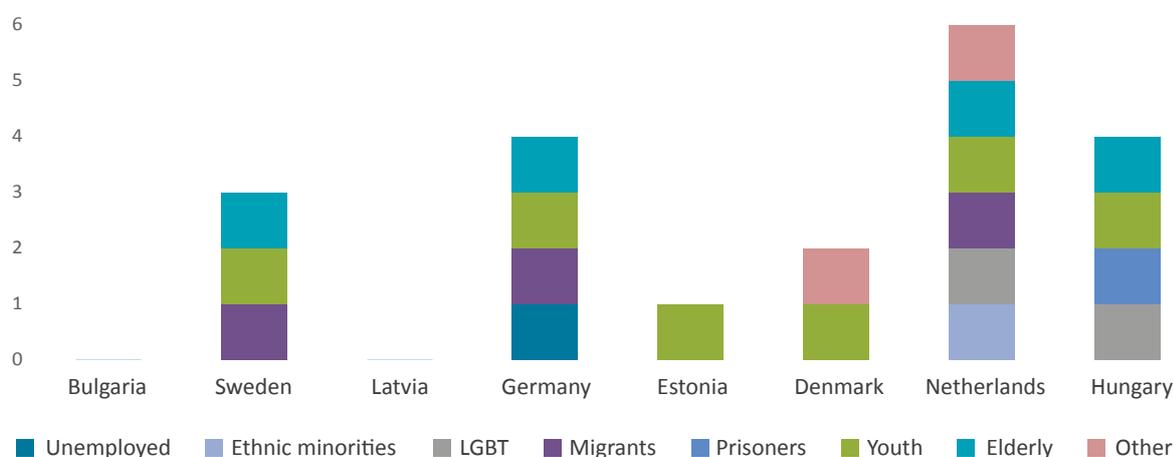
Table 4: Availability of programs directed to specific target groups

Programs	SUICIDE		DEPRESSION		E-MENTAL HEALTH	
	Yes	No	Yes	No	Yes	No
Unemployed	1	5	1	5		5
Ethnic minorities	1	4	1	4	1	4
LGBT	1	3	1	3	1	3
Migrants	2	3	3	3		5
Prisoners	2	2	1	2	1	2
Youth	7	1	6	2	4	3
Elderly	3	2	4	2	1	3
Other	1	1	1	1		1
Total	18		18		8	

School-based programs were present in the majority of the MS: 6 have depression and suicide prevention programmes mainstreamed into primary school (27.3%), n=7 (31.8%) at the secondary level, and n=7(31.8%) at the high school level. Two MS did not have any school-based programmes.

With respect to self-help programs, eight MS have self-help groups, six MS have internet-based programs, and only one MS has no self-help programs at all. A number of MS have programs tailored for specific groups (see table 3). MS implemented a number of self-help interventions. Submitted interventions range from nationally organised self-help groups, with disease-specific groups for depression, online support groups for specific vulnerable groups (e.g. postpartum depression), and self-help groups for relatives of people suffering from depression or who have committed suicide. Finally, internet-based self-management programs like IFightDepression were mentioned.

6.5. Involvement of service users and carers at the programmatic level in prevention of depression and suicide

The majority of MS had governmental directions for the representation of users and carers on committee and national-level groups (See Table 4).

Table 5: Involvement of users and carers in program planning

	USERS				CARERS			
	Yes, mental health services	Yes, stigma, prevention and promotion	No	Information not available	Yes, mental health services	Yes, stigma, prevention and promotion	No	Information not available
Planning of mental health activities	4	3	3	1	4	3	3	1
Implementation of mental health activities	5	3	2	1	3	2	4	1
Review of mental health activities	2	3	4	1	3	1	3	2

Furthermore, service user and carer organisations across MS were involved in the treatment of depression (2 MS), in prevention activities (3 MS), and in postvention (2 MS). These results indicate that more efforts can be directed towards involving service users and carers in the planning and design of these activities and services.

6.6. National and international collaborations in the prevention of depression and suicide

Overall, MS rated the level of collaboration between non-governmental organisations and professional services to be mediocre. On a scale of 1-10 (1 signifying no collaboration and 10 extensive collaboration), the level of information exchange was rated a mean of 6.25 (SD=2.25), while the level of task sharing (M=4.75, SD=1.75), co-managed activities (M=4.5, SD=2.7) and the overall level of collaboration was rated a mean of 5.63 (SD=2.26).

All the nine MS have active international collaborations on e-mental health or the prevention of depression or suicide (e.g. MONSUE PREDI-NU, EAAD, OSPI Europe, SEYLE, SUPREME, YAM, ISRII, IIMHL, and within the JAMHWB itself).

6.7. Prevalence and service utilisation data for prevention of depression and suicide

There has been a reported increase in suicide rates in 3 MS, and one MS where this trend is declining. The incidence of depression has increased overall in recent years, although there is no specific research, which has been able to link the increase in incidence to the economic recession. Despite the lack of research on this linkage, some MS have implemented new provisions to mitigate the negative effect the economic crisis has had on mental health, through developing emergency safety packages within social safety nets, and expanding counselling services for those who are made redundant or who are unemployed. In some MS, overall unemployment rates have increased (due to the recession), however, this has not been attributed solely to depression (only one MS has conducted research on the link between economic crisis and depression/suicide).

The overall prevalence rate of depression and suicide rate was relatively consistent across MS for vulnerable groups (see Table 5).

Table 6: Prevalence of depression and suicide among specific target groups

TARGET GROUP	UNEMPLOYED	ETHNIC MINORITIES	PRISONERS	MIGRANTS	YOUTH	ELDERLY
Prevalence rate of depression (Range)	11-17%	11-31%	N/A	18%	4-23%	5-17%
Suicide rate (per 100 000) (Range)			10.6	5.5	3-13.5	16-28.8

*Prevalence data on incarcerated individuals was not available across the MS.

At present, between 1-13% of persons with depression are currently hospitalised (in 5 MS, as the remainder 4 MS did not provide data). In addition, 42-80% of suicidal patients are currently hospitalised, although only three member states were able to provide this data. Length of stay for persons with depression varies from 1-3 weeks to more than 3 weeks; for suicide attempts, it is less than 3 days to 1-3 weeks.

Figure 10: Length of hospitalisation due to depression or suicidal attempt

1. Less than 3 days

2. 3-7 days

3. 1-3 weeks

4. More than 3 weeks
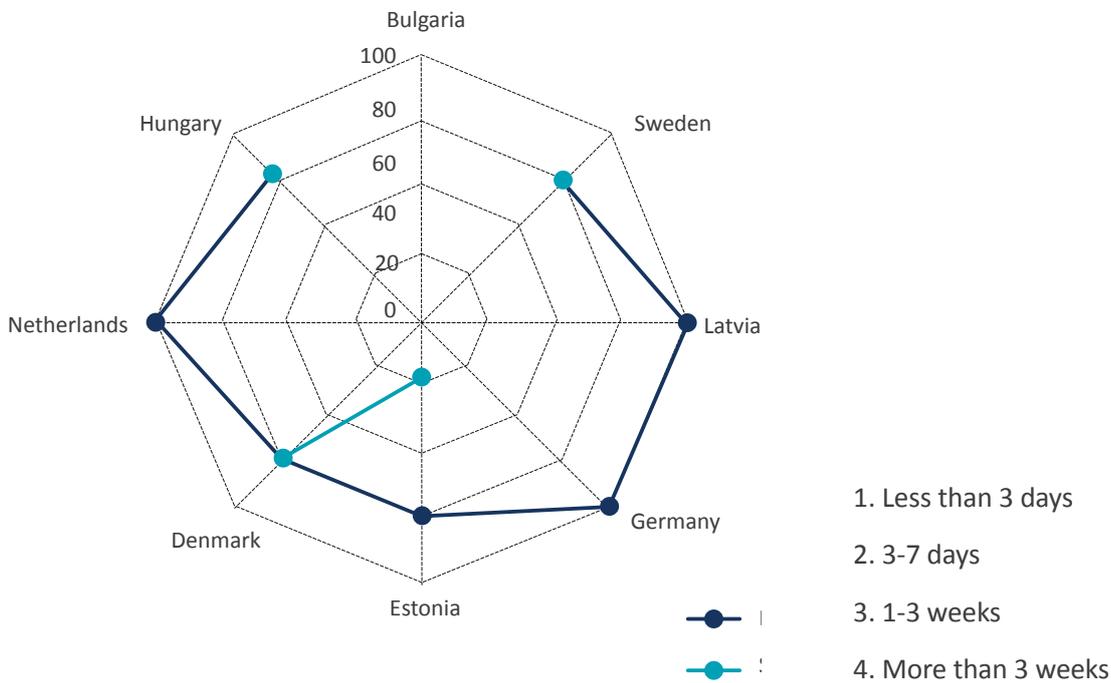
The number of outpatient facilities per 100,000 population varied substantially across MS, which could be attributed to the limited availability of outpatient/community-based services in some countries. In certain MS (e.g. the Netherlands), there are substantially more community-based and day facilities as opposed to outpatient facilities (i.e. 1.2 outpatient facilities, vs. 260 per 100,000 day care facilities, Table 6).

Table 7: Outpatient facilities (per 100 000) across participating Member States

COUNTRY	OUTPATIENT FACILITIES PER 100 000
Netherlands	1.2
Sweden	13
Bulgaria	5.04
Latvia	3.35
Estonia	N/A
Germany	30.32
Hungary	6.1
Denmark	N/A

Similarly, the rate of outpatient visits per 100 000 population varied substantially across MS, ranging from 1100 to 25600. Detection rates for depression in different clinical settings were the highest in primary care and emergency services, and lowest in the social care and the educational system.

Table 8: Number of outpatient visits (per 100 000) across participating Member States

MEMBER STATE	NUMBER OF OUTPATIENT VISITS PER 100 000
Bulgaria	Information not available
Sweden	25 000
Latvia	19 807
Germany	Information not available
Estonia	19 380
Denmark	1100
Netherlands	25 600
Hungary	13 628

Table 9: Number of human resources per 100 000 across participating Member States

PROFESSION	BULGARIA	SWEDEN	LATVIA	GERMANY	ESTONIA	DENMARK	NETHERLANDS	HUNGARY
Psychiatrists	6.75	3.55	9	15.23	13.5	9	20	6.5
Other medical doctors	35.93	1.98	2.23	138	N/A	13	371	1.3
General qualified nurses	431.01	28.9	30.76	56.06	N/A	59	1190	21
Qualified nurses in mental health	8	50	N/A	N/A	12	N/A	132.3	6.5
Psychologists working in mental health services	0.91	0.93	N/A	N/A	5	10	Range: 15 – 28	2.4
Psychotherapists (licensed)	N/A	0.39	1	27	N/A	N/A	5.4- 6.8*	N/A
Social workers	0.36	18.42	N/A	N/A	2	N/A	176	2.9
Occupational therapists	N/A	0.54	0.36	N/A	N/A	N/A	N/A	N/A
Other health or mental health workers	N/A	59.83	15.04	N/A	N/A	N/A	88	14

*Taking all registered psychologists into account

The majority of the MS (n=6, 75%) do have research on the number of undetected cases of depression or suicide in the country. The major obstacles to the detection and identification of depression and suicide risk across the MS can be clustered into three categories: barriers at the service user level, barriers at the services/professional level and barriers at the policy level. Barriers at the service user level were stated as resistance from service users to engage with health professionals at the onset of depressive symptoms, poor help-seeking behaviour, limited awareness concerning symptoms of depression, and stigma. At the services/professional level, decisions regarding the best management of symptoms and diagnosis were perceived as barriers, as were the limited number of trained GPs who are comfortable in the diagnosis of depression, the lack of collaboration between different service providers (resulting in fragmentation), the long waiting times for mental health care in the public sector (and high consultation fees in the private sector), as well as the poor mental health competencies of primary care doctors. Finally, at the policy level, the lack of action plans in the prevention of depression and suicide was cited as an obstacle

Table 10: Detection rates of depression

SETTING	CRISIS	ACUTE STRESS	DEPRESSION	SUICIDE RISK
Primary care	65.8 (19.9) Range: 35-90	54 (11.4) Range: 40-70	47.1 (19.1) Range: 20-75	47 (38.7) Range: 10-100
Non-psychiatric specialized care (e.g. internal medicine, gerontology)	50 (32.9) Range: 15-90	42 (16.4) Range: 20-30	37,5 (18.4) Range=15-60	34 (28.2) Range 10-75
Social care	55,4(11.4) Range 50-75	44(13.4) Range: 30-60	22(9.1) Range: 10-30	35(23.2) Range: 5-55
Educational system	53(21.7) Range: 20-75	41(15.2) Range: 15-50	29(26.8) Range: 10-75	37(39.8) Range: 5-100
Emergency service	73(19.2) Range: 50-95	55(11.2) Range: 50-75	40(23.2) Range: 20-70	67(29.9) Range: 20-100

6.8. Treatment availability for prevention of depression and suicide

Across MS, only one MS had regions within the country where evidence-based treatment was not free or affordable. Evidence-based treatment for combating depression and suicide are widely available throughout Europe, as indicated in Table 7.

Table 11: Availability of evidence-based treatments across participating Member States

		NONE	A FEW (1-20%)	SOME (21-50%)	THE MAJORITY (51-80%)	ALL OR ALMOST ALL (81-100%)
Treatment with antidepressant	Depression			3	3	2
	Suicide		2	1	2	1
Psychotherapy	Depression		4	3	1	
	Suicide		2	3		1
Counselling/ crisis intervention	Depression		4	2	2	
	Suicide		2	3	1	1
Other (specify)	Depression	1 EMH				
	Suicide					

Figure 11: Availability of treatment possibilities in depression and suicidal behaviour

How often people receive the following treatment for depression and/or suicidal behaviour?
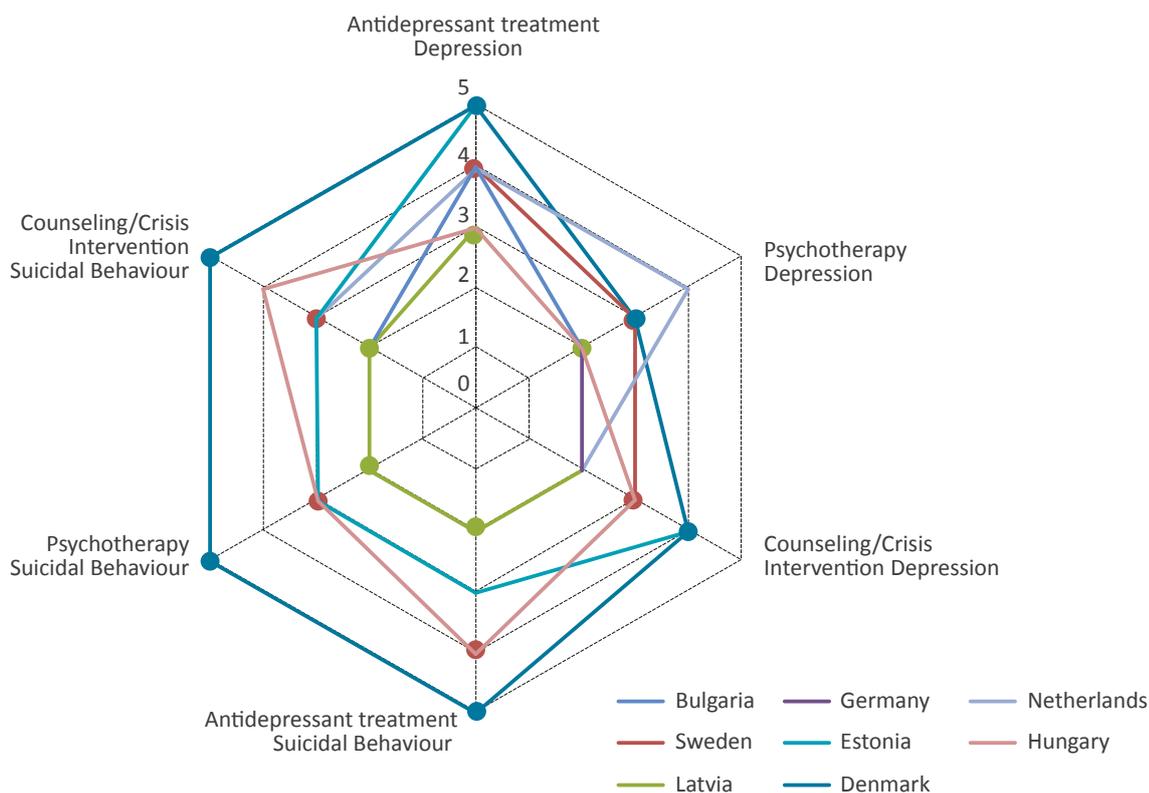
7. ANALYSIS OF INTERVENTIONS ON PREVENTION OF DEPRESSION AND SUICIDE IN WP4 PARTICIPATING MEMBER STATES

7.1. Overview of submitted interventions for prevention of depression and suicide

Sixty-nine interventions were submitted by 7 Member States (17 by Denmark, 6 by Estonia, 2 by Germany, 12 by Hungary, 18 by Latvia, 11 by the Netherlands, and one by Sweden). The analysis of the Irish data were conducted separately. The range of interventions varied substantially across MS, from hotlines to crisis interventions to stepped care approaches to e-mental health interventions (psychoeducation, e-therapies). The majority of the interventions (n=46, 66.7%) targeted depressive complaints and suicide prevention (n=48, 69.6%), and fewer interventions addressed suicide interventions (n=25, 36.2%) or postvention (n=21, 30.4%). Sixteen of the interventions were for other conditions or complaints (n=16, 23.2%) which included interventions targeted at alcohol abuse, anxiety disorders, crisis situations, stress, diabetes, general mental health support during difficult situations, substance abuse and other mental health and/or emotional problems.

Table 12: Main outcomes across submitted interventions

OUTCOMES OF THE INTERVENTIONS
Improved problem solving skills
Decreased level of hopelessness
Decreasde depressive symptoms
Decreased psychopathology
Improvement in emotional regulation
Increased awareness
Decreased negative attitudes about mental health problems
Encouraged help-seeking behaviour
E-learning skills
Reduced stigma
Encouraged participation in daily activities
Reduced number of suicides
Encouraged other stakeholders to use information provided to them (e.g. police)
Improved care and optimizing treatment
Increased support for women who face post-partum depression
Increased knowledge and awareness of services
Lower number of arrests
Reduced self-harm
Encouraged integrated care and coordination between different sectors of health and social care
Supported survivors of suicide, and their relatives
Reduced crisis situations
Improved quality of life
Improved overall wellbeing

The primary target audience for interventions were people with mental health complaints (depressive symptoms and/or suicidal tendencies, n=50 (72.5%). The secondary focus of the intervention was geared towards the general public and not only intended for people with mental health complaints (n=37, 53.6%). Emphasis was slightly less on relatives/partners (n=17, 24.6%), professionals (n=33, 47.8%), volunteers (n=10, 14.5%), and others (n=7, 10.1%), which included community facilitators, friends of persons with mental health problems, and people in crisis situations.

The majority of interventions (n=60, 87%) did not target vulnerable groups, however, those that did (n= 9, 13%) targeted adolescents, prison staff, health workers in old age care, entrepreneurs, ethnic minorities, and children with disabilities. Of these 69 interventions, 26 (37.7%) targeted a specific age group, 18.8% of which targeted children and adolescents, 43.5% targeted adults and 17.4% targeted older people.

The delivery of the intervention is primarily carried out by mental health professionals (psychiatrists, psychologists), followed by social workers and general practitioners, or it is online (self-guided) (see Table 12.).

Table 13: Who delivers the intervention?

PROFESSIONAL	MEAN (STANDARD DEVIATION)
Psychiatrists	33 (47.8)
Psychologists	44 (63.8)
Medical doctors	8 (11.6)
GPs	15(21.7)
Social workers	18 (26.1)
Trained volunteers	14(20.3)
Teachers	5(7.2)
Police	4(5.8)
Emergency services	7 (10.1)
None (i.e. online, self-guided)	14 (20.3)

*Note 2 interventions are missing this data

Other professionals who deliver interventions were not mentioned in the table, included relevant Ministries of a particular MS (e.g. Ministry of Health, Ministry of Social Protection) nurses, physician assistants, municipal health staff, art and music therapists, and physiotherapists.

7.2. Description of interventions

With respect to all submitted interventions, the median length of the intervention is 20.5 days. This takes into account training programs, e-interventions and face-to-face interventions as well.

Table 14: Structure of interventions

INTERVENTION	N (%)	NUMBER OF SESSIONS (M (SD) OR MEDIAN, AS APPROPRIATE)
Psychoeducation	41 (59.4)	Information not provided
Self-test	18 (26.1)	Information not provided
Group course	12 (17.4)	M=6.75(4.85)
Individual course	18 (26.1)	0-16, M=6.22(3.81)

INTERVENTION	N (%)	NUMBER OF SESSIONS (M (SD) OR MEDIAN, AS APPROPRIATE)
Individual chat	4 (5.8)	2, 8, 10 (M=7.5, SD=3.79)
Email	7(10.1)	Median: 10 emails
Face to face	18 (26.1)	0-25 M=6.36(SD=6.36)
Phone contact with a professional	11 (15.9)	Median=10
Mobile phone application	2 (2.9)	Information not provided
Emergency phone line	11 (15.9)	Information not provided
Public campaign	13 (18.8)	Information not provided
Forum	8 (11.5)	Information not provided
Other	18 (26.1)	Information not provided

Other interventions consisted of awareness interventions (e.g. in the community, or in schools), press conferences, psychoeducation (information provision), trainings, press releases and TV appearances.

Guidance provided during interventions varied; the majority (n=27, 39.1%) provided intensive guidance, while others minimal (n=14, 20.3%) or no guidance (n=8, 11.6), the latter of which included self-management or psychoeducation e-interventions. Nineteen interventions did not supply information on the intensity of guidance provided.

One third required an Internet connection (n=26) but the majority of interventions were not geared towards use on a mobile phone or tablet (n=61, 88.4%). Anonymous use of the intervention was possible in roughly half of the interventions (n=34, 49.3%), which was particularly relevant to the e-mental health interventions submitted.

7.3. Collaboration and ownership of interventions

The primary owners/developers of the intervention included national institutes for mental health in respective MS, government agencies, private foundations, university departments (typically department of clinical psychology/psychiatry), non-governmental organizations, and service providers. Over half of the interventions (n=41, 59.4%) are provided in partnership with other sectors, primarily within the health or social care domain (see Table 11 below).

Table 15: List of partners collaborating in interventions

PARTNER	N (%)
General practitioners	18 (26.1)
Teachers	12 (17.4)
Police	10 (14.5)
ER services	16 (23.2)
Social workers	20 (29)
Service providers	20 (29)
International partners	5 (7.2)
Other	14 (20.3)

*Other: EU Commission, lecturers, WHO, NGOs, pharmaceutical industry, municipalities, universities, volunteers, social services, state inspectorate.

Funding is available for 40 of the 69 interventions (58%), and the length of available funding varied from short-term (end of 2014/2015) to long-term funding, to indeterminate funding, the latter of which were few. Despite funding variation, the majority of the interventions (n=50) were free for the client to use. The remainder of interventions ranged from small user fees, to training fees (cost incurred by the trainers not by the clients), and by own contribution costs of 20-60 euros, or in the event that the intervention was not reimbursed by insurance, an entire e-therapy could cost up to EUR 324. This was in the case that the client preferred anonymous use of the e-therapy and therefore did not want it reimbursed by insurance.

7.4. Evidence-based approaches within submitted interventions

Many of the interventions had a relevant theoretical underpinning as the basis of the intervention, the majority of which were cognitive-behavioural based (n=31, 44.9%). Other theoretical frameworks for interventions included pharmacotherapy with antidepressants (n=14, 20.3%), problem-solving therapy (n=18, 26.1%), interpersonal therapy (n=12, 17.4%) cognitive therapy (n=11, 15.9%), behavioural activation (n=10, 14.5%), pharmacotherapy with other agents (n=9, 13%) solution-focused brief therapy (n=5, 7.2), acceptance commitment therapy (n=5, 7.2%). Additional submissions included dialectical behavior therapy, existential therapy, pretherapeutic interventions, and social support. Several interventions did not have a therapeutic intent and therefore did not have a theoretical framework (i.e. were psychoeducation or educational interventions), or did not report a therapeutic framework.

7.5. Efficacy of submitted interventions

Only a third of interventions (n=27, 39%) have demonstrated efficacy (defined as effective compared to an intervention control group or as good as another effective intervention). Thirteen (18.8%) of these interventions demonstrated efficacy through conducting a randomized controlled trial (RCT), or through quasi-experimental study designs (n=8, 11.6%), pre-post designs (n=6, 8.7%) or other designs (n=4, 5.8%). One intervention demonstrated that it was not effective in an RCT. Outcomes assessed through research conducted on these interventions varied substantially (see Table 15). Outcomes were measured at endline (which differed depending on the intervention), at 1 month post-completion of the intervention, and at one year after the intervention.

Table 16: Outcomes assessed in interventions

OUTCOME	N (%)
Consumer self-report about treatment	20 (29)
Structured interview with clients	4 (5.8)
Prescription rate	1 (1.4)
Number of patients/participants	19 (27.5)
Number of involved partners (Yes)	6 (8.7)
Other*:	26 (37.7)

*calls of gratefulness rom clients, changes in media coverage regarding suicides, depression and anxiety symptoms, number of participants, length of sickness and number of people coming back into employment, number of webpage visitors

Slightly more interventions have not demonstrated efficacy through research or evaluation, but were based on evidence-based treatment modalities (n=37, 53.6%), which included evidence-based guidelines on principles of behavioural activation, problem-solving therapy, interpersonal therapy, and CBT.

As a result, twelve interventions were charactersised as effective (n=12, 17.4%), some might be effective but require further investigation and evaluation (n=19, 27.5%), and some have mixed

results (n=8, 11.6%), requiring more evidence to be considered robust interventions. The majority of interventions did not have information available on this particular questionnaire item (n=27, 40.6%).

A number of obstacles were mentioned, the majority of which were centred on limited funding and financial resources (n=17), limited workforce and/or more human resources and trained professionals required (n=9), and the vulnerability of having a volunteer-based intervention (see Table 16 below for more description).

Table 17: Obstacles to implementation of interventions

OBSTACLES TO IMPLEMENTATION
Intervention is not tailored to other situations (e.g. urgent/emergency situations)
Competition with the training market
Cooperation with GP's
Difficulty in promoting the intervention
High attrition rate
Additional funding needed
More human resources needed, particularly in MS with low-resources. Currently a lack of trained professionals (n=9)
Volunteer-based intervention: threat if volunteers quit, need to motivation volunteer
Financing system does not make it possible for family doctors to be incentivized to screen and treat mental disorders.
Collaboration with other sectors needs strengthening (e.g. fire and policy services, social services)
Unwillingness of municipalities/local services to pay for intervention
IT governance
Overload of work – tasks exceed capacity of implementers
Motivating professionals to use the intervention/implement the intervention
Stigma of using a mental health intervention
Ensuring geographical reach of the intervention
More human resources needed/additional workforce needed, particularly in MS with low-resources.

Despite the limited demonstrated efficacy of the interventions and obstacles provided, 82.6% (n=57) of the interventions, were stated to be sustainable, for a number of reasons, largely attributed to the financial support received for the intervention, the free cost of using the intervention for clients, and its integration into routine clinical/care settings. These reasons are:

- Trainers who have been trained to use this method can further implement the intervention without additional support (n=2)

- Possibility for wide dissemination of the programme in different MS

- Committed financial support for intervention (e.g. through continued government funding) (n=12)

- Clients sustain intervention costs through own contribution, minimal number of professionals required to implement intervention (as it is minimally-self guided e-mental health intervention)

- Easy accessibility for clients (sessions can be visited from home) alongside face-to-face appointments with professionals provided at a distance

- As the interventions are run by volunteers, the programmes are cost-effective and sustainable (n=5)

- Intervention has been translated and adapted to a number of cultural contexts and languages

- Free online information for family members and for people who are experiencing symptoms of depression, easy to manage

- Has demonstrated efficacy in research trials (n=2)

- Incorporated as part of daily routine/practice in clinical care (e.g. in hospitals) or within the insurance package of care (n=4)

- Provided as a supplementary intervention therefore complementing primary treatment

- Can be tailored to other health conditions and coping with other problems

7.6. PROBLEMS AND GAPS IDENTIFIED

Overall there are several problems and gaps identified in the presented analyses. First, there are a limited number of interventions which were submitted by Member States, and it is necessary to encourag the submission of more interventions via increased engagement with national counterparts. Secondly, evidence-based interventions and practices are not consistent across MS, as shown in the situational analysis, intervention analysis and SWOT analysis. This makes direct comparison difficult and necessitates different strategies for implementation in various contexts.

7.7. PREVENTION OF DEPRESSION AND SUICIDE IN EUROPE: CONCLUSIONS OF SITUATION ANALYSIS

This status report provides an overview of the current situation in Europe with respect to policy, legislation, financing and services for prevention of suicide and depression as well as e-mental health interventions and their success of being mainstreamed into routine services and practice.

Despite the previous efforts and investments of tackling depression and suicide, the available evidence-based approaches for preventing and treating depression and suicide, and despite the existing best practises in Europe, there are still a lot of unmet needs in combating depression and suicide. In spite of the high prevalence of depressed patients in health care settings, under-recognition is frequent; it is estimated that around 50% of the cases remain undetected. Although evidence-based

therapies are available in Europe, several unmet needs can be identified and may lead to the limited outcome of treatment. Although there are numerous available evidence-based suicide prevention tools also, these are not fully exploited in Europe.

Nevertheless, numerous programmes and best practices have been invested in Europe thus far and provide good examples for implementation and practice in broader European contexts. However the potential of networking and joint actions is partly exploited; the synergistic effects of partnerships programs and cross sectorial collaboration may increase the visibility and the dissemination of cost-effective best practises.

These conclusions are addressed in the form of recommendations in the following recommendation section of the report.

8. RECOMMENDATIONS FOR ACTION FOR PREVENTION OF DEPRESSION AND SUICIDE

8.1. How to employ the recommendation?

The recommendations listed above are intended to provide an action framework for future action plans directed at tackling depression and suicide on the foundation of scientific evidence. These recommendations are derived from longstanding best practices in Europe, and ensure feasible models for both local communities and countries. Therefore, the action framework can be utilised as a toolkit: each community can elect the most applicable recommendations on the basis of their own community's needs and resources. Employing the recommendations in combination has a strong synergistic potential, but they can also be implemented independently.

8.2. Taking evidence-based actions against depression

POLICY AND LEGISLATION

RECOMMENDATIONS AT THE POLICY AND LEGISLATION LEVEL

Depression is one of the most common mental health problems worldwide and poses a substantial burden to individuals, families, communities, and countries. As depression is associated with decreased productivity and increased absenteeism, it has a negative impact on the economy. It co-occurs with many other chronic conditions, impacting outcomes, and contributes to increased morbidity, mortality, and disability.

- **Public health priority, national strategies and action plans**

  - Engage policymakers to update health legislation to include depression as a **public health priority**

  - Encourage stakeholders in Member States to develop a **national strategy** against depression and include clear targets and goals

  - Encourage stakeholders in Member States to develop clear **action plans** to tackle depression, including clear targets and clear timeframes

- Incorporate clauses in health and social care legislation about **protecting people with depression** from being made redundant and supporting their return to work.

- Take measures **against economic exclusion; promote social participation** of individuals with mental health problems during times of economic crisis. Support protective social networks

PRIMARY PREVENTION: REDUCE STRESS AND BUILDING RESILIENCE

RECOMMENDATIONS FOR THE PRIMARY PREVENTION OF DEPRESSION: REDUCE STRESS AND BUILDING RESILIENCE

Prevention of depression relates to any activity which prevents depression from occurring. Primary prevention includes addressing adversity and problems in childhood, building emotional resilience, empowering people and promoting a healthy lifestyle. Secondary prevention of depression concentrates on preventing depression at the population level (for instance, launching school-based programs or programs for high-risk groups).

Stimulate investment in programmes targeted at providing individuals with support to build resilience and reduce stress through:

- Programs for children and adolescents

- Workplace programs

- High-risk group program

- **Implement programs for children and adolescents**

  - Support early learning and the coping with difficulties in childhood and adolescence, in order to enhance resilience. Promote preventive programs in schools.

  - Promote workplace stress management programs focusing on the awareness of depression

- **Implement workplace programs**

  - Promote effective public health methods as Mental Health First Aid (MHFA) for changing attitudes, knowledge and helping behaviour among the public

- **Target high-risk groups**

  - Encourage programs targeting support to at-risk individuals and families through non-governmental organisation activities

  - Promote and support the empowerment of high-risk groups with specific support programs: life skills training, stress management training, problem solving training. Important high risk groups of depression and suicide are: unemployed people, migrants, lesbian, gay, bisexual, transgender and queer (LGBTQ)-groups, people with chronic progressive disorders (discussed elsewhere in the comorbidities section)

  - Encourage collaboration between non-governmental organisations, government and research institutions for supporting high-risk groups

  - Invocate for international collaborations and increase the participation of international programs for supporting families with multiple problems, through collaboration with the WHO, and with the EU support structures

SECONDARY PREVENTION: EARLY RECOGNITION AND ACCESS TO TREATMENT

RECOMMENDATIONS FOR SECONDARY PREVENTION: EARLY R DIAGNOSIS/RECOGNITION AND ACCESS TO TREATMENT

Depression is not solely the problem of psychiatry, but has also become a general health concern. It is very frequent, increasing mortality and morbidity of other disorders, while decreasing the positive outcome of these. Therefore, it is a general duty of health care professionals in all areas of medicine to detect depression (as with detecting e.g. hypertension and high cholesterol), and help the patients receive appropriate treatment. This may also have the additional benefit of destigmatisation. Depression is under-recognized and undertreated throughout Europe.

- **Encourage the recognition of depression within the health and social sector.**

  - Encourage recognition of depression and referral/treatment of depression among all types of medical professionals (not only primary care physicians but other non-psychiatric health care professionals)

  - Work with different levels of health and social care services to integrate tools for a better recognition of depression

- **Encourage the recognition of depression outside the health and social sector**

  - Roll out school-based preventive programmes and education for teachers to support the recognition of depression and suicide risk as well as development of coping and problem-solving skills in students (pupils) in schools

  - Promote anonymous possibilities for seeking help due to psychological reasons in the workplace

  - Promote and implement programmes that lead to increased knowledge about depression, and decreased stigmatization of this and other mental health problems in the general public

RECOMMENDATIONS FOR IMPROVING ACCESS TO TREATMENT

Access to appropriate, affordable and effective care for depression still remains a problem in many health systems in Europe. The burden that depression places on health systems has not yet been reflected in depression care or management. Improving access to care can improve productivity, cut the overall cost of health services, and result in ameliorated outcomes for other chronic non-communicable diseases (e.g. diabetes, cardiovascular disease, HIV/AIDS and dementia)

- Promote the education of all health professionals (not only primary care physicians) in order to enable them to deliver first line treatment for depression (pharmacotherapy, mental health first aid, brief cognitive therapy techniques)

- Utilise the WHO's Mental Health Global Action Plan (MHGAP) materials

- Build the capacity of non-governmental organisation (particularly in Central Eastern European countries) to deliver help

- Support local/regional evidence-based, effective multi-level approaches for combating depression and for optimizing the use of limited resources

- Support the implementation of evidence-based E-mental health tools for combating depression

- Increase the accessibility of evidence-based psychotherapies

- Increase the accessibility of psychiatric care, by increasing its capacity and volume

RECOMMENDATIONS FOR INFORMATION, EDUCATION AND COMMUNICATION ACTIVITIES

Vital components of preventing depression is strengthening public response to mental health problems, shaping attitudes at the individual, professional and community level, and reducing stigma. Therefore public education and information activities remain important in preventing depression.

- Instate regional/local education concerning depression within the framework of an evidence-based approaches e.g. European Alliance Against Depression (EAAD), Youth Aware of Mental Health (YAM) in schools, primary care physicians trainings etc.

- Promote mental health first aid method (MHFA) is an effective public health intervention for changing attitude, improving knowledge and help behaviour among public and professionals as well

- Draw on successful media campaigns targeting stigma and mental health from other Member States, roll out information/communication strategies for depression and suicide

- Raise awareness of the availability of websites with psychoeducation for clients and carers; and assist other Member States to tailor existing websites to their context

- Implement local educational materials for patients and relatives in venues of health care

- Implement web-based resource which delivers appropriate information about depression

- Instate school-based educational programs about depression, and suicide

- Raise awareness of high-risk groups (unemployed, lesbian, gay, bisexual, transgender, queer groups (LGBTQ), migrants etc.) and market options for these groups

- Education about the prevention of relapse (exercise, sleep hygiene, daily rhythm, diet, stress management) must be integrated into the treatment protocol of depression

- Promote and implement programmes which lead to increased knowledge and decreased stigmatization about depression and other mental health problems in the general public

RECOMMENDATIONS CONCERNING SELF-MANAGEMENT

Guided and unguided self-management tools could be effective in addressing mild and moderate depression as well as improving outcomes as an adjunct treatment for severe depression.

- Encourage the organisation of local self-help groups of patients and relatives

- Support the dissemination of evidence-based, e-mental health self-management tools (e.g. guided computerised online cognitive behaviour therapy, CCBT)

- Promote the construction of a guideline for costumers concerning orientation amongst appropriate and inappropriate E-tools aimed at managing depression

TERTIARY PREVENTION: COPING WITH LONG TERM CONSEQUENCES AND COMORBIDITES, PROTECTING DEPRESSIVE PEOPLES FROM SOCIAL EXCLUSION

RECOMMENDATIONS FOR RAISING AWARENESS OF CO-MORBIDITIES

Depression is highly co-morbid with other chronic conditions (the most significant conditions are type 2 diabetes mellitus, cardiovascular disorders, chronic pulmonary diseases, chronic bone and joint disorders). Depression leads to a poorer prognosis of these disorders and due to poor compliance

increases the overall treatment cost of these disorders. Therefore the management of depression is crucial in the aspects of better outcome and reduce treatment cost of these disorders.

- Support the implementation of integrated care programmes, which reduces fragmentation between different levels and cadres of services to promote recognition and treatment of depression across all levels of care.

- Promote the collaboration between the mental health sector and all other health sectors

- Promote involvement of consultation-liaison psychiatry in the management of chronic disorders (for countries with low resources a "travelling consultant psychiatrist" could be feasible)

- Promote the use of e-mental health tools that have already been tailored to specific populations with comorbidities (e.g. diabetes and depression, multiple sclerosis and depression)

RECOMMENDATION FOR TACKLING ECONOMIC EXCLUSION AND PROMOTING SOCIAL PARTICIPATION

- Protecting people with depression from being made redundant and supporting their return to work

- Support protective social networks. Take measures against economic exclusion; promote social participation of individuals with mental health problems

CAPACITY BUILDING AND INTERSECTORIAL APPROACH

RECOMMENDATIONS FOR BUILDING CAPACITY

Due to the fact detailed above the training of health professionals is crucial for combating depression.

- Promote the education of all health professionals (not only GPs) for increasing recognition and enabling them to deliver first line treatment of depression (pharmacotherapy and mental health first aid (MHFA) techniques)

- Support increased attention given to depression in medical education courses (professional training courses for physicians and other health care professionals) as well as in the academic curricula of health care professionals

- Support increased attention directed toward evidence-based E-mental health tools in medical education courses (professional training courses for physicians and other health care professionals), as well as in the academic curricula of health care professionals, in order to increase the implementation of cost-effective, novel approaches in mental health care

- Promote the transfer from research to practice: propose how to translate results into practice in research projects and create tools for implementation

THE INTERSECTORIAL APPROACH: COLLABORATION WITH PARTNERS IN OTHER SECTORS

Given the aforementioned burden of depression on economies, communities, families, and individuals, action needs to be taken to combat depression. Depression does not only influence the health sector; but impacts the labour sector and employment (reduced productivity, absenteeism), as well as social benefits and social welfare, the economic sector (cost of care to the economy and proportion of GDP which depression accounts for), and the education sector also. To effectively tackle depression in Europe, collaboration among sectors is required.

- Promote intersectorial collaboration with important industrial/economic stakeholders for implementing tools that increase awareness of depression at the workplace and education about mental health, such as Mental Health First Aid

- Encourage collaboration with existing EU structures e.g. European Centre for Disease Prevention and Control (ECDC), European Social Network, etc.,(detailed in the following). A European Reference Network on Depression and Suicidality is proposed

- Encourage the Informational Technology (IT) sector and governmental actors to develop a sustainable business model to implement further evidence-based e-mental health tools

- Form research collaborations among sectors to assess the efficacy and cost-effectiveness of e-mental health tools, as well as depression and suicide prevention programmes

- Promote collaboration with the educational and labour sector for better public education and increasing awareness of depression

- Promote collaboration with the school and work sector for the implementation of school-based and workplace-based stress management programmes

8.3. Taking evidence-based actions against suicide

POLICY AND LEGISLATION

RECOMMENDATIONS ON POLICY AND LEGISLATION

Suicide and attempted suicide are major public health problems worldwide. Although suicide rates have been declining in Europe overall, some European countries have experienced a recent increase in rates and within certain subgroups. Suicide remains a leading cause of death in young people. Suicide is not only a terrible loss of an individual, but also overwhelmingly distressing for the family and poses a health risk to the relatives/significant others affected by suicide. Although many evidence-based suicide prevention methods exist, these are only partly exploited, therefore the wider implementation of these tools is vital necessity. It is also important to determine those anti-suicidal activities, which has no considerable effects.

- Support Member States to develop a national strategy to prevent suicide if one does not already exist, and subsequently a clear action plan with measurable targets

- Revise legislation to include protections for persons who have attempted suicide to return back to work

- Promote the legislation concerning the rules of responsible media communication about suicidal events

- Promote the legislation concerning the restriction of lethal means (e.g. toxic substances and firearms)

- Reduce the package size of potentially lethal medicines and/or restrict their availability. Consider the withdrawal of medicines with a doubted risk/benefit profile

- Promote legislation about restricting alcohol availability

PRIMARY PREVENTION OF SUICIDE. AWARENESS, EDUCATION RESTRICTION OF ALCOHOL AND LETHAL MEANS, RESPONSIBLE MEDIA COMMUNICATION

RECOMMENDATIONS FOR IMPLEMENTING EDUCATION AND AWARENESS PROGRAMS FOR SPECIFIC PROFESSIONAL GROUPS

Some professions encounter suicidal clients more frequently than others, thus it is important to train professionals to recognise suicidal behaviour and act, by providing mental health first aid/crisis intervention techniques, which could reduce the number of completed suicides.

- Provide training to specific professional target groups (health care professionals, firemen, policemen, priests, clerics, teachers, social sector workers). The training should focus on identification and talking skills in order to make contact with suicidal persons and guide them to help

- Topics of education: signs of crisis and depression, basic crisis intervention and psychological first aid techniques, locally available resources (local treatment possibilities, social services, e-mental health tools, telephone hotline services)

RECOMMENDATIONS FOR IMPLEMENTING EDUCATION AND AWARENESS PROGRAMS FOR THE PUBLIC

- **Start prevention early:** Utilise available and evidence-based school prevention programs to foster awareness about mental health and coping and problem solving skills in pupils

- Increase the public awareness concerning the sign of crisis

- Implement mental health first aid programmes in communities to detect distress and signs and symptoms

- Increase the awareness of available resources in crisis and danger of suicide

- Promote responsible media reporting of suicidal events

  - Avoid prominent placement of news about suicide

  - Avoid language which sensationalizes or normalizes suicide, or presents it as a solution to problems

  - Avoid description of the method and information about the site of suicide

  - Take the opportunity to educate the public about suicide, provide information about where to seek help

  - Exercise caution in using photographs or video footage

  - Take particular care in reporting celebrity suicides

  - Show due consideration for people bereaved by suicide

  - Provide information about where to seek help on local predicted venues of suicidal events (e.g. high places, railway crossings etc.)

- Promote and implement universal school-based programmes aimed at mental-health awareness and coping with difficulties in childhood and adolescence, in order to enhance resilience in young people

- Promote and implement programmes which lead to increased knowledge and decreased stigmatization of depression and other mental health problems in the general public

- Develop age-specific IT tools for the electronic delivery of mental health promotion and suicide prevention programs to the general population.

RECOMMENDATIONS FOR THE RESTRICTION OF ACCESS TO LETHAL MEANS

Restricting the access to lethal means with the provision of contact details of telephone helplines proved to be very effective for decreasing the number of suicides

- Consider placing restrictions on lethal medicines, and consider the withdrawal of medicines with doubted risk/benefit profile

- Promote keeping away dangerous means from household environment for preventing impulsive suicide acts

- Reduce the package sizes of potentially lethal medicines (e.g. paracetamol)

RECOMMENDATIONS FOR REDUCING HARMFUL DRINKING AND ALCOHOL USE DISORDERS

There is evidence to suggest that there is a link between alcohol consumption and suicide, and therefore reducing harmful levels of alcohol consumption may result in a reduced suicide rate.

- Promote the legislation about the restriction of alcohol availability (see above) on national/local/regional levels

- Promote healthy lifestyles and responsible alcohol consumption

RECOMMENDATION FOR PROMOTING RESPONSIBLE MEDIA COMMUNICATION OF SUICIDAL EVENTS

Although many studies demonstrate that media reporting influences suicide, and guidelines are available for the responsible communication of suicidal event, the media compliance to these guidelines is generally very poor.

- Promote the implementation of the WHO guidelines for the responsible media communication of suicidal events to national and local media professionals

SECONDARY PREVENTION OF SUICIDE: CHALLENGING DEPRESSION AND OTHER MENTAL DISORDERS, SUPPORTING INDIVIDUALS IN CRISIS

RECOMMENDATIONS ON DEPRESSION AND MENTAL HEALTH CHALLENGES EFFECTIVELY

Depression is associated with 60% of suicides. Suicide is also associated with unemployment, severe chronic diseases, and economic factors. Extensive research demonstrates that the treatment of depression could dramatically reduce the number of suicides.

RECOMMENDATIONS FOR INCREASING THE AVAILABILITY OF LOW THRESHOLD SUPPORT IN CRISIS

Low threshold crisis management services have an important role in suicide prevention. They deliver first line crisis intervention and additionally increase the utilisation of both mental health care and social services.

- Increase the availability of telephone hotline services, promote the use of 116 123 in all Member States, utilise the methods and practice of European best practice telephone hotline services (e.g. Samaritans, Livslinien, IFOTES)

- Increase the availability of web-based crisis intervention services (chats, based on community media-etc.)

- Increase the availability of low threshold personal services ("drop in" centres, etc.)

TERTIARY PREVENTION OF SUICIDE: FOLLOW UP CARE

RECOMMENDATIONS ON POSTVENTION AND FOLLOW-UP CARE

Strong evidence supports that previous suicidal attempts predict the subsequent risk of suicide, therefore follow-up care is crucial to prevent another attempt from occurring in the future. Follow up care aims to treat co-morbid mental health problems, increase emotional resilience and foster problem solving skills.

- Incorporate brief interventions into emergency treatment to provide information about local, available resources for crisis management, mental and social care and suicide prevention e-health tools

- Promote the implementation of evidence-based self-management E-mental health tools for building emotional resilience and problems solving skills

- Promote the administration of stress management and problem solving skills training on the site of emergency care

CAPACITY BUILDING AND INTERSECTORIAL COLLABORATION

RECOMMENDATIONS FOR ESTABLISHING SYSTEMATIC DATA COLLECTION FOR THE DETECTION OF HIGH RISK POPULATIONS

Systematic data collection and a register of suicide are important to monitor the trends of suicidal behaviour as well as to measure the efficacy of suicide prevention activities.

- Establish a national data register about suicide and attempted suicide in order to analyse the characteristics of suicide events for the better identification of high risk groups, and promote targeted prevention/awareness programs especially focusing on the identified high risk groups

- Establish national observatories of monitoring excellence and cost-efficacy of prevention and therapy intervention with an evidence-based approach

- Systematically monitor national and regional risk-factors for suicide and suicide attempt

- Systematically monitor and disseminate suicide-rates and suicide attempt rates in different regions

RECOMMENDATIONS FOR PROMOTING INTERSECTORIAL COLLABORATION

- Collaborate with labour and educational sectors to have information available for students and/or employees in case of a crisis.

- Encourage the IT sector and governmental actors to develop a sustainable business model to implement further evidence-based e-mental health tools

- Promote collaboration with the school and educational sector for the better public education and awareness of crisis and suicide

- Support local/regional evidence-based, effective multi-level approach for combating suicide and for forming more socially connected local communities

- Assist debt support and debt relief programmes in Member States

- Support the continuous organizations of network opportunities (i.e. conferences) that promote inter-regional and inter-sectorial collaboration

- Support the establishment and operation of National Centres for Suicide Research and Prevention (as in e.g. Sweden, Norway, Australia)

8.4. Summary of key recommendations for tackling depression and suicide

- **Engage stakeholders at the government level to update health legislation to include depression and suicide as a priority.**

  - Establish national observatories about depression and suicide in order to analyse the characteristics of suicide events for the better identification of high risk groups, and promote targeted prevention/awareness programmes especially focused on the identified high risk groups, as well as for monitoring excellence, the cost-efficacy of prevention and therapy intervention with an evidence-based approach

  - Encourage stakeholders in Member States to develop clear action plans to tackle depression and suicide, including clear targets and clear timeframes

  - Incorporate clauses in health and social care legislation about protecting people with depression or attempted suicide from being made redundant/and support their return to work.

- **Promote legislation concerning the rules of responsible media communication about suicidal events**

- **Promote legislation about the restriction of lethal means and alcohol**

  - Reduce the package size of potentially lethal medicines and/or restrict their availability. Consider the withdrawal of medicines with a doubted risk/benefit profile. Promote keeping away dangerous means from household environment in order to preventing impulsive suicide acts

  - Promote legislation about restricting alcohol availability

- **Promote intersectorial collaboration** with important industrial/economic stakeholders increasing awareness of depression at the workplace

  - Encourage the Informational Technology (IT) sector and governmental actors to develop a sustainable business model to implement further evidence-based e-mental health tools

  - Promote collaboration with the educational and labour sector for the better public education and awareness of depression

- **Stimulate investment in programmes targeted at families and high risk groups** e.g. unemployed, migrants, lesbian, gay, bisexual, transgender, queer (LGBTQ), people with chronic disorders with support to build resilience and reduce stress

- **Support early learning and coping with disabilities in childhood and adolescence** in order to enhance resilience (possible intersectorial link: early learning and mental health promotion in schools). Stimulate school preventive programmes and start prevention early. Support pupils in crisis and give them treatment opportunities

- Promote **workplace stress** management programmes with a special focus on prevention and awareness of depression.

- **Capacity building I. Increase the surveillance of depression in the health sector especially among patients with chronic conditions.**

  - Encourage recognition of depression and referral/treatment of depression among all types of medical professionals (not only primary care physicians and psychiatrists). Support the implementation of integrated care programmes, which reduces fragmentation between different levels and cadres of services

  - Promote the involvement of consultation-liaison psychiatry in the management of chronic disorders (for countries with low resources a "travelling consultant psychiatrist" could be feasible)

  - Promote the use of e-mental health tools which have already been tailored to specific populations with comorbidities (e.g. diabetes and depression, multiple sclerosis and depression)

- **Capacity building II. Increase the accessibility of treatment for depression.**

  - Promote the education of all health professionals (not only primary care physicians) enabling them to deliver first line treatment for depression (pharmacotherapy, Mental Health First Aid, brief cognitive behavioural techniques)

  - Build capacity of delivering affordable evidence-based psychotherapies with the collaboration of non governmental organisations

  - Support local/regional evidence-based, effective multi-level approaches for combating depression and for optimising the use of limited resources

  - Support the implementation of evidence-based E-mental health tools for combating depression by promoting evidence-based E-mental health tools in medical education courses (professional

training courses for physicians and other health care professionals) as well as in the academic curricula of health care professionals

- Increase the accessibility of psychiatric care, by increasing its capacity and volume

- **Capacity building III. Increase the availability of low threshold support in crisis**

  - Increase the availability of telephone hotline services, promote the use of 116 123 in all Member States, utilise the methods and practice of European best practice telephone hotline services (e.g. Samaritans, Livslinien, IFOTES)

  - Increase the availability of web-based crisis intervention services (chats, based on community media etc.),

  - Increase the availability of low threshold personal services ("drop in" centres, etc.)

- **Strengthen the community response to mental health problems, reduce stigma**

  - Promote regional/local education about depression in the framework of an evidence-based, multi-level approach.

  - Raise awareness concerning the availability of websites with psychoeducational contents for clients and carers; and assist other Member States to tailor existing websites to their context

  - Implement educational materials for patients and relatives in venues of health care

  - Promote school-based educational programs about depression and mental health

  - Implement education about the prevention of relapse (exercise, sleep hygiene, daily rhythm, diet, stress management) must be integrated into the treatment protocol of depression.

  - Encourage the organisation of local self-help groups of patients and relatives

  - Support the dissemination of evidence-based, e-mental health self-management tools (guided computerized online cognitive behavioural therapy, CCBT)

  - Provide training to specific professional target groups (health care professionals, firemen, policemen, priests, clerics, teachers, social sector workers). The training should focus on identification and talking skills in order to make contact with suicidal persons and guide them to help (suggested topics of education: signs of crisis and depression, basic crisis intervention and psychological first aid techniques and locally available resources)

  - Promote the construction of a guideline for costumers about the orientation amongst appropriate and inappropriate E-tools aimed to managing depression

  - Increase the public awareness about the sign of crisis and the awareness of available resources in crisis and danger of suicide

  - Promote Mental Health First Aid method trainings in communities

8.5. RECOMMENDED INDICATORS OF MEASURING SUCCESS

The evaluation of the measures taken against depression and suicide requires a systematic collection of reliable and valid indicators.

> **Recommended indicators:**
>
> - *Numbers of suicides and hospitalised suicide attempts (expected: decrease)*
>
> - *Numbers of persons on disability pension due to depression (expected: decrease)*
>
> - *Numbers of medical education (education for physicians and other health care professionals) courses with topics of depression, suicide and crisis (expected: increase)*
>
> - *Number of hours for education per professional category (expected: increase)*
>
> - *Length of psychotherapy waiting list in the public health sector (expected: decrease)*
>
> - *Increased utilisation of mental health services:*
>
>   - *Number of treated patients due to depression and crisis (expected: increase)*
>
>   - *Number of hospital admission due to depression and crisis (expected: decrease)*
>
>   - *Number of treated patients in outpatient services (expected: increase)*
>
> - *Number of validated available E-health solutions (expected: increase)*
>
> - *Number of interventions successfully implemented (expected: increase)*
>
> - *Measures taken considering the legislation about responsible media reporting of suicide (expected: decrease the No of inappropriate reports)*

8.6. Prominent EU Structures for possible partnership in implementation

EU structures has a leading role for facilitating mental health promotion in Europe by providing partnership and support different kind of initiatives on professional and policy level. On a basis of mutual agreement for improving mental health as a core objective, these initiatives already have brought together several national governmental programs, professional organisations and non-governmental organisations.

The following EU structures could promote and facilitate information exchange, knowledge transfer, and diffusion of innovations in mental health on a European collaborative basis. These structures lead a key role in intersectoral collaboration, therefore could be invocated for collaborating in the implementation of the recommendations.

ORGANISATIONS:

EC DG Health and Food Safety (DG Sante). The directorate steers EU public health initiatives and provide support to European public health programmes. *http://ec.europa.eu/dgs/health_food-safety/index_en.htm*

EC DG Research and Innovations (DG Research). The directorate defines and implements European research and innovation policy and supports MSs with assessments and recommendations.

http://ec.europa.eu/research/index.cfm?pg=dg

EC DG Education and Culture (DG EAC). The directorate is responsible for policy on education, culture, youth, languages, and sport, therefore may provide support for education and youth programmes targeting resilience and social inclusion.

http://ec.europa.eu/dgs/education_culture/index_en.htm

EC DG. Employment, Social Affairs and Inclusion (DG EMPL). The directorate steers EU initiatives for social inclusion, employment policy and social security.

http://ec.europa.eu/social/home.jsp?langId=en

European Centre for Disease Prevention and Control. Although this agency originally aimed at strengthening Europe's defences against infectious diseases, it may adopt a role of the surveillance on non communicable diseases and mental health.

http://ecdc.europa.eu/en/Pages/home.aspx

TOOLS:

EU-Compass for Action on Mental Health and Well being. The Compass are designed as a practical tool for sharing information on mental health situations and activities across the EU. The compass could be used as an information basis for seeking international collaboration and for knowledge transfer.

http://ec.europa.eu/health/mental_health/eu_compass/index_en.htm

NETWORKS:

European Social Network. The network of local public social services in Europe could be used for seeking partnerships and knowledge transfer.

http://www.esn-eu.org/who-we-are/index.html

European Reference Networks. Networking amongst European health care systems could disseminate expertises, pool knowledge, and improve diagnosis and care not only in rare diseases but probably on unresolved medical domains as well. Networking could maximise the speed and scale of the diffusion of innovations and evidence-based best practices, treatment models and be focal points for training and research, information dissemination and evaluation. Considering the public health and economic impact of depression and suicide in all of Europe, a European Reference Network on Depression and Suicidality is proposed.

http://ec.europa.eu/health/ern/policy/index_en.htm

eHealth Network. Cooperation and exchange of information among national authorities responsible for eHealth could contribute to information dissemination and encourage the adoption of the most effective e-Mental Health solutions. This collaboration could eventually lead to the diffusion and national adaptation of mature cross-border digital solutions that could be supported by EU instruments such as the Connecting Europe Facility (CEF).

http://ec.europa.eu/health/ehealth/policy/network/index_en.htm

9. CONCLUSIONS OF PART I ON PREVENTION OF DEPRESSION AND SUICIDE

Depression has become a public health imperative in Europe with huge social and economic impacts. Therefore implementing stronger measures against depression and suicide are urgent public health imperatives with a vast socio-economic impact. The recommendations aim to provide guidance concerning the forms of investments and actions for coping with depression and suicide more adequately focusing to the following main areas:

- Data collection, training, accessibility and research of cost-effectiveness are key elements of any effective intervention

- Continuous training programs for health care professionals decrease treatment gaps in depression and decrease the number of suicides. Further research is needed for clarifying the most effective elements of the educational programs

- Restricting access to lethal means and to alcoholic beverages proved to be effective in decreasing the number of suicides in many Member States
  Restricting access to lethal means and to alcoholic beverages and decreasing of social exclusion, domestic violence and bullying proved to be effective in decreasing the number of suicides in many Member States

- Responsible communication guidelines could dramatically reduce the number of suicide attempts

- There is an urgent need to improve the accessibility of evidence-based psychotherapy services. Cognitive behaviour therapy, dialectical behaviour therapy, interpersonal psychotherapy, mindfulness-based cognitive therapies and problem-solving therapy are all evidence-based treatments of depression and effective tools of suicide prevention

- There is an urgent need to increase the recognition and treatment rates of depression in the health sector. Thus, the recognition of depression should be reconceptualised as a general health care responsibility of health care professionals in all areas of medicine (as with detecting e.g. hypertension and high cholesterol). This may also have the additional benefit of destigmatisation

- The broader implementation of awareness programs in Europe is crucial. Evidence-based programs suggest that the empowering of gatekeepers, professionals and peer groups is an effective method for tackling crisis and depression, as well as preventing suicide. The multilevel approach has strong adaptive potential, exploits the communities' own resources, and tailors the evidence-based tools to the specific needs and possibilities of the community. The multilevel approach increases the level of awareness and collaboration, therefore facilitating destigmatisation and the building of more socially connected communities

- Recent rapid technological development in IT is expanding the possibilities (and probably the efficacy) of low threshold telephone hotlines and Internet services. It is vital to focus on the advancement and activity of crisis helplines, with a strong emphasis on accessibility and cost-effectiveness

- Legislation, national strategies and action plans are important facilitators of the broader implementation of these instruments. Many best practices have already been implemented on a national level in some European countries and could serve as models in a broader European context

Beyond the appropriate dissemination of our recommendations, implementing them is another necessity. A strong ambition is needed to encourage more implementation of all good practices in Europe for acting against depression and suicide, and building up more socially connected and supportive communities.

PART II. MAINSTREAMING E-MENTAL HEALTH INTERVENTIONS IN EUROPE

1. BACKGROUND AND CONTEXT

1.1. Rationale for implementing e-mental health interventions

The rationale for implementing e-mental health interventions has been reviewed in detail in several recent reports, primarily making the case for e-mental health interventions in the US, England and Australia (Kazdin, 2011; Barak & Grohol, 2011; Mohr et al., 2013); however, the rationale provided for mainstreaming e-mental health interventions in routine practice in these country contexts provide are also considered as strong reasons relevant to the European context. There are five key reasons for promoting and sustaining e-mental health solutions:

(1) The cost effectiveness of delivering mental health interventions (ranging from promotion of well-being to prevention of mental health problems to their actual treatment) is often a major barrier to intervention delivery. Many children and families cannot afford individual or group therapy, and schools worldwide are facing cuts in funding that have significantly decreased the number of programs that can be offered as part of the curriculum. Online mental health interventions are substantially less costly to implement than conventional face-to-face therapies and programs.

(2) Access to care for people with mental health problems remains a key challenge in the field of mental health and wellbeing. This ranges from problems with accessing affordable care, care that is located close to people's homes, or long waiting lists to see a mental health professional. Many people, often those most in need of interventions, have a difficult time accessing treatment programs because they either live in hard-to-reach rural locations, they work or go to school during treatment hours, or they are physically or psychologically unable to commute. Lengthy waiting lists are also a problem (e.g., with delays of up to 6 months on average for many EU mental health agencies). Many mental health systems have taken a crisis approach by limiting the number of treatment sessions (Wolgast, Lambert, & Puschner, 2004); thus, even those with treatment experience likely still require continued help. Approximately 75% of people with mental health who access primary care services can identify one or more structural barriers that substantially interfere with accessing interventions (e.g., transportation problems, cost and access of childcare while participating in interventions) and the rate is higher in rural areas across the EU, while minority and disenfranchised individuals are also less likely to access care due to ethnic and cultural barriers. E-mental health solutions address access to care issues by bringing interventions into the homes and pockets of vulnerable individuals.

(3) In many regions across the EU, there are far too few well-trained mental health practitioners to meet the needs of a growing number of people suffering from mental health problems. This challenge is further exacerbated by the continued pattern of increasing inner-state migration towards already densely-populated metropolitan areas that further deplete human and material resources in rural regions (areas that already suffer from demographic imbalances). The challenges of a sparse work force and limited resources has been generally acknowledged in the area of medicine and health and telemedicine solutions have been shown to be promising and viable (van den Berg et. al, 2015). For individuals with mental health concerns seeking care themselves as well as for EU-wide mental health systems more broadly, e-mental health solutions can address the shortage of professionals in sparsely populated regions (e.g., by providing diagnostic clinical interviews remotely via live video "chat" and subsequently linking the client to appropriate online interventions).

(4) Stigma is a massive help-seeking barrier for individuals suffering from mental health issues. A study by Alonso and colleagues (2007) that included six EU member states found that for a representative sample of individuals with a 12-month prevalence of a mental disorder, just under half did not attempt to access any form of mental health program or agency. The primary reason was a fear of being identified as having a mental health disorder. Stigma and the fear of being labeled as "ill" or "crazy" also predict significant delays in seeking treatment options or altogether avoidance of treatment possibilities (Wahlbeck & Huber, 2009). Ultimately, delays in help-seeking behavior for mental health concerns, especially severe concerns, predicts decreases in quality of life and declines in functioning and there is a strong and consistent relation between the length of untreated mental health problems (e.g., psychosis, depression) and poor clinical and social outcomes (Addington, van Mastrigt, Hutchinson, & Addington, 2002; Boydell et al., 2006).

One study conducted across 27 countries, including European Member States, found that people with schizophrenia were most profoundly impacted by stigma and discrimination in personal relationships and employment. Nearly half of the 729 participants experienced discrimination in making or keeping friends and around one third experienced discrimination in finding and keeping a job (Thornicroft et al., 2009). Perhaps most notably, almost half of the participants felt discriminated against, even when that was not actually the case. In terms of barriers to effective treatment delivery, these perceptions of discrimination are just as important to consider as actual incidences of discriminatory behavior because these belief systems hold people back from seeking the care they need. One way to effectively lower these barriers associated with stigma is to keep help-seeking behaviours and treatment anonymous and private. Computerized, mobile, and/or online interventions allow for this anonymity and privacy in a way that no other approach has offered.

 (5) A final critical rationale for implementing and maintaining e-mental health solutions is the potential for this approach to empower people with mental health problems to take control of their own mental health and well-being. Several EU policy and network organizations advocate shifting focus from a sole preoccupation with problems and deficits to a more strength-based approach that includes measuring happiness, quality of life, recovery and well-being. A European Social Network working group on Mental Health (ESN, 2011) published a report documenting the health services shift from a focus on disease and disorder exclusively, to a more person-centred, recovery approach. E-mental health interventions offer more opportunities for people with mental health problems to choose treatment modalities, control what happens in their care, and monitor their treatment options and progress with professionals in a transparent way.

Two important world-wide trends suggest that e-mental health initiatives may hold particular promise in empowering citizens to take an active role in managing their own mental health condition: the potential for the internet to democratize knowledge and social service delivery and the "quantified self" movement that has recently grown in momentum. The almost ubiquitous cell and WiFi access available to most Member States means that online citizens can make use of public information about mental health diagnostic methods, treatment options, results from clinical trials and alternative intervention options. They also can share this information with like-minded people with similar mental health concerns across the globe. Thus, with Internet connection comes a level of democratization of information that used to be under the sole purview of mental health professionals in the past. In turn, this easily accessible and shareable information provides individuals that seek mental health services an unprecedented ability to reclaim their dignity and respect. Citizens can now actively participate in their own recovery process, advocating for themselves when it comes to treatment options and monitoring their own progress and outcomes, in cooperation (rather than passively) with their mental health practitioner.

The "quantified self" movement refers to the increasing number of individuals world-wide who are buying and using sensors at varying degrees of sophistication to measure a wide range of factors about their own behaviour, physical and mental functioning. Early adopters to this movement are driven by the idea that collecting detailed data about themselves can help them make better choices about their

health and well-being. With basic sensors (e.g., heart rate monitors, accelerometers, EEG headsets) that are dropping in price dramatically every year, regular individuals can monitor their stress, food intake, sleep patterns, fatigue, brain waves, mood and heart rate. These sensors are usually Bluetooth enabled and linked to the Internet so that users can share their data with other like-minded peers monitoring their own progress on mood levels, exercise regimes, or diets (for only a few examples). This trend in collecting data on oneself is predicted to only grow through the years. In turn, an important implication for e-mental health may be that there is less stigma attached to self-monitoring moods, emotions and behaviours. As collecting these data becomes "normalized," there will be fewer barriers to delivering interventions that are tailored to individuals' unique daily contexts and stressors. Feedback by professionals can be provided on the basis of individual needs and wants, and innovations in conventional treatment delivery can be made on the basis of personalized psycho-social information collected and shared by the clients themselves.

1.2. Why is a joint framework for action needed at the EU level for mainstreaming e-mental health initiatives

Health systems everywhere are under considerable pressure due to increasing expenditures driven by an increased demand for health care in the context of an ageing society, a dwindling workforce, and the current economic recession. Together, these factors have led to an increased interest in innovative approaches to health care delivery to improve the efficiency of resource utilization and generate the best possible health gains for the population and reducing the treatment gap. The focus of many of these innovative approaches has involved health technologies and e-health tools. While technology has been used as an enabler of more accessible and efficient health care, the majority of actions have taken place at the national level. However, a number of key factors to mainstream e-health are beyond national borders and many lessons learned could be shared across Member States, thus coordinated action at the EU level is necessary.

NEED FOR A STRATEGIC PLAN FOR SCALING-UP E-MENTAL HEALTH INTERVENTIONS IN HEALTH SYSTEMS

E-mental health interventions are often developed in research settings funded by grants disbursed by government, but often such products, even when proved effective, rarely go beyond the research phase and are adopted by health care systems as a treatment option.

While some European countries integrate some e-mental health interventions and cover them financially in a similar way with other health services (e.g. Netherlands, Sweden), this is not a common practice across EU Member States. In order to transform this occasional practice into a routine way of working in mental health care, relevant authorities in Member States would need support and guidance on how to commission e-mental health tools (including screening tools or treatment tools) and how ensure they are aligned with national health standards and practices. Considering that e-mental health is currently well developed in a limited number of Member States and that no country has yet found a sustainable model for scaling up implementation of e-mental health interventions, joint action at EU level would be necessary to stimulate progress in this direction.

NEED FOR ENGAGEMENT AND COORDINATION WITH HEALTH PROFESSIONALS ACROSS MEMBER STATES

Health professionals sometimes perceive e-mental health interventions as a threat. A relationship based on trust needs to be established between health professionals and developers of e-mental health solutions, and health professionals' concerns need to be addressed in order to move forward. These fears include risks of budget cuts for face-to-face treatment in favour of e-health treatment, or concerns

related to quality of e-health interventions and potential risks for people with mental health problems who use them. Action at European level is necessary with the involvement of the European professionals associations in order to increase acceptability of e-mental health.

Furthermore, implementation and indeed mainstreaming of e-mental health interventions is contingent on the training of professionals on how to use digital tools in daily practice. Many health professionals are not trained in how to use e-mental health interventions in practice. There is a need to ensure that training packages are developed and disseminated which cover the appropriate aspects of e-mental health interventions and that such training packages are widely accessible.

NEED FOR ADDRESSING QUALITY AND ETHICAL CONSIDERATIONS WHEN MAINSTREAMING E-MENTAL HEALTH

While in somatic healthcare e-health tools often refer to screening tools, monitoring tools, and health education/promotion tools, in mental health e-interventions are also a means for providing actual treatment through e-therapies. The difference between screening tools, monitoring or health education and e-mental health therapies is that for the latter, the quality control and standards that need to be applied and respected is the same as for therapies provided face-to-face. At the moment, there is no clear agreement on how to regulate e-mental health therapies. There is therefore a need to establish a quality seal for e-therapies and outline guidance that can be used across the EU.

Furthermore, there are several ethical concerns that need to be addressed related to data collected through digital tools and solutions, including e-therapies. The first concerns where data is collected and stored and who has access rights to patient-level data and for what purpose. Without clarification on this and transparency, patient data is vulnerable to misuse. Second, security systems protecting patient-level data needs to be considered, to avoid mitigate the risk of any potential security breaches. There is therefore a need to clarify access rights to patient-level data, use of patient-level data and to develop security systems which protect data and do not reach the hands of unintended stakeholders.

NEED TO IMPROVE USABILITY OF E-MENTAL HEALTH INTERVENTIONS AMONG SERVICE USERS AND CARERS

While e-mental health is a potential game changer in empowering and encouraging participation of people with mental health problems in their own prevention, care, and recovery trajectory, many people are not aware of e-mental health tools at their disposal or how existing e-mental health tools can assist them. E-mental health tools can facilitate awareness of rights through information provided via various tools, such as the right to be informed regarding their own diagnosis and prognosis or the right to information on treatment options and ability to make an informed (and/or autonomous) decision about their care.

E-mental health solutions allow access to evidence-based therapies in the comfort of one's home, not dependent on appointments and with more time flexibility, encouraging a more active role in treatment and recovery. Making these solutions available and serve as a tool for empowerment, require a coordinated action at EU level to ensure that that they are well balanced with protection of those using these interventions.

NEED TO OPTIMISE CROSS-BORDER TRANSFERABILITY OF E-MENTAL HEALTH

While e-mental health Interventions are typically developed nationally, they can easily be translated and adapted internationally in a similar way to the face-to-face interventions, allowing for their international dissemination and wider utilisation. However, agreements between Member States are necessary to ensure cross-border transfer of e-mental health interventions to align with national health standards and

practices. At present, national government and research councils fund a large part of the interventions developed, using tax-payers money. It is not clear how such interventions can be shared in a fair manner.

2. E-MENTAL HEALTH IN EUROPE: STATE OF THE FIELD

As noted in the introduction of this report, the Joint Action for Mental Health and Well-being has the objective to produce recommendations for action for EU Member States on each of the themes addressed2. In the field of e-mental health, such recommendations need to be placed into the broader e- Health policy framework at European level in which e-health applications are developed and operate, from both an international, cross-country perspective and from a national perspective. At international level, the most advanced e-Health policies have been developed in the framework of the European Union (EU), the World Health Organisation (WHO) and the Organisation for Economic Cooperation and Development (OECD) (Lang, 2012). Each of these international policy regimes has formulated their own problem definition, objectives and policy instruments to achieve their aims. While not legally binding, these international policies impact on the ways of working and the implementation in Member States. At national level, a number of Member States have adopted strategies regarding e-health. This chapter presents an overview of the current international and national policies on e-health, and discusses their impact on the mainstreaming of e-mental health. Furthermore, it will present the findings of a situation analysis carried out in the EU Member States participating in WP4 of the Joint Action.

2.1. E-health policy context

INTERNATIONAL ORGANIZATIONS: THE ROLE OF THE WORLD HEALTH ORGANISATION (WHO) AND ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD) IN E-HEALTH

International organizations have long emphasized the importance of using technological tools and health technologies within health care to narrow the treatment gap, collect data and information to generate better evidence to inform health care decisions, and generate knowledge (Lang, 2012). In 2004 the WHO developed its e-health strategy and called on its Member States to use e-Health for Health Care Delivery (eHCD) and to put measures in place to implement e-Health safely and reliably. Furthermore, the strategy urged the development of guidelines and training material in addition to research to ensure and effective adoption of eHCD (Lang, 2012; WHO, 2004). This call to action led to acceptance of the WHO e-Health resolution during the 58th World Health Assembly. In the same year the Global Observatory for e-Health (GOe) was launched, which is dedicated to the study of e-Health evolution and its impact on the health status of citizens of the member states. Subsequently, the Executive Board defined the areas for action such as guidelines, legal and ethical subjects and the promotion of the relationship between ICT professionals and the public health sector (Lang, 2012). Member States agreed to strengthen health information systems in view of the need for accurate information whereby progress to base policy on can be monitored. In order to accomplish this aim, the WHO urged its Member States to adopt the "Framework and Standards for Country Health Information Systems" in 2007 (HNM Framework) (Lang, 2012). Four years later in 2011, the Commission on Information and Accountability for Women's and Children's Health (CoIA) recommended that by 2015 all target countries of the programme should have integrated the use of ICT in their National health information systems. In support of this recommendation, the GOe created an online directory for e-Health related national policies and strategies from Member States (WHO, 2015). More recently, Member States accepted the resolution focusing on standardization of health data and the importance of proper governance to

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2 The themes are: 1) Taking evidence-based action against depression, including actions to prevent suicide. E-health. 2) Managing the evolution towards community-based and socially inclusive approaches in mental health. 3) Promoting mental health at the workplace. 4) Promoting mental health and preventing depression in children and adolescents. 5) Mental health in all policies.

do this effectively and safely in collaboration with other stakeholders at the sixty sixth World Health Assembly (WHA66.24).

Complementing the work carried out by the WHO, the OECD has been spearheading the promotion, use and distribution of technology as it stimulates economic growth, especially in low and middle-income countries (LMICs) (Lang, 2012). The OECD worked together with the International Monetary Fund, The World Bank and the UN to diminish poverty though the spread of technology. Several reports have been commissioned by the OECD summarising policy that endorses interstate coordination and ICT infrastructure development, later also with the intended aim of diffusing technology to improve health care (Lang, 2012). In 2008 the OECD carried out a case study of six countries (Australia, Canada, the Netherlands, Spain, Sweden, and the United States), looking at their implementation of ICT solutions in health care and its implications. In 2010 the report, "Improving Health Sector Efficiency – The Role of Information and Communication Technologies" was published, covering the analysis of the countries' efforts and their degrees of success (OECD, 2015). The study presented four core objectives for ICT implementation: (1) Increase the quality and efficiency of care; (2) Reduce the operating costs of clinical services; (3) Reduce the administrative costs of running the healthcare system; and (4) Enable entirely new models of healthcare delivery (OECD, 2010 p. 12). Since then, the OECD has been working on developing a guide to assessing and measuring the outcomes from health technologies across countries.

E-HEALTH POLICY AND ACTION CONTEXT AT EUROPEAN UNION LEVEL

Demographic changes caused by aging of the population and the increased economic migration has meant that the European Union has had to find new ways to provide accessible and good quality health care. One of these ways has been prioritising development of innovative interventions, in particular Information and Communication Technologies (ICT) based solutions, which include digital interventions. In light of this, the EU has launched a number of strategic documents and supported several e-health initiatives. The recognition that Information and Communication Technologies could benefit the quality of healthcare and create jobs was a primary catalyst in the drive towards a better business environment for the e-health industry, resulting in the first e-Health Action Plan in 2004 (European Commission, 2004). In 2006, the i2020 initiative was introduced backing up the implementation of the first e-Health Action Plan by giving advice to the i2020 High Level Group (Lang, 2012)

The first e-health action plan requested the commitment of Member States to work together in order to draw up national and regional guidelines to increase the development and spread of e-Health systems (European Commission, 2012). Since that time, the European Commission has developed various policy initiatives to effectuate implementation of e-Health throughout the EU, provided guidelines for the development and deployment of interoperable electronic health record systems, and proposed a set of actions aimed at enabling wider deployment of telemedicine services in Europe (European Commission, 2012).

In 2007, the EU published the first White Paper on e-Health3 that aimed to develop a coherent framework to achieve better quality of health care delivery (European Commission, 2007). In 2008 the European Commission announced that e-Health became one of the six EU Lead Market Initiatives which aims to unlock innovative markets (European Commission, 2009). To achieve this aim, twenty programmes were developed, of which some were copied from the first e-Health Action Plan in order to reinforce them further. The 7th Framework Programme for Research, the Joint Technology Initiative on Innovative Medicines, and the Competitiveness and Innovation Program accompanied most of these programs with complimentary research priorities (Lang, 2012). A Thematic Network called CALLIOPE was initiated (2008) consisting of health administrations, competency centres, EU level organisations, professional organisations and user stakeholder groups representing health care professionals, patients and payers from 22 European countries (European Commission, 2015). In 2009 an open platform was established to bring together e-Health stakeholders in order to support decision makers at EU level with

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3 Together for eHealth: A Strategic Approach for the EU 2008-2013

advice. In the same year an update of the e-Health action plan was announced and in 2011 the new plan was published, where after a public consultation was held to add and prioritise objectives by key stakeholders in the field. In the same year, the "e-Health Governance Initiative" (eHGI) was launched and an e-Health Network was established through the "Directive on the Application of Patients' Rights in Cross Border Healthcare" (Article 14). The e-Health Network consists of 28 Members States and is scheduled to meet twice a year to shape the e-Health political agenda on an EU level (Lang, 2012). The network is supported by the eHGI, a member-state driven mechanism that aims to establish a government structure for e-Health, who work together to link the European political level with the operational level, specifically focussing on interoperability (Wilson, 2014; eHGI, 2015). In 2012, a second group to support the e-Health Network with policy development was appointed for a period of three years. The "e-Health Stakeholder Group", consists of representatives and substitutes of 29 expert member organisations covering patients, consumers, healthcare professionals and the industry (European Commission, 2014).

The second e-Health Action Plan (2012-2020) was presented at the end of 2012, following from the timeline of Europe 2020, the Digital Agenda for Europe and the European Innovation Partnership on Active and Healthy Ageing (Dogan, 2012). The plan included an e-Health Task Force Report stating recommendations for the implementation of e-Health and a review of evidence. Objectives include raising the awareness of the benefits of e-Health among EU citizens and their empowerment to become more involved in their healthcare. Other objectives cover interoperability, security of patient data and the development of a competitive e-Health market (Curry and Seddon, 2014).

NATIONAL E-HEALTH POLICIES WITHIN EU MEMBER STATES

According to the latest progress report concerning e-Health strategies adopted by EU and EEA Member States (Stroetmann et.al., 2011), in 2010 almost all EU Member States had adopted detailed documents outlining concrete e-Health goals, implementation measures and stating past achievements. Table 18 shows the action areas in which Member States focused on in their e-health strategies.

Table 18: Action areas in which Member States focused on in their e-health strategy (2006-2010)

REPORTED eHEALTH ACTIVITIES	TOTAL 2006 eHEALTH ERA	TOTAL 2010 eHEALTH ERA	DATA
EHR Patient Summary	27	27	0
ePrescription	16	22	6
Telehealth	23	27	4
Patient ID	24	26	2
Professional ID	13	22	9
Citizen card	22	25	3
Professional card	7	18	9
Standards (technical/semantic)	19	27	8
Legal activities	14	22	8
Evaluation	5	21	16

Source: eHealth Strategies study, 2010
Note: The results of non-EU countries were not integrated due to missing data for 2006. The data of England, Northern Ireland Scotland and Wales were aggregated into United Kingdom.

This report found that compared to the baseline year of assessment (2006) to end line assessment (2010), the majority of Member States had:

• Established national multi – stakeholder advisory group on e-Health;

- Developed Electronic Health Records (EHR) like systems locally or regionally, rarely at national level;

- All member states had initiated some sort of pilot studies to test tele-health or telemedicine, however, using these services on national level was still the exception;

- Instituted a national body taking care of e-Health standards development in congruence with European and international standards, however, the four main standards used by the countries do not assure interoperability.

E-HEALTH POLICIES AND THEIR IMPLICATIONS FOR E-MENTAL HEALTH

The current policy documents on e-health provide a broad framework for e-health interventions, including those on mental health. However, as noted above, the topics covered by these documents are limited and they do not address some of the key issues on which policy provisions are necessary for areas in e-mental health that deliver care digitally (e.g. e-therapies or serious gaming). Since such policy provisions do not already exist, platforms such as the Joint Action can provide needed policy provisions and also serve as an example for other areas of health where care might be delivered digitally.

2.2. Situational analysis of the mainstreaming of e-mental health in WP4 Member States

E-MENTAL HEALTH LEGISLATION, POLICY AND PLANNING

Three of the 8 Member States participating in Workpackage 4 had health or technology related policies addressing e-mental health, and 3 did not have any policy addressing e-mental health. The national policies were coordinated by the Ministry of Health (n=2) or The Ministry of Social Affairs (n=1). Even less participating Member States (n=2) had an e-mental health implementation action plan. The two participating Member States with action plans were both approved recently, in 2013.

FINANCING FOR E-MENTAL HEALTH TOOLS AND TREATMENTS

Financial mechanisms for mental health were by far the section of the situational analysis with the poorest response rate. Budget breakdowns according to the specificity of what was asked in the questionnaire were not available in all the countries with the exception of one participating Member State.

Seven of the 8 participating Member States provided information about the funders and the providers of e-mental health interventions. Funding in the MS was mainly provided by the government (n=2 of 7), general health care services and/or providers (N=2 of 7), followed by mental health care services (N=1 of the 7), IT/private companies (N=1 of 7), and others (N=2 of 7). Other funders and providers of e-mental health interventions included insurance companies, non-governmental organisations and through funding received from research grants.

From the rest of the MS roughly half either answered that the services were not funded by each of these sectors or that the information was not available.

The e-mental health services were mostly provided by health care services (N=2 of 7), mental health care services (N=2 of 7) and the IT sector or private companies (N=2 of 7). There was limited elaboration on this question and limited responses.

E-mental health interventions in the form of internet- and telephone hotlines in the case of the one MS that provided information were predominantly funded though government contributions (80%) followed by contributions of private non-profit organisations (20%).

Five of the eight MS provided partial information on the coverage of e-mental health interventions by insurance. In two of these MS the insurance provides coverage for some of the e-mental health interventions including for example psycho-education and telehealth care.

E-MENTAL HEALTH PUT IN PRACTICE

Of the submitted interventions by the MS a third required an Internet connection (n=26) and the majority of interventions were not geared towards use on a mobile phone or tablet (n=61, 88.4%). Anonymous use of the intervention was possible in roughly half of the interventions (n=34, 49.3%), which was particularly relevant to the e-mental health interventions submitted.

Six of the 8 MS responded that they had programs in place that might have an indirect positive impact on the implementation of e-mental health tools. One MS had no information available on this topic. Most of these interventions were focused on substance abuse (N=4 of 8), family support groups (N=4 of 8), and one of the MS had an intervention that focused on the empowerment of individuals. 6 MS have internet-based self-help programs. Furthermore, 4 of the eight MS had an intervention that might have an indirect positive impact on the implementation of e-mental health tools specified as "other".

Seven out of the 8 MS gave information on the availability of programs targeted at specific groups that promote the use of e-mental health. Four out of the 7 MS indicated that they have programs in place that promote e-mental health targeting the youth. Other programs were focussed on ethnic minorities (N=1 of 7), LGTB (N=1 of 7), prisoners (N=1 of 7) and elderly (N=1 of 7). Please see the table below for an overview.

Table 19: Availability of e-mental health programs directed at particular target groups

PROGRAMS	E-MENTAL HEALTH	
	Yes	No
Unemployed		5
Ethnic minorities	1	4
LGBT	1	3
Migrants		5
Prisoners	1	2
Youth	4	3
Elderly	1	3
Other		1
Total	8	

SWOT ANALYSIS OF MAINSTREAMING E-MENTAL HEALTH INTO HEALTH SYSTEMS

Participating Member States had the opportunity to provide an overview of strengths, weaknesses, opportunities and threats related to mainstreaming e-mental health solutions into health systems via a SWOT analysis Responses across participating Member States were grouped into different categories. In the table the special issues raised by the countries are categorized. The analysis was made based on the number of elements in the different categories.

Table 20: Overview of themes in the e-health SWOT analysis

ISSUES MENTIONED	CATEGORY
Channels of dissemination (online or off-line, on a computer, tablet (e.g. an iPad) or mobile phone)	Awareness
Training for professionals on how to develop and implement effective and evidence-based e-mental health solutions	Awareness
Variability of channels for dissemination	Awareness
level of development of private sector expertise in technologies or knowledge relevant to development, research and implementation of e-health	Awareness
Awareness of e-health interventions	Awareness
level of development of private sector expertise in technologies or knowledge relevant to development, research and implementation of e-health	Awareness
Customization to needs of vulnerable and socially isolated groups	Empowerment
National focus/prioritization of meeting needs of vulnerable groups (people with low socio-economical status, minority groups and older people)	Empowerment
Some examples of good practice regarding E-mental health solutions	Expertise
Specific expertise in the field development, research or implementation of e-mental health (Psycho-education, Self-help, Self-management, Digital therapies, Tele health Blended care (face-to-face combined with e-health)	Expertise
Lack of human resources for development and maintenance of e-mental health solutions	Expertise
Potential in overcoming financial challenges in mental health care	Financial
commercial interest of private parties developing e-mental health interventions	Financial
Financial challenges	Financial
Lack of financial resources	Financial
O-gap – speed of transition from prototype and pilot phase to operations	Financial
Sustainability and business models	Financial
Better availability and accessibility of services	Integration
Combination of face-to-face interventions and e-solutions	Integration
Integration with other forms of care	Integration
Potential for empowerment of service users and carers	Integration
Potential in improving availability of evidence-based treatment	Integration
Integration with other forms of care	Integration
Low adherence	Integration
some e-solutions are technically too complicated	Integration
Resistance by service users and carers	Integration
Resistance from health professionals or other relevant stakeholders	Integration
E-health development in general	Integration
Other forms of mental health care are dominant	Integration
Involvement of different sectors (governmental, non-governmental, private)	Policy
Prioritization of e-mental health at governmental level	Policy
Development of e-Health and integration of e-solutions of health services is a prioritised area in Estonia	Policy
Existing E-health policy	Policy
Ineffective governmental strategy on e-mental health	Policy
Involvement of different sectors (governmental, non-governmental, private)	Policy
Interventions are not enough evidence-based	Quality
Quality control	Quality
ICT/connectivity infrastructure in the country (broadband, internet connection, 3G, 4G, etc.)	Technical background

ISSUES MENTIONED	CATEGORY
Widespread free internet connection in public areas	Technical background
Widespread internet connection at homes	Technical background

Table 21: Aggregated table of answers for e-health SWOT analysis

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Empowerment	2	2	4	
Expertise	4	2	1	2
Financial			2	9
Integration	4	3	11	6
Awareness	1	4	6	
Quality		3		2
Technical background	8			
Policy	2	2	3	1

Strengths

The main strengths mentioned for e-mental health interventions across MS were technical and content expertise available to design and pilot e-mental health interventions, integration of e-mental health interventions within different care settings (e.g. primary care, specialist care, within the health system through securing buy-In from insurers for long-term financing).

Weaknesses

Although some MS saw integration as a strength, other MS saw this as a weakness, due to e-mental health being implemented, financed, and perceived differently depending on the MS. For Instance, in the Netherlands e-mental health interventions have progressed dramatically in the past decade, are mainstreamed into different care settings, and some interventions have been financed by insurance companies in the package of mental health care. Other countries with different resource availabilities or without the impetus to invest in e-mental health interventions may perceive integration as a weakness. Awareness and quality were also cited as weaknesses; awareness in the sense that many people may not know that e-mental health interventions that could benefit them exist, and dissemination efforts for e-mental health interventions have been relatively weak. Quality refers to the lack of quality seal of e-mental health interventions. Given the volume of e-mental health interventions which exist, it can be difficult to determine which ones are good and which ones could be ineffective or harmful, or relevant to one's circumstances. A quality seal could be a way to better ensure quality control.

Opportunities

Opportunities mentioned by MS included empowerment. Using e-mental health interventions can be empowering for clients as they can instill a sense of mastery over new tasks and experiences, equip clients with new problem solving skills or insights on their thoughts and behavior, and encourage engagement in daily activities through provision of homework and completion of modules within certain time intervals. Integration into different care settings and different levels of the health system was mentioned by many MS as an opportunity for the future. Launching awareness and dissemination activities could help to raise awareness about e-mental health interventions. Furthermore, E-mental health interventions themselves could raise awareness about mental health problems. Finally, policy was seen as an opportunity, in that e-mental health could be incorporated into policy documents and assigned targets in national and regional action plans for mental health.

Threats

Only two threats were mentioned across MS: financing and integration. Financing was perceived as a threat due to the relative difficulty of securing financing for long-term implementation and evaluation of e-mental health interventions, as typically funding only finances the initial development of the intervention and the piloting phase. Second, integration is perceived as a threat, as if e-mental health interventions are not mainstreamed into health systems, they risk being seen as a separate issue financed and run by independent organizations, which may position e-mental health solutions in a negative light and discourage use and benefit from them.

CONCLUSIONS OF THE SITUATIONAL ANALYSIS ON E-MENTAL HEALTH

Overall, the situational analysis helps provide an up to date overview of progress in efforts to mainstream e-mental health interventions in Member States. A number of countries are beginning to incorporate e-mental health into their programs and packages of care although progress remains slow.

Policy, legislation and planning addressing the mainstreaming of e-mental health are only available in three of the MS, and two of them have an action plan ready for the implementation of e-mental health interventions.

Nevertheless the availability of e-mental health interventions seems quite high. A third of the submitted interventions needed internet connection. Additionally, the questionnaire showed that 6 of the 8 MS have e-mental health interventions in place targeting different populations and mental health problems.

Information on funding and delivery of the services appears to be scarce. Funding seems to rely on a broad variety of sources and the services are provided among others by (mental) health services, private companies, health insurance and the government. Coverage of the services by the insurance appears to be often not available.

2.3. E-mental health interventions available in Europe

In recent years, a number of systematic reviews, meta-analyses, and literature reviews have purported the benefit and efficacy of e-mental health interventions in Europe (Andrews et al, 2010; Andersson & Cuijpers, 2009; Cuijpers et al, 2009; Cuijpers et al, 2010; Froushani et al, 2011; Richards & Richardson, 2012; Spek et al, 2007; Karasouli et al, 2014; van der Krieke et al, 2014; Andersson et al, 2008; Alvarez-Jimenez et al, 2014). While many e-mental health solutions reviewed have been developed outside of Europe (primarily in Australia and the United States), there have been a number of innovative e-mental health solutions developed and implemented across Europe as well.

This review summarises and describes briefly a select number of currently available e-interventions for mental health (which include the broad range of tools, from psychoeducation to screening, self-management, self-help, e-therapy, tele-health and applied games. The review of interventions is not meant to be exhaustive but rather to present an overview of different types of e-mental health solutions available and demonstrate the breadth and availability within the European context.

PSYCHO-EDUCATION E-INTERVENTIONS

Psychoeducation interventions are ample in a number of languages in Europe. While some countries (e.g. the Netherlands) have a central database which lists the majority of available psychoeducation interventions, others have one centralised psychoeducation website well known among the population (e.g. the National Health Service in the UK), while other Member States have a number of psychoeducation websites run by independent services providers, non-governmental organisations, or national mental health organisations or institutes. The central aim of psychoeducation e-interventions is to enhance knowledge and awareness of wellbeing or about a particular mental health problem. Information provided by many include symptoms and signs, treatment options, consequences, coping strategies, and resources for care givers and/or family members. There may also be links to other sources of information or to screening tests, as well as contact details or links to service providers, support groups, or crisis helplines locally.

Examples of current interventions:

NHS Choices (National Health Service, UK) offers information on a number of conditions though its platform NHS Choices. For mental health the NHS works with HealthUnlocked for sharing service user experiences and content. The website provides content and tools explaining the condition, symptoms, causes, diagnosis, and treatment. It also provides information for carers, service user experiences, scientific information on conducted clinical trials and clinical guideline recommendations, and an online community for peer communication and support. NHS Choices cover a diverse set of mental health problems, and are aimed at a broad readership.

The Netherlands offers a number of independent psychoeducation resources. For instance, Mental Vitaal (Netherlands) is a Dutch website developed and maintained by the Trimbos Institute which provides extensive information on mental health problems, symptoms, causes, diagnosis, treatment, coping mechanisms, and other relevant information for users, carers and professionals. PsychischeGezondheid/depressiecentrum provides information on depression as well as a self-administered questionnaire to detect the presence of depressive symptoms. Similarly, Depressief.nl provides information on depression, offered by Medistart NL, a private health organization providing information a number of health conditions. It includes information on different treatment options, on symptoms, and provides a list of FAQs.

Fitinjehoofd ('Fit in your Head', Belgium) is a Flemish psychoeducation website providing information, tools, and downloadable content on mental health and wellbeing. It has tools for combating negative thinking, difficulty concentrating, poor social skills, and focuses on building resilience and prevention of depression and anxiety in youth. The website is provided by the Vlaams Instituut voor Gezondheidspromotie en Ziektepreventie VZW (Flemish Institute for Health Promotion and Prevention).

In Finland, web-based patient support systems providing psychoeducation have been developed for people diagnosed with schizophrenia, and usability and acceptability of the web-based psychoeducation has been positive (Antilla et. al., 2012). One study evaluating this program reported that 79% of clients attended all 6 online psychoeducation sessions and slightly less (74%) completed the tasks assigned within the programme.

While a Cochrane review of psychoeducation e-resources for people with schizophrenia found no clear effects of psychoeducation on primary outcomes, the authors recommended high-quality research on the effectiveness of psychoeducation materials (Välimäki et. al., 2012). It should also be noted that this review focused exclusively on schizophrenia, the benefits of psychoeducation might differ depending on the mental health condition studied. In line with Valimaki et al (2012), Alvarez-Jimenez et al (2014) suggest that psychoeducation e-interventions should demonstrate benefit, particularly in enhancing client engagement and uptake of interventions.

> *Summary points for psychoeducation e-interventions:*
>
> *Psychoeducation resources are abundant for a number of mental health conditions, particularly in high-resource MS.*
>
> *Quality of information provided is, however, heterogeneous and there is not enough evidence to suggest that providing psychoeducation is superior to providing other forms of online support.*
>
> *Psychoeducation may be an important adjunct to and bridge to other forms of effective, evidence-based self-help and e-therapy programmes.*

E-SCREENING

E-health screening aims to assess mental health status and provide feedback, advice, and/or refer to the next phase of an intervention (for instance, if the consumer screens positive for depression, they may progress to the first CBT-based module of the intervention). Typically, e-health screening is administered through well-validated questionnaires. The feedback from the results of the questionnaire provided to users can be customised, making use of intelligent algorithms and provide links to relevant tools and resources. Screening can be provided as a stand-alone intervention, however it is often embedded within a larger programme, which may also include other e-health interventions such as psychoeducation, and a self-help programme. Screening tools can be used by people who suspect they may have a mental health problem, by people who want to gauge their relative level of stress or wellbeing, or by concerned loved ones or professionals who want to assess the signs and symptoms they have identified in their loved one.

In Europe, e-screening interventions are gaining ground – particularly for depression. Many psychoeducation resources (described above) offer self-administered screening tools, while some self-help or self-management programmes require a screening tool to be completed prior to enrolment in the online therapy or course. As the screening and/or monitoring tools are typically based on well-validated and established questionnaires (e.g. the Patient Health Questionnaire, the Beck Depression Inventory, the General Health Questionnaire), research has primarily focused on assessing the effect of the intervention courses or modules rather than on the efficacy of a particular e-screening tool.

Examples of current interventions:

The Depression Calculator (UK) is a mobile application with an online questionnaire based on the Patient Health Questionnaire (PHQ-9), which provides automated feedback based on results, and resources for further actions. The app was developed by patient.co.uk's IMedicalApps and is easily accessible with smartphones. Similarly, the National Health Service (NHS) in the UK provides a web-based electronic questionnaire for people with mood problems, depression, well-being and workplace stress. After completion of the questionnaire, the feedback provided to users takes into account high-risk situations (e.g. self-harm) and prompts users to contact specialised services as soon as possible.

Zelfhulpwizjer.nl (Netherlands) offers a number of web-based screening tools for gauging stress levels, panic, depression, and harmful alcohol use among adults. It uses a number of validated questionnaires including 4DKL (for distress), the PHQ for depression and anxiety, and the AUDIT-C (for alcohol use disorders). Feedback following completion of the questionnaire uses algorithms to provide links to the user to relevant tools and resources. Completion of the questionnaires can be done anonymously. The Trimbos Institute and Mental Share host and supply the platform.

Jestaatnietalleen (Netherlands) is a suicide prevention intervention offered in Dutch for persons with mental health complaints and suicidal tendencies, relatives and carers, and professionals. This intervention was created for the prevention of suicide among girls and adolescents of Turkish, Moroccan

and Surinamese-Hindustani descent in the Netherlands. It provides psychoeducation and questionnaires (which can be self-administered or carer- administered) to assess suicidal thoughts/behaviours. It requires an active Internet connection and anonymous use of the intervention is possible. It is funded by a coalition of foundations and companies in the Netherlands. The intervention is unique in catering to an ethnic minority group where suicide risk is high.

Drinktest.nl (Netherlands) is a free online screening test for hazardous, harmful and dependent alcohol use. It asks a series of questions and provides tailored feedback based on user input, related to the level of alcohol consumption and the effects of alcohol on mental health, physical health, and social relationships. It also refers the user to minderdrinken.nl (covered later), a self-help intervention used to reduce alcohol consumption. The website has shown to be effective in reducing alcohol consumption in the short-term and in channelling users with harmful levels of alcohol abuse to interventions such as minderdrinken.nl or national helplines.

> *Summary points for e-screening:*
>
> *There are a number of e-screening tools for various mental health conditions available in Europe, however these tend to be concentrated in high-resource MS.*
>
> *It is important that the e-screening tools are based on appropriate and well-validated questionnaires if the aim is to detect the presence of a mental health problem.*
>
> *E-screening can be an important pre-cursor to enrolment in an online self-help or self-management programme.*
>
> *E-screening tools are often free and easily accessible and therefore attract a number of unique website visitors, which could be an opportunity for enhancing user engagement with e-mental health solutions.*

SELF-MANAGEMENT E-INTERVENTIONS

A number of initiatives globally have been geared towards improving self-management e-resources (Karasouli & Adams, 2014). Self-management e-interventions can be preventive or treatment-oriented in nature; and aim to support people to manage their mental health problems and symptoms. Such interventions equip people with skills to manage their condition and/or encourage them to take ownership over their journey to recovery. Self- management interventions provide people with tools to allow them to self-assess and monitor their condition, establish goals, receive feedback and reminders about their ongoing care. A recent systematic review of self-management e-resources by Karasouli and Adams (2014) identified 8 studies for inclusion in their review, two of which were developed and/or piloted in Europe: '**Living with Bipolar**' (UK) and **SUMMIT** for depression (Germany). Both interventions are currently in their implementation phase. Living with Bipolar is a web-based self-management intervention for bipolar disorder which is currently in its implementation phase (Todd et. al., 2012) and SUMMIT (Supportive Monitoring and Disease Management Over the Internet) is an intervention strategy for people recurrent depression to extend symptom-free phases and reduce symptomatic phases. An RCT comparing the SUMMIT program is underway (Kordy et. al., 2013).

Examples of current interventions:

The SUPREME project (Europe-wide, coordinated in Sweden). The SUPREME project was conceptualized to promote public health in the EU within the 2009 work plan and mental health priority area, by addressing specific objectives stated in the second Health Programme (2008-2013). These concern: health security and promotion, reduction of health inequalities, generating and disseminating health information; developing partnerships for action to use the media and the internet for promoting mental health, preventing mental disorders and combating stigma, with a specific focus on young people; and for addressing the related challenges, such as suicidal and self-destructive behaviour. These issues were

addressed through the development, implementation and evaluation of a web-based, multi-cultural intervention specifically targeting adolescent mental health promotion and suicide prevention (described in detail on pages 49-51). Moreover a comprehensive report on best practices to promote mental health through the Internet was developed with the objective to make stakeholders aware of such issues and to promote further evidence-based actions in the future. Internet and media-based public health strategies targeting young people can be very cost-effective and have, because of their high accessibility, the potential of reducing health inequalities created by socioeconomic circumstances. The SUPREME (2014) project provided a model for Internet based mental health promotion and suicide prevention and showed that the SUPREME generated Internet based intervention is effective in improving mental health of adolescents.

IFightDepression (Europe-wide) is a self-management resource for depression and an initiative of the European Alliance against Depression. It consists of a self-administered test as well as an online guided--self-management programme (which required a referral letter for enrolment) that helps people with limed to moderate depression to self-manage symptoms. The intervention also provides information and e-resource on causes, signs and symptoms of depression as well as suicidal behaviour. These resources were developed and implemented by the PREDI-NU Consortium and supported and funded by the CHAFEA. Implementation and evaluation of this self-management resource is currently underway.

Moodgym (Netherlands, originally developed in Australia) In the Dutch version of the intervention, Molemann Mental Health (A Dutch service provider) offers the online intervention, which has been translated from English into Dutch. Moodgym focuses on preventing depression and consists of 5 modules, an interactive game, anxiety and depression assessments, downloadable relaxation audio, a workbook and feedback assessment. It uses flash diagrams and online exercises, and its modules are based on CBT principles. It's a self-guided 5-session course combined with psychoeducation as well. There has been a number of research studies showing MoodGym to be beneficial in a variety of contexts (e.g. Christensen, Griffits, & Jorm, 2004). Importantly, MoodGym has been shown to be equally effective in decreasing depressive symptoms for individuals involved in using the system with and without a telephone tracking program designed to increase adherence and decrease attrition (Farrer, Christensen, Griffiths, & Mackinnon, 2011).

Kleurjeleven or "Colour Your Life" (Netherlands) is a self-management intervention based on CBT principles geared towards older adults with mild depressive symptoms. Kleurjeleven uses 8 modules, completed weekly, with an additional final revision module 12 weeks after starting the intervention. It equips users with assertiveness skills, coping with stress, problem solving and planning skills. It can be used in combination with other psychoeducation interventions (e.g. Mentaal Vitaal, covered earlier) and has been disseminated in English, Flemish and Dutch to reach users in the Netherlands and Belgium. A unique aspect of the intervention is its certification by the Centre for Health Living in the Netherlands as an effective and evidence-based intervention. It's recommended as a first line treatment in multidisciplinary guidelines in the Netherlands, and is reimbursed by almost all the health care insurers in the Netherlands. It has demonstrated efficacy in a number of clinical trials and research studies (de Graaf et al., 2009; de Graaf, Huibers, Riper, Gerhards, & Arntz, 2009; Spek et al., 2008; Spek et al., 2007; Warmerdam, van Straten, Twisk, Riper, & Cuijpers, 2008). There is now funding from the Dutch Innovation funds to implement and evaluate the intervention in primary care as it has been hardly implemented in this setting despite it being the care setting where the majority of Dutch citizens present with depressive symptoms. This implementation phase focuses on conducting a process evaluation and cost-effectiveness study (with funding until 2016). One of the main aims of the implementation is to evaluate patient-level health gains and cost-effectiveness in order to make a business case for continuation and consolidation of implementation.

A number of existing self-management interventions target depressive symptoms among clients with comorbidities or co-existing health conditions. For instance, Robbin (Netherlands) is a unique, easily accessible Dutch mobile application designed to reduce stress and depressive symptoms and increase resilience among people undergoing treatment for breast cancer. It uses principles of positive

psychology, CBT and mindfulness. The application aims at strengthening resilience, improve the social interactions with peer and/or family and friends, facilitate peer-to-peer support, access to entertainment and multimedia materials posted by people with cancer, monitoring of mood and of the at risk status (e.g. 2 weeks after chemotherapy). Users can customise the intervention and also integrated it within various social media applications. There has not been any evaluation of its efficacy through research trials. Diabetergestemd is a web-based self-management programme based on the Kleur je Leven intervention and tailored for people with diabetes and depression. The programme consists of 8 guided modules based on diabetes-specific CBT, with written and spoken information provided. Certified health psychologists serve as coaches and provide feedback on homework assignments. Its efficacy has been demonstrated in several trials (van Bastelaar, Pouwer, Cuijpers, & Snoek, 2009; van Bastelaar, Pouwer, Cuijpers, Riper, & Snoek, 2011; van Bastelaar, Pouwer, Cuijpers, Twisk, & Snoek, 2008; van Vugt, 2012) however, acceptability among users has been mentioned as an aspect to enhance for further refinement and tailoring of the intervention.

ITAREPS (Information Technology Aided Relapse Prevention in Schizophrenia) (Czech Republic, Slovenia, UK) is a web-based self-management intervention for quick detection of early warning signs for relapse of a psychotic episode for people diagnosed with schizophrenia. A mental health professional (psychiatrist) refers the user to this intervention, which carers can join as well (Spaniel, 2008). Questionnaires are used to provide information for monitoring health status, and if the score obtained from the questionnaires reaches a certain threshold, mental health professionals are alerted to the potential crisis situation and/or relapse by SMS or e-mail, prompting them to provide early intervention. This intervention has been rolled out in a number of MS including Czech Republic, Slovenia and the UK and translated into local languages. The intervention is owned by Academia Medica Pragensis and is funded by a number of for-profit organisations. ITAREPS' efficacy in reducing hospitalisations has been assessed through a quasi-experimental study (Spaniel et al., 2008 1, 2) and an RCT, however the latter did not detect any significant differences in hospitalisation rates between the intervention and control groups. This was primarily attributed to the deviance from the protocol by investigators (i.e. psychiatrists) (Španiel et al., 2012) and thus efficacy for this intervention still needs to be demonstrated.

> *Summary points self-management e-interventions:*
> *Self-management interventions for mental health problems have been developed in a number of MS, particularly by multi-country consortiums and through cross-border dissemination of successfully implemented programmes.*
> *Effectiveness of self-management programmes in Europe has been strong, evidenced through a number of randomised controlled trials, recommendations in clinical guidelines, and sustained financing and inclusion into packages of care by insurers.*
> *Further translation of these successful programmes is required in other MS.*

SELF-HELP E-INTERVENTIONS

Self-help e-interventions provide people with mental health problems with tools and techniques to tackle their health problems on their own; with the end goal of improving their health and helping them modify their behaviours. Exercises are typically based on cognitive behavioural therapy (CBT), problem solving, family and supportive therapies, positive psychology and mindfulness. The majority of these interventions are combined with psycho-education, screening and self-management interventions and peer-to-peer support. Self-help interventions focus on prevention of mental health problems, their treatment and relapse prevention.

Examples of current interventions:

In Sweden, the Free from Panic (Fri fran panic) self-help programme has been designed for people with panic disorders. It is an online (and offline, on a CD-ROM or via downloadable content) self-help intervention using CBT techniques. One version of the programme provides the self-help modules

while an upgraded version provides psychological support by email in addition to the modules. The programme also provides a number of frequently asked questions (FAQs) and answers from previous users.

Help4Mood (Scotland, Spain, Romania, Italy, England) is a well-known self-help intervention for people with major depression in Europe. It is funded by the European Commission (FP7 Framework) and provides support through an Avatar, using non-invasive sensor technology to monitor mood, thoughts, and physical activity and voice characteristics. It also provides prompts in terms of complying with CCBT modules and stimulates behaviour change. The Avatar can interact with the user in a number of ways such as through verbal communication, body movements and facial expression. The program also has a decision support system embedded in that it interprets collected data and facilitates the development of a treatment plan between users and professionals. The program has the following components: ongoing assessment/monitoring of mood, identifies signs of relapse, helps enhance treatment compliance, and provides therapeutic interventions. Help4Mood's major strength is its cross-border adaptation and implementation, as it has been implemented in Scotland, Spain, Romania, Italy and England and translated into four languages. The intervention's efficacy has not been demonstrated although willingness for users to engage with the programme is high (Burton, n.d.; Wolters et al., n.d.; Wolters, Blanco, Sanitari, & Joan, 2012).

Psyfit (Netherlands) is a website providing a programme to help improve overall wellbeing and reduce stress. It consists of 7 unguided CBT, MF and PP self-help modules, a forum, and 12 self-tests. The intervention is supplied and owned by Mental Share, Arcon and the Trimbos Institute, and is conducted at home online, and anonymous use of the intervention is possible. Previous research has found that at 2 month follow-up there is a higher level of wellbeing, vitality and perceived health status and reduction of symptoms of anxiety and depression. At 6 month follow-up there was a reduction in symptoms of depression and anxiety (Bolier et al., 2013).

Pick your Happiness (Pluk je geluk, Belgium) is a Flemish self-help intervention developed in Belgium focused broadly on strengthening mental well being for adults. It is a module-based intervention which can be done as a stand-alone intervention or in combination with automated advice and weekly informational emails. There is an online library with downloadable content and a user forum to discuss issues and solutions. This intervention was based on the Dutch intervention Psyfit, and is supplied by Christelijke Mutualiteit.

Beating the Blues (UK) is an international self-help programme for adults with mood and anxiety disorders. It is an interactive programme using animations, videos, case studies and voice-overs. The programme contains 8 CBT sessions, which are typically completed weekly. The content of each 50-minute CBT session is tailored to the users needs and content evolves over time. Sessions focus on identifying specific treatment goals, identifying and challenging unhelpful thoughts and core beliefs, and understanding and modifying attributional styles. Users also develop behavioural skills in planning, problem-solving, graded exposure, activity scheduling, and sleep management depending on needs. The final module focuses on action planning and relapse prevention. The CBT modules include homework tasks for each session. The intervention can be blended with traditional (face to face care) both at the primary care level (with GPs) and the secondary care level (with mental health professionals). Health care providers can access progress within the programme and if the user completes the program in a clinic, clinic staff can provide additional support as required. When accessed online, progress through the programme is monitored by a healthcare professional support worker who may provide scheduled telephone support and advice. The intervention was developed in the UK and is available in English. The intervention has since been disseminated for use in the Netherlands, the US, Canada, New Zealand and Australia. The intervention has shown to be effective in a number of papers, including an RCT, cost-effectiveness study, and open-trial (Cavanagh, 2006; Hind, 2010). It has also been successfully implemented in a number of different care settings throughout the UK and with different cadres of health workers within the National Health Service.

113Online (Netherlands) is a Dutch online suicide prevention and intervention programme. It offers a website with information about suicide and mental health problems, offers access to a telephone helpline for those who are suicidal, their relatives and bereaved next of kin. It also provides crisis intervention by telephone or by chat, self-tests, and brief solution-focused psychotherapy. The online information provided is supplemented by the ability to consult professionals with questions by phone or email as required. Professionals include psychologists and trained volunteers, supported by psychiatrists, and consultations are based on professional expertise, evidence and national guidelines. The self-help programme consists of 6 modules based on cognitive behavioural therapy. The self-tests include self-report questionnaires (for suicidal ideation, depression and anxiety) which result in automated feedback/advise depending on the scores (Mishara & Kerkhof, 2013). Finally, peer support forums are available on the site, as well as 24/7 hotlines and 13/7 chat hotlines, operated by well-trained volunteers. As a follow-up to crisis intervention or self-assessment, or through applying on the website, 113Online offers solution-focused brief therapy for suicidal clients, which use chat or email as a method of communication. Efficacy through research has yet to be demonstrated; however preliminary evaluation and qualitative results show that 113Online offers benefits for clients through therapy, through the chat, and through the telephone line. There is however a high dropout rate from the 8 chat sessions offered. With regards to acceptability of the intervention, 60% of online users are not in regular care elsewhere, viewing 113Online as an acceptable alternative to face-to-face health care. Thus, 113Online reaches people who have not been reached by routine care, particularly due to the perception among users that such a platform as 113Online offers more autonomy, less shame and more simplicity (Mishara & Kerkhof, 2013; Mokkenstorm, Huisman, & Kerkhof, 2012). 113Online receives core funding from the Ministry of Health, Welfare and Sport in the Netherlands.

Gripopjedip (Netherlands) is an online intervention targeting mild to moderate depressive symptoms in adolescents and young adults between the ages of 16 and 25. The intervention consists of 7 modules focused on social skills training and CBT-focused modules. An e-coach provides support throughout the modules and there is also psychoeducation provided on the site. A group of institutes, foundations and service providers collaboratively provide and supply this intervention. There has been an RCT demonstrating efficacy of this intervention (Zanden, Kramer, Gerrits, & Cuijpers, 2012).

Minder Drinken ('Drinking Less', Netherlands) is an online self-help program for Dutch adults who want to reduce their alcohol consumption. The intervention is free and can be used anonymously. The intervention consists of a preparation phase, with questionnaires and to get an overall picture of the underlying motivation for drinking; a decision phase, when users make decisions and formulate concrete goals about their alcohol consumption and the action phase, where users keep track of daily alcohol consumption in a logbook (online), complete exercises, and are provided with information to help reduce or abstain from alcohol consumption, and prevent relapse. Six weeks post-registration in the course, progress can be assessed and the goals can be adjusted (e.g. upgraded to more intensive guidance). Users can pose questions to trained employees managing the interventions' infoline, and can ask questions or post experiences in the forum. There is good evidence of the interventions efficacy (Riper et al., 2008, 2009), it is a free interventions and easily accessible for anyone with Internet access.

Alles onder controle (Netherlands) is a self-help programme geared towards mild to moderate anxiety and depressive symptoms for adults above the age of 18, and is based on 5 guided self-help modules based on problem-solving therapy. The general idea of this intervention, which is called self-examination therapy, is that participants learn to regain control over their problems and lives by (1) determining what really matters to them, (2) investing energy only in those problems that are related to what matters, (3) thinking less negatively about the problems that are unrelated and, (4) accepting those situations that cannot be changed. The intervention is coordinated and developed within an academic setting (VU University Amsterdam) and has shown to be effective in a number of robust research trials (Seekles, van Straten, Beekman, van Marwijk, & Cuijpers, 2011; van Straten, Cuijpers, & Smits, 2008). As the intervention has shown to be effective, it has and is being further tailored for different health conditions (e.g. multiple sclerosis, cancer) and for different vulnerable groups (e.g. ethnic minorities in the Netherlands) (Ünlü Ince et al., 2013).

Stopsuicide.nu (Netherlands) is a suicide prevention website, providing psychoeducation specifically for adolescents from Surinamese origin. The website is an initiative of the VU University Amsterdam and was initially developed for research purposes. It provides information for people worried about a loved one who might be at risk of suicide, and it also provides information for those who have had suicidal ideation or thoughts. The website provides an online course with three self-guided modules based on CBT and cognitive therapy, and includes culturally relevant tips and examples, exercises, and assignments (e.g. crisis plan template, diary).

> *Summary points for self-help e-interventions:*
> *Self-help programmes in Europe have been well developed and are offered for a number of mental health problems, with a number of different fee options for use (e.g. out of pocket payments, financing by insurers, free use of programmes).*
> *Self-help programmes are attractive to users as they are easily accessible, avoid stigmatisation and discrimination, and can be taken at one's own pace and comfort level.*
> *Despite the interactive and attractive nature of self-help programmes, continued user engagement in programmes requires further attention, as many users do not complete the full programme.*
> *Sustained financing of these programmes is vulnerable as many are initially financed through research grants for demonstrated proof of efficacy and impact.*

E-THERAPIES

E-therapies are therapies (based on a relevant theoretical framework and/or principles) and provided through devices such as mobile phones, computers, tablets or TV. E-therapies can be administered either in a group or on an individual level, and be moderated/guided by a mental health professional. E-health therapies can be provided as stand-alone guided interventions or blended with traditional forms of care. Most of these interventions are combined with psycho-education, screening and self-management interventions, self-help and peer-to-peer support (e.g. forums, chat groups). While e-therapies can be anonymous, many platforms do not offer the option of anonymity if the client is linked to an insurer and is reimbursed for the program through insurance, or if the client has a routine service provider involved, such as a general practitioner (which entails the blended care approach).

Examples of current interventions:

Mastery over Dementia (Dementie de Baas) is a Dutch e-therapy for carers of people with dementia. It aims to reduce depressive and anxiety symptoms and build resilience. It is based on CBT and problem-solving principles and provides tools and exercises with information about behavioural problems, challenges to providing care to persons with dementia, which is supervised by a psychologist who acts as a digital coach. The intervention consists of 8 core lessons, a revision lesson and a booster-session one-month post-completion of the course. The sessions are assignment-based and there is also a care journal, which helps the carer gain insight into their emotions about their situation. Evaluation has shown the intervention to be effective however analyses are preliminary. The website for mastery over dementia is developed by the Trimbos Institute, Stichting Geriant and Alzheimer Nederland.

Some Member States have developed specific e-interventions for vulnerable groups, such as those affected by trauma. In Germany, lebenstagebuch is a standardised, internet-based cognitive behavioural writing therapy, based on the principles of integrative testimonial therapy. The intervention targets older people (65+) who suffer from long-term psychological effects as a result of exposure to traumatic events during and after World War 2. The intervention is not offered to people requiring more intensive psychological and/or medical support (e.g. those at risk of self-harm or suicide). It is a 6-week therapy with 3 components (biographical work, self-confrontation and cognitive restructuring and farewell) during which eleven texts are written, two articles per week, for 45 minutes. Users receive personalised feedback from clinical psychologists trained in this particular approach. Additional feedback and/or

support can be obtained by telephone or Internet. This intervention is not carried out in conjunction with other therapeutic approaches. Results from research trials to date have shown that the intervention has resulted in a reduction of PTSD symptoms (Knaevelsrud & Maercker, 2007; Wagner, Knaevelsrud, & Maercker, 2006).

Uw persoonlijke internetbehandeling (Netherlands) is an internet-based treatment which traditionally is therapy provided face-to-face. A regional mental health services provider (GGZ Delfland) provides this e-therapy option. The intervention consists of 8 treatment contacts provided via a secure platform, guided by a trained therapist/practitioner. This is a blended care intervention, meaning that once every 3 weeks the client is required to come to meet in person with a practitioner. A referral from the general practitioner is required for enrolment in this option, and costs are covered by insurance companies in the Netherlands as part of the basic package of care. Treatment sessions are based on evidence-based therapies but the effectiveness of this particular model of blended care has not been demonstrated.

A number of websites and/or service providers offering e-therapies are no longer in existence – this may be due to lack of sustained funding or due to limited demand for e-therapies or due to poor adherence rates to e-therapies.

> *Summary points e-therapies:*
> *E-therapies are diverse, and not all offered e-therapies in Europe are based on evidence-based (face-to-face) psychotherapies. E-therapies are only offered (and evaluated) in high-resource MS.*
> *There is fragmentation in e-therapies, consolidation of an e-therapy platform across service providers within a particular country and in the local language may be helpful to reduce duplication of efforts and pool funding.*
> *E-therapies in a blended care format appear to be beneficial for clients and practitioners and can facilitate communication between primary care (general practitioners), users, and specialised care (mental health professionals).*

TELEHEALTH CARE

Telehealth has long been promoted as an e-solution to allow for anonymity (which lowers the threshold for accessing care for people who would otherwise not engage with health services), as well as for improving access to care, particularly for vulnerable populations and difficult to reach geographical regions. Telehealth delivers information or therapy through tele-communication, which can range from face-to-face services through web conferencing, to SMS message contact, e-mail contact, and file sharing. The benefit and promise of telehealth is that care can be provided at a distance, eliminating barriers to accessing care such as traveling time, costs of travel, telephone costs, but also direct costs of care, particularly linked to crisis care that can be mitigated through telehealth. Furthermore, in countries where Internet access is poor, telehealth can offer mobile phone consultations or using SMS messages which can improve access to care.

Examples of current interventions:

PAL4 iPad (Netherlands) provides support in Dutch for people with mental health problems and/or dementia and their care-givers, giving low threshold access to consultations/counselling with mental health professionals using an iPad app for online video consultations. It also allows professionals from multidisciplinary teams to communicate via integrated FaceTalk, a secure and multiuser tele-communication feature. Evaluation of the app's effectiveness has not been carried out. The supplier is GGZ Lentis.

Vicasa Management System (Netherlands) is a telehealth intervention which is multi-functional and can be used for six main activities: 1) Regular Consultations between health professionals and service users through screen-to-screen communication, involving pre-arranged consultations focused on monitoring

treatment and discussing progress, additional to the face-to-face consultations; 2) Joint consultation call between the case manager, the service user and the psychiatrist in charge, primarily used for crisis management; 3) Bulletin board allowing for messages to be passed on to the client by the case manager or other professionals involved in the case and an agenda function for making necessary appointment (both service user and professionals can initiate appointments); 4) Crisis care option allowing for 24-hour emergency screen-to-screen contact between the service user and relevant professionals, additional to telephone emergency line, allowing for better assessment of the situation and ways to address it. Additionally, this approach has a calming effect on the service user, so that the situation does not deteriorate; 5) Opportunity for service users to call one another, users using a digital calling network. Access is restricted to a pre-agreed contact list of service users; 6) Screen-to-screen communication between carers and health professionals. A randomised controlled trial was carried out between 2008 and 2010 and showed that service users were more satisfied with the care provided through telehealth than through face-to-face interventions (Hulsbosch, Cate, Nugter, & Kroon, n.d.). For other outcomes such as quality of life or social functioning, there were no differences between the two groups. The intervention is supplied by a private company (Simac) and a regional mental health services organisation (GGZ Noord Holland Noord).

Finally, The **NHS 24 Scottish National Telehealth and Telecare,** and the Scottish DALLAS (Delivering Assisted Living Lifestyles At Scale) (UK, Scotland) provides a range of telehealth and telecare services using multi-channel approaches applying telephony (mental health support, cognitive behavioural therapy, health information), clinical videoconferencing (for telemental health, long term conditions available at home and in prison settings) and digital TV (with a wide range of health information and advice, interactive health questionnaires, a GP appointment service). In addition, it also runs the Scottish Assisted Living Programme that provides digital home monitoring services and devices. The intervention caters to patients and carers across Scotland with mental health problems, dementia, or want to enhance their wellbeing or lifestyles.

> *Summary points telehealth care:*
> *Telehealth solutions are embedded into many services across Europe; however, funding for implementation and transitioning to the mainstream is still minimal.*
> *Offering telehealth solutions to lower resourced MS is an important next step.*

SERIOUS GAMES

Internationally, and very recently, enthusiasm has emerged in the medical and educational fields for applied or "*serious*" games as learning tools. Serious games are video games used for non-leisure purposes and are expected to surpass the multi-billion dollar entertainment games industry in the next decade (Information Resources Management Association, 2015) Across the Europe, 10s of millions are being spent by governments and businesses to support innovations in gaming technologies that can be shared across disciplines for diverse learning purposes and the mental health field is poised to benefit enormously from a similar transformation. Although very few serious games for mental health concerns are currently developed, they hold particular promise for boosting the effectiveness of e-mental health approaches. Specifically, the main limitations (as we discuss in more detail below) of self-help, self-management and psycho-educational e- approaches is that these programs are usually delivered through static websites, they are didactic in character, not particularly engaging, and they require a great deal of initiative from participants. Thus, low retention and adherence are major problems that limit effectiveness. Serious games are designed to address engagement and retention problems by fun and immersive designs that ideally nevertheless retain evidence-based techniques and strategies.

Examples of current interventions:

PlayMancer is an EU initiative to develop a video game prototype for treating impulse control disorders (mainly behavioural addictions) (Fernandez-Aranda et al., 2012). It was developed in Spain at the

Department of Psychiatry (University Hospital of Bellvitge, Barcelona) and aims to train adult players to increase emotional self-control and more effectively regulate impulsive behaviour problems. A multidisciplinary team of clinicians, engineers and programmers developed the game, by considering user requirements and emotional reactions as well as personality profiles of the targeted patients. Studies that examine the effectiveness of the game are ongoing, but preliminary evidence is promising.

Mindlight was developed based on research on the causal mechanisms and evidence-based clinical techniques associated with anxiety and its reduction. It is a 3-D, PC-based video game that uses neurofeedback mechanics as its core change mechanism. With immersive art and music, MindLight trains the player to use his/her own mind to overcome fears. EEG brain waves recorded directly from the player through a commercially-available headset are the raw data that are inputted into the game. Through neurofeedback mechanics, the game environment responds to how the player is allocating his/her attention and the extent to which s/he is relaxing in the face of threat. The game was developed in the Netherlands and was a collaboration between The PlayNice Institute and GainPlay Studios. Several randomized controlled trials in schools and clinics, conducted at the Radboud University Nijmegen, are underway, with preliminary pilot results suggesting promising outcomes for children with elevated levels of anxiety.

Games4Resilience are a set of computer games for the promotion of (child and adolescent) mental and behavioral health and substance abuse prevention. The games were developed by one of the professors of Clinical Child and Adolescent Psychology at University of Vienna at the Games4Resilience Lab. The games are based on evidence-based principles and strategies for the promotion of child and adolescent mental health and addiction prevention. There are also games that were designed to be used to support treatment of mental health disorders such as attention deficit hyperactivity disorder, anxiety disorder, depression and conduct disorder. One example of a game in this system is MindBook, a computer game based on cognitive behavioural training for children with depression. The game uses evidence-based cognitive-behavioural therapy strategies and a simulated social network similar to Facebook to impart skills through psychoeducational elements that remain engaging and fun for players. Flins Adventure is a parent-management game that helps teach effective parenting strategies that prevent and treat conduct problems in children and adolescents. The games are freely available as part of psychological service delivery.

Braingame Brian is a computerized game, home-based training for children and youth with Attention Deficit Hyperactivity Disorder (ADHD). It was developed by the Task Force ADHD & Computer in the Netherlands in collaboration with H. de Groot's multimedia company Shosho in Amsterdam. The Through increasingly difficult puzzles and "gamified" tasks, the game trains executive functioning (working memory, cognitive flexibility, inhibition). Braingame Brian consists of 25 training sessions, 35 − 50 min each, within which the player creates inventions by completing a series of executive function training tasks. Children with ADHD have a very difficult time with similar training tasks outside a game context because they become easily bored, frustrated and lack motivation to improve. The game elements in Braingame Brian are designed to increase retention and adherence to the training protocol for long enough periods for the cognitive training to impact on the core deficits ADHD children experience. A recent randomized double-blind placebo controlled trial (Dovis et al., 2015) showed the game was effective at improving key executive functioning skills (visuospatial and working memory, inhibition). The game seems to be a promising strategy for treating children with ADHD, one of the most prevalent mental health disorders in children.

Summary points serious games:
Serious games for mental health have only just begun to be developed and very few have been validated.
Serious games are designed to address engagement and retention problems by integrating evidence-based clinical techniques with fun and immersive designs.
These games are expensive to build to a quality level that will keep players engaged and they ideally require a multi-disciplinary team to design and evaluate them.

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3. CHALLENGES FOR E-MENTAL HEALTH IN EUROPE

3.1. Challenges for mainstreaming e-mental health

SCALABILITY & DISSEMINATION

While over the last decade many e-mental health projects and initiatives have been developed, many of them have failed to be scaled-up. One of the challenges is that many e-mental health interventions have been developed within a narrow and controlled research environment, resulting in limited implementation in practice. This means that there was no plan as to how operational (running) costs would be maintained and how upgrading of the intervention would be financed at the end of projects. This is a particularly crucial consideration in the context of interventions that have been financed for the purposes of a short-term research project.

There is a lack of sustainable funding to see the process through from implementation to mainstreaming. As such many e-mental health interventions remain at the pilot study level without substantial buy-in from stakeholders required for scale-up. One implication of this status quo is that the recognition of e-therapies and e-health prevention initiatives among health care financiers and insurers is limited.

Another challenge is that health care financiers and insurers often do not trust digital interventions and have concerns with regards to liability implications of providing e-mental health interventions. This is particularly the case as there is limited regulation of e-mental health interventions, posing a risk for companies to invest or take responsibility for covering of such interventions.

Furthermore, scaling up efforts are hindered by high demands on research on effectiveness of e-mental health interventions. Technological developments emerge at high speed, and e-Health interventions struggle to keep up with these changes. The implication of this approach is that while e-Health solutions are often innovative, and entail implementation of experimental practices, the gap between the discovery and development of the interventions on one side and speed of their implementation and dissemination on the other side, is too big. This is also known as the O-gap, or the transition from prototype and pilot to operations.

Finally, the sustainable dissemination of e-mental health interventions is hampered by limited business case development by developers of interventions and researchers and the limited understanding of how to cost e-mental health interventions long-term implementation.

ACCEPTABILITY AND UPTAKE AMONG PROFESSIONALS

E-mental health interventions are often perceived as a threat by professionals, attributable to several factors. For instance, many mental health professionals fear face-to-face treatment they provide will be replaced by e-mental health, with important implications for funding of current face-to-face interventions, which they fear will be cut in favour of e-health which are cheaper.

At the same time, many professionals resist introducing e-mental health into their routine work because of the perceived implications on quality of care. On one side they have concerns with regards to the quality of the e-health intervention. On the other side, they do not want to give the perception to patients that they are "deserting them" or trying to get them to stop coming to see them face-to-face. Furthermore, they are concerned that e-therapies will generate more work and contact possibilities with their clients while they do not have the time to increase the contact and monitoring.

Finally, most mental health professionals did not have any support or and training on how to use e-mental health interventions in daily practice, addressing considerations regarding scope of e-mental

health, as well as ethical issues and issues around professionals – patients – families relationships which are profoundly impacted by the use of e-mental health.

REACHING MUTUALLY BENEFICIAL AGREEMENTS WITH PRIVATE TECHNOLOGY SECTOR

In contrast to other sectors and cross-sectoral collaboration initiatives, there are relatively few voluntary agreements with IT industry on business models.

While many governments, public authorities and EU authorities fund development of e-mental health interventions, some of the most effective e-MH interventions require funding well above the funding abilities of the public sector, in particular serious gaming. E-mental health experts and researchers engaging with IT and gaming industry are faced with a number of concerns such as: liability implications, intellectual property rights, veto rights over pulling the plug on ineffective interventions, exploiting the intervention to other markets and licensing practices, profit sharing, ethical implications. Furthermore, there are no clear regulation on data access rights and data protection rights, and linkages with healthcare providers.

There are currently no agreements on how will local and international providers of innovative e-health solutions find sustainable financing and business models that allow them to attract the necessary capital for scaling up projects.

QUALITY ASSURANCE AND ETHICAL CONSIDERATIONS

Users of e-mental health interventions often have limited information about the quality of the e-health interventions they came across, about the financial options for covering the costs of using these interventions through health insurance, about privacy and data ownership, as well as about the options for integrating such interventions with other (face-to-face) forms of treatment.

The quality of e-mental health interventions are not regulated by health authorities in a similar manner with the other forms of health care and are not aligned with national health authorities health standards. The majority of these interventions are not covered by health care or insurance. As a result people wanting to use these interventions are often required to pay for interventions out of pocket and are not aware of the quality of what they are purchasing. This is because there are many applications and information available online which are not regulated by health care providers or government.

As there is so much information and applications out there available for purchase and use, there is a risk that such interventions may not actually have a benefit for service users. Therefore having a quality seal of reliable interventions that demonstrate favorable outcomes for service users is critical in order to ensure that these are the interventions which are widely disseminated across platforms and contexts.

CROSS-BORDER TRANSFERABILITY

Many of the interventions reviewed in this report have been developed and implemented in a select group of Member States, but they could be used also in other countries. At the moment, there are no agreements or procedures in place across EU Member States on how to transfer e-mental health interventions from one health care system to another. This is a lost opportunity, and leads to duplication of effort and limits the implementation of effective interventions. Moreover, this is a lost opportunity for bridging the gap in mental health care particularly in lower-resource settings or for minority and ethnic groups present in various European counties.

In order to have broader reach and implementation in the EU, they need to be translated and/or adapted to the local language, culture and specificities of the health system. Some multi-country consortiums do address this and implement interventions across countries (e.g. PREDINU, Beating the Blues, SUPREME, and YAM) and some interventions have been adapted across a number of MS (ITAREPS,

Kleurjeleven, Beating the Blues, MoodGym). More trans-European initiatives of this kind would be beneficial in adapting existing evidence-based interventions to other contexts.

AWARENESS OF AVAILABILITY OF E-HEALTH INTERVENTIONS

Even in countries where e-health interventions are available, the level of awareness of the target population regarding their availability remains quite limited. The dissemination strategies of many e-interventions are poor, making it hard for the target groups, be they health professional or general population, to find e-Health interventions. They are often hidden within larger websites, making it hard for to reach them. As such, the awareness of availability of e-mental health interventions remains low. Many clients not aware that self-management tools and therapies exist as prevention and treatment means in digital formats.

3.2. Challenges in design and development of interventions

Despite the benefits that the interventions reviewed have demonstrated, there are a number of challenges hindering the ability to mainstream e-mental health tools and platforms into health systems across Europe.

LOW ADHERENCE AMONG USERS

Consistently mentioned as a pitfall across interventions in participating Member States as well as globally is the low adherence to e-mental health programmes (e-therapies, online guided self-help interventions, self management programmes). This serious barrier to uptake and impact is currently occupying research groups across Europe (Andersson, Carlbring, Berger, Almlöv, & Cuijpers, 2009; Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Mohr, Cuijpers, & Lehman, 2011) who are looking to tailor and adapt interventions as necessary in an effort to increase adherence.

DESIGN FOR ENGAGEMENT AND RETENTION

Individuals who use interactive media and technology on a regular basis (particularly, but not exclusively adolescents and young adults) have become accustomed to seeing and interacting with highly engaging, attractive and immersive contexts. If e-mental health interventions are going to stand a chance of improving the mental health of clients and end-users in the coming decades, they will need to be designed to stimulate, engage and retain users' attention. Many of the e-interventions reviewed in this report included an immense amount of rich information and some had visually attractive graphics; nevertheless, attrition and adherence remain barriers. Web designers and online businesses alike track "bounce rates" (how quickly a user leaves a site once they get there) and "return visits" (how many times a user returns to a site) and these simple metrics indicate that, for example, most self-help and psychoeducation programs do not hold attention and pull users back. To improve engagement and retention, scientists, clinicians and intervention experts will need to increasingly partner with interactive media experts.

HIGH QUALITY EVIDENCE-BASED RESEARCH

There are very few high-quality study designs that have been applied to evaluating the efficacy of e-mental health interventions. In part, this is simply due to how early in their development these forms of intervention are. However, because of the relatively open access to many of the e-interventions reviewed, the risk is that programs are being used with little to no effect at best, or with iatrogenic potential at worse. To be able to accurately weigh the human and cost benefits of e-mental health interventions in comparison to alternative delivery models, these evaluations need to be undertaken

across all MS. Differences between MS in outcomes and implementation barriers are expected, depending on cultural and language differences, thus comparison studies between and within different countries are important.

LACK OF QUALITY INFORMATION FOR END USERS

With the increased availability of e-mental health interventions comes an increased demand for quality standards. Even when an individual is aware of an e-mental health intervention, there is limited available information about the quality of the intervention and limited information about practical aspects such as privacy, data ownership, and financial options for covering the cost of use. It is also difficult to determine which websites are trustworthy, and which websites provide reliable information, two aspects which are crucial when determining whether or not to enrol for a particular intervention or trust the information provided on an e-mental health platform or website.

4. RECOMMENDATIONS FOR ACTION ON E-MENTAL HEALTH IN EUROPE

4.1. Recommendations for action for mainstreaming e-mental health

1. INCLUDE E-MENTAL HEALTH INTERVENTIONS ALONGSIDE WITH FACE-TO-FACE INTERVENTIONS INTO PUBLICLY FUNDED HEALTH SERVICES, AND ALIGN THEM WITH NATIONAL HEALTH STANDARDS AND PRACTICES

The gap in mental health care remains substantial in both high and low income settings. E-mental health interventions can facilitate the narrowing of this treatment gap. In primary care e-Mental Health interventions can improve the early detection of mental health problems and increase the reach of the evidence-based treatment and care. The can be a key resource for staff in primary care, facilitating the integration of mental health in primary care. Furthermore, there are many arguments for integrating e-Mental Health interventions in the provision of specialized mental health services, as they can bring a valuable contribution to the management of long-term mental health problems, from the early stages of identification, till recovery and reintegration. They can lower the threshold for screening, monitoring and management, they can contribute to client empowerment; improve the efficiency of service delivery and of the quality of care. Considering the advantages of providing e-mental health interventions as presented in this report, it is important to offer and ensure financial coverage of e-mental health interventions in different formats at different levels of care in a similar manner with face-to-face interventions.

2. INITIATE VOLUNTARY AGREEMENTS WITH ICT, GAMING INDUSTRY AND OTHER RELEVANT PRIVATE SECTOR PARTIES ADDRESSING ETHICAL ISSUES, INTELLECTUAL PROPERTY AND DISSEMINATION PRACTICES

Collaboration with ICT, gaming industry and other relevant private sector parties is crucial to the sustainable development implementation of e-mental health interventions. Such voluntary agreements need to address key issues such as liability implications, intellectual property rights, veto rights over pulling the plug on ineffective interventions, exploiting the intervention to other markets and licensing practices, profit sharing, ethical implications.

Such voluntary agreements hold benefits for both the private sector and the public health sector. For instance, the private sector can benefit from content expertise required to build the application or digital solution, which in turn may help enhance its profit potential if mainstreamed into routine care within a health system. The public health sector and research community benefit from the technological expertise found in the private sector for development and adaptation of e-mental health interventions, as well as potentially benefit from any profit sharing stipulations set out in voluntary agreements.

3. RAISE AWARENESS AND INCREASE CAPACITY OF (MENTAL) HEALTH PROFESSIONALS TO INTEGRATE E-MENTAL HEALTH IN THEIR REGULAR PRACTICE

Raising awareness about the benefits of using e-mental health interventions on practice as well as patient-level outcomes is a key strategy to more widespread adoption of e-mental health interventions in practice. More concretely, training and workshops need to be provided in Member States to different cadres of health professionals (with formal endorsement and support from professional organisations) to showcase how e-mental health interventions can be complementary to the care they already provide, serving as an enabler to good care and patient outcomes.

4. SET UP AT EU LEVEL A QUALITY CONTROL MECHANISM FOR E-MENTAL HEALTH INTERVENTIONS WITH LINKS TO HEALTH CARE COMMISSIONING BODIES AND INSURANCE COMPANIES IN MEMBER STATES

To assure the quality and safety of e-mental health interventions, there should be a quality assurance mechanism to validate e-mental health interventions that demonstrate a clear benefit for improving patient-level outcomes. To do this, there needs to be both a repository of existing evidence-based e-mental health interventions as well as an expert body at the EU level to accredit interventions and update this inventory regularly. The expert team should be embedded in an existing European level quality control body such as the ECDC, having the responsibility to present and update a repository of best practices. Existing quality control bodies could play a role on national level. Additionally, the expert group could assists in the implementation/translation of evidence-based interventions across countries in Europe.

5. INTEGRATE E-MENTAL HEALTH INTO OVERALL E-HEALTH POLICIES AT EU LEVEL AND AT MEMBER STATES LEVEL, ENSURING REFLECTION OF RELEVANT ADDITIONAL COMPONENT AND PROVISIONS (E.G. HEALTH CARE STANDARDS, LIABILITY ISSUES)

The mainstreaming of e-mental health is reliant on the support of relevant policy makers and key stakeholders in Europe. Many of the various policy initiatives on e-health at EU and national level did not reflect specific issues relevant to e-mental health. Of particular importance are agreements on standards of e-mental health care which need to be aligned to those for general mental health care. Policy dialogue is required to agree on what rules or regulations apply when e-mental health interventions are implemented both in the country where they were developed and in other European countries which would be interested in adapting and implementing these interventions.

4.2. Recommendations for action for improved design and dissemination

1. BLEND MODELS OF SERVICE DELIVERY, COMBINING FACE-TO-FACE WITH DIGITAL INTERVENTIONS

Given adherence and attrition to e-mental health interventions are the most critical barriers to successful outcomes, it seems important to consider alternative delivery models. Support provided by therapists, front-line clinicians, and other types of "coaches" through mobile phones, email, website forums and texting may be effective solutions. These hybrid approaches still retain most of the cost-effectiveness of e-solutions but also include human factors that can enhance adherence. For e-health interventions more broadly, human-facilitated support has been shown to markedly enhance adherence (Anderson & Cuijpers, 2009; Christensen & Mackinnon, 2006; Mohr, 2009; Tate et al., 2006). Specifically, clinicians or

other types of frontline mental health practitioners may increase clients' and patients' accountability, create an emotional bond and provide legitimacy to an intervention, all factors that contribute to decreasing attrition and improving adherence to the e-interventions (Mohr, et al., 2011). Mainstreaming e-mental health that use these human factors to enhance adherence will require training and support for clinicians so they can more effectively monitor clients as they go through e- interventions.

2. DESIGN FOR ENGAGEMENT AND RETENTION OF USERS

Serious games designed with strong clinical principles at their core may be one promising approach and exemplar for understanding the impact of designing for engagement and retention. Games are intrinsically motivating because they offer a strong sense of agency, opportunities for co-creation with like-minded peers, and fun. They also may provide a compelling virtual playground to practice skills often taught through psychoeducational or self-help programs. Serious games may also overcome the stigma and related barriers associated with visiting a "mental health" site or downloading an e-mental health intervention tool. Games have no stigma attached and can be delivered through "stealth" approaches that avoid mental health labeling. However, these games need to be a multidisciplinary endeavour, with scientists, clinicians, researchers and game designers (and potentially other commercial stakeholders) working together to optimize mental health outcomes.

3. COLLABORATE WITH TECHNOLOGY EXPERTS

Related to interactive design, the technical and programming aspects of web-based and computer-aided interventions has been neglected both in the research field and in the implementation process across the EU. Most often, technology and technical requirements have been relegated to a mysterious "black box" that only engineers and programmers can work with. Frequently, the clinicians and intervention scientists who design e-mental health programs seem to regard the technical aspects of these interventions as an opaque tool that has no effect or value and serves only as the vehicle by which interventions are delivered. However, a systematic review of studies on web-based health interventions has illustrated how crucial technical characteristics (e.g., intended usage rates, online traffic flow, loading times) and persuasive design (e.g., frequent content updates to websites, deployment of dialogue/ peer support) can significantly impact on adherence and retention rates (Kelders et al., 2012). Early and frequent collaborations with technologists during the design, implementation and evaluation of e-mental health programs is recommended.

4. IMPROVE QUALITY AND FEASIBILITY OF EVALUATION STUDIES, ALLOWING FOR SMOOTHER TRANSLATION OF INNOVATION INTO PRACTICE

Randomized controlled trials have long been considered as the gold-standard for evaluating the efficacy of interventions. However, in the case of e-mental health, there may be important reasons to reconsider this standard. Current technologies rapidly change and evolve and there is no reason to believe this rate of change will slow down. Moreover, massive changes in accessibility of wireless internet connection and cell reception have also occurred and these changes will likely continue to move towards increasingly ubiquitous access in most, if not all, member states. In the midst of this rapidly shifting technological landscape, the traditional research designs may be less practical, useful and feasible (Swendeman, 2015; Mohr et al., 2015). More specifically, traditional research designs require that an intervention remain stable across the evaluation period (e.g., manualized, precise delivery schedule). By the time the results from an RCT have evaluated the efficacy of an intervention or digital solution it may already be obsolete. This requirement may be crippling to interventions that fundamentally are linked to rapidly evolving technologies, their usage patterns and their accessibility.

If e-mental health interventions are forced to remain calcified for the 3-5 years that are usually required to conduct a high-quality randomized controlled trial, potentially critical opportunities to improve

outcomes are missed, especially when the reasons and means by which these improvements are required may be unique to different MS. If evaluation studies mandate that the intervention remain exactly the same from the start of the study, there are no chances to change defects that emerge as the technology is mobilized, to redesign the look and feel of a product or site to match local or shifting contemporary standards or to change the device on which the intervention can run (e.g., mobile phone, computer, e-watch). Currently, researchers are reconceptualising the scientific framework, methodology, and implementation strategies that might better suit implementation and outcome studies in the e-mental health context (Swendeman, 2015; Mohr et al., 2015). Recommendations are emerging that suggest that the focus of the evaluation of e-mental health interventions should be on the principles and clinical usage outcomes, not on surface features of the graphics/design or the specific intervention technology or platform on which it was delivered.

5. DEVELOP A EU-WIDE REPOSITORY OF E-MENTAL HEALTH INTERVENTIONS

Governance of e-mental health solutions is important: A centralised database of e-mental health solutions may be more beneficial than a large number of fragmented, independent solutions offered by different providers and organisations that are difficult to relate to each other or compare. A centralized hub for such interventions could generate more critical mass to enhance user engagement and demand for e-mental health solutions. If this centralized repository is designed well, with cross-MS collaborations at its core, it could serve as much more than a simple list of available interventions with links to reaching them. If interactivity is part of the site, users can connect with other like-minded users / clients who have similar mental health concerns and/or have tried similar treatments. The site could also facilitate interactions between clients and their clinicians through forums (public or private), as an extension of the previous recommendation to include coaching and human support to enhance adherence. The benefits of this kind of centralized repository is not only for the clients seeking mental health support, but also for therapists who have clients for whom they want to recommend e-interventions. Therapists may feel more comfortable going to one site that is recommended across the EU and trusted by professionals as well as users/clients, regardless of whether they are seeking an intervention for depression, anxiety, psychosis or substance use disorders. This hub may also have the potential to drive the development of an online community around the delivery of e-interventions, clients could be asked to rate their progress systematically, therapists could track this progress and researchers might even be interested in mining these data (with privacy and confidentiality issues clearly protected) to evaluate self-and therapist-reported outcomes.

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ANNEX 1: RESULTS OF SITUATIONAL ANALYSIS ON THE LEVEL OF PARTICIPATING COUNTRIES SUMMARY CHARTS

Figure 12: Strategy, policy or action plans regarding depression and/or suicide

Reduction of access to lethal means	Recognition and treatment of at risk populations in primary health care	Recognition and treatment of at risk populations in specialized care	Media communication of suicidal events	Access to crisis interventions
Bulgaria (blue)	Bulgaria (blue)	Bulgaria (blue)	Bulgaria (empty)	Bulgaria (red)
Denmark (blue)	Denmark (red)	Denmark (blue)	Denmark (red)	Denmark (blue)
Estonia (blue)	Estonia (blue)	Estonia (blue)	Estonia (blue)	Estonia (blue)
Germany (blue)	Germany (red)	Germany (red)	Germany (red)	Germany (red)
Hungary (red)	Hungary (red)	Hungary (red)	Hungary (red)	Hungary (red)
Ireland (blue)	Ireland (red)	Ireland (blue)	Ireland (red)	Ireland (red)
Latvia (blue)	Latvia (blue)	Latvia (blue)	Latvia (red)	Latvia (blue)
Netherlands (blue)	Netherlands (red)	Netherlands (blue)	Netherlands (red)	Netherlands (blue)
Sweden (blue)	Sweden (red)	Sweden (blue)	Sweden (blue)	Sweden (red)

The blue bubbles show where the answer is "yes". The empty bubble means that there was no data

Figure 13: LEGISLATION IN THE DIFFERENT AREAS REGARDING DEPRESSION AND SUICIDE

	Reduction of access to lethal means	Recognition and treatment of at risk populations in primary health care	Recognition and treatment of at risk populations in specialized care	Media communication of suicidal events	Access to crisis interventions
Bulgaria	yes	yes	yes	yes	yes
Denmark	yes	yes	yes	no	yes
Estonia	no	no	yes	no	no
Germany	yes	no data	yes	yes	yes
Hungary	no	no	no	yes	no
Ireland	yes	no	no	no	no
Latvia	yes	yes	yes	no	no
Netherlands	yes	yes	yes	no	yes
Sweden	no	yes	no	no	no

The blue bubbles show where the answer is "yes". The empty bubble means that there was no data.

Bulgaria

Figure 14: Treatment overview for depression and/or suicidal behaviour in Bulgaria

How often do people receive the following treatment for depression and/or suicidal behaviour?
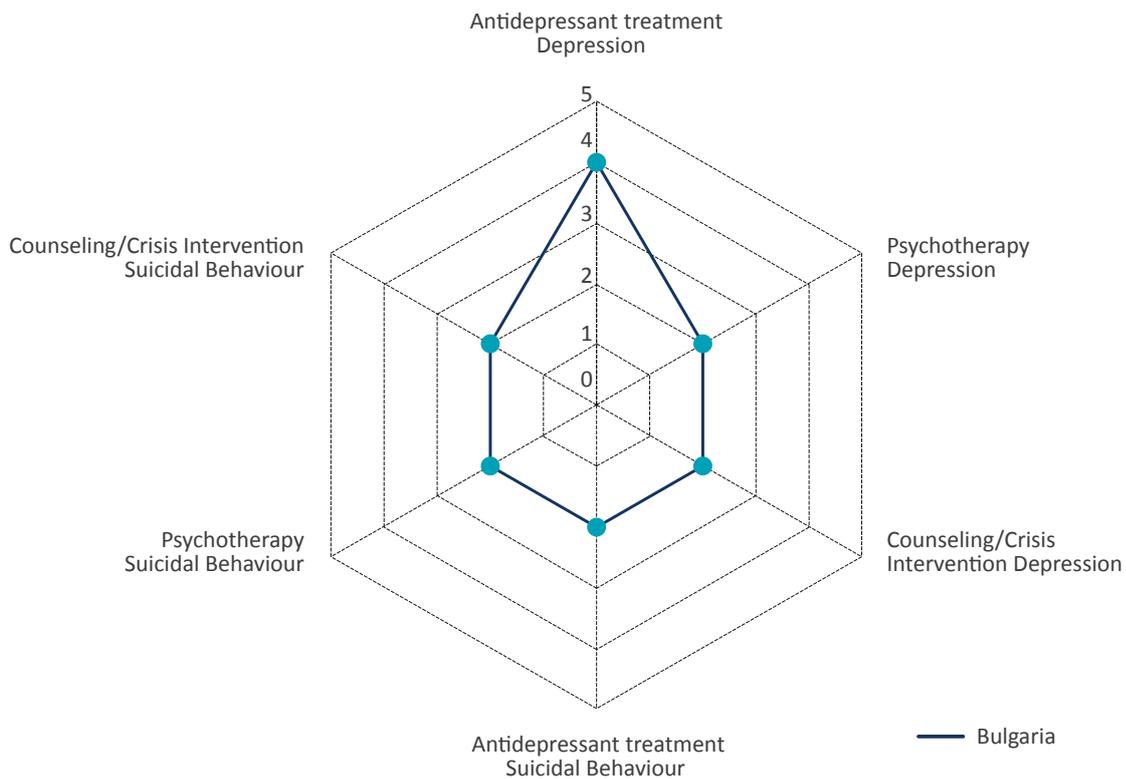

Bulgaria has national policy, and action plan addressing depression and suicide, but there is no information about E-mental health. Among the nine countries Bulgaria is the only one amongst the participating countries which has provisions related to all five areas of suicide prevention. The treatment availability of depression and suicidal behaviour is amongst the lowest in Bulgaria compared to the other countries. Antidepressant medication for depressed patient is the only therapeutic method considered to reach the majority (51-80%) of patients in need. All the other treatment methods are estimated to reach only 20% of the depressed and suicidal patients. These facts result a paradoxical situation in Bulgaria: the strong policy and legislation could not be realized in the practice.

Denmark

Figure 15: Treatment overview for depression and/or suicidal behaviour in Denmark

**How often do people receive the following treatment for depression and/or suicidal behaviour?**
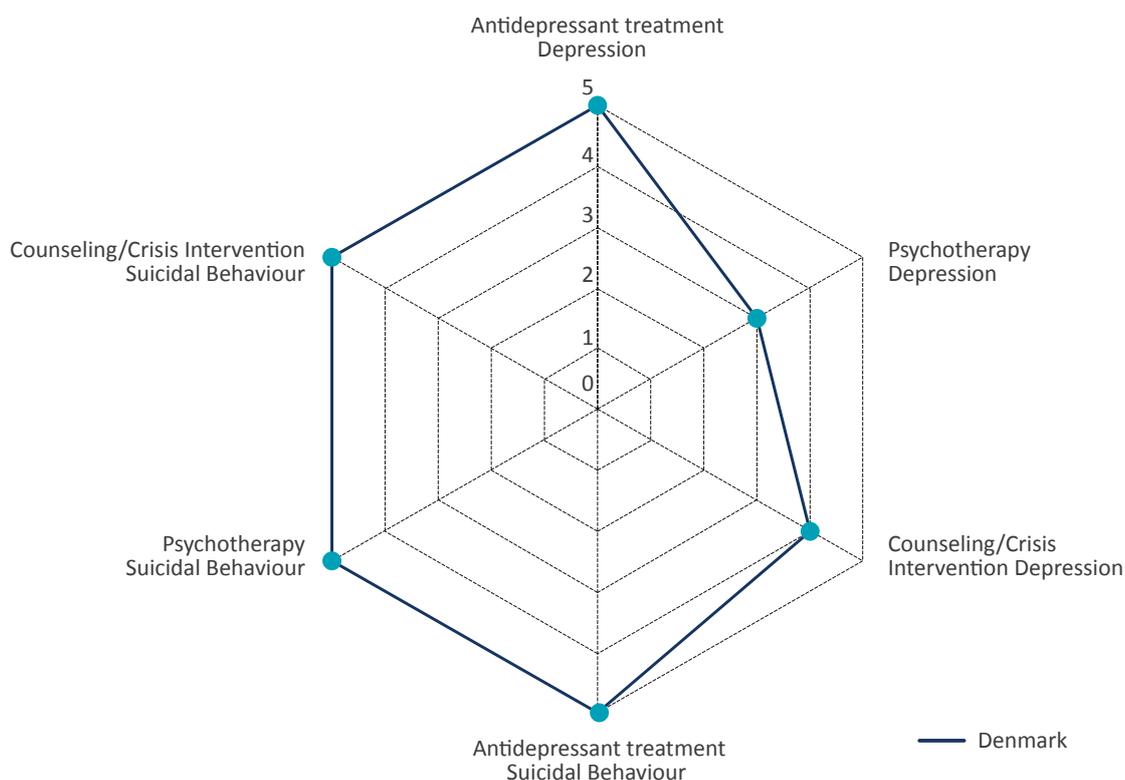
Among the participating countries, Denmark has the best indicators regarding suicide and depression prevention, as well as intervention. Denmark has a national policy, an action plan and legislation for suicide and depression, but not for E-mental health. Out of the five possible suicide prevention areas, four are covered by an existing legislation (media communication is not covered), which indicates to an intense suicide prevention activity in Denmark. Regarding treatment availability, Denmark shows the best picture among the participating countries: almost all patients with suicidal behavior receive antidepressant treatment, psychotherapy or counseling/crisis intervention. Along with Estonia, Denmark is other country where more than 80% of depressed patients receive antidepressant treatment, and the majority of them take the advantage of participating in counseling as an intervention. Denmark can be considered as a best practice on national level on the field of depression and suicide prevention.

Estonia

Figure 16: Treatment overview for depression and/or suicidal behaviour in Estonia

**How often do people receive the following treatment for depression and/or suicidal behaviour?**
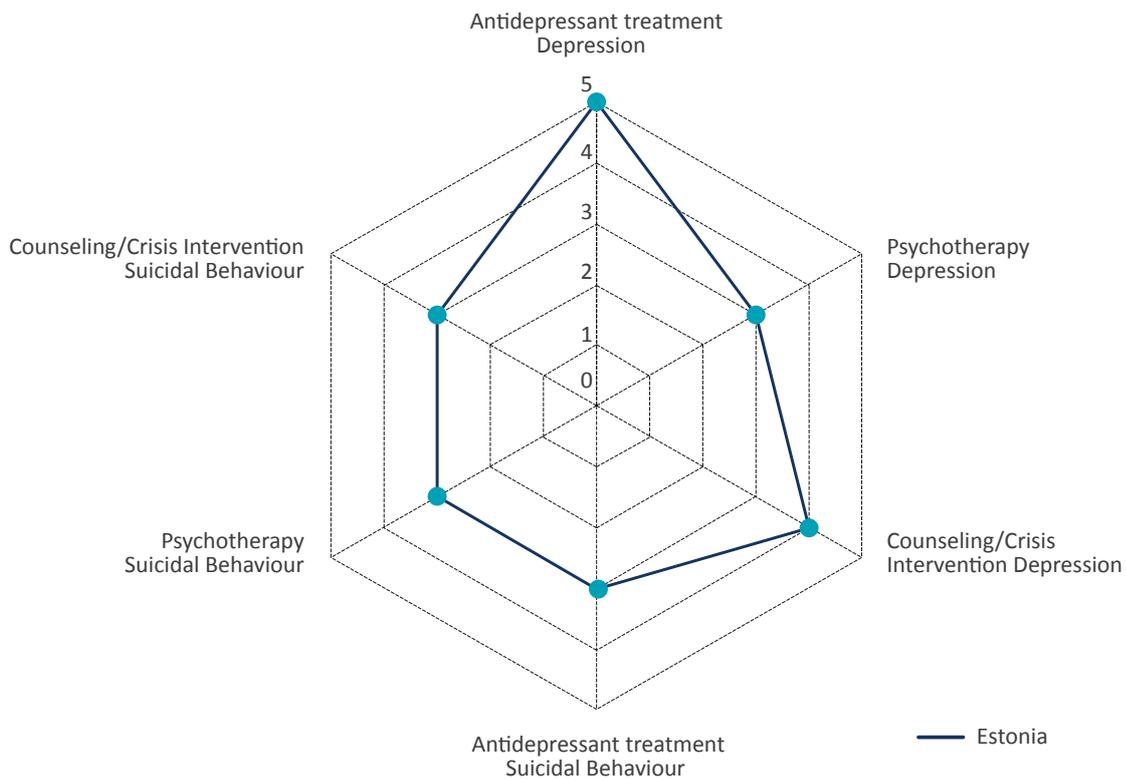
Estonia is another country with a strong political regulation. There are existing national policies and action plans for both depression/suicide and E-mental health. There is also legislation regarding suicide risk and depression, however, out of the five possible suicide prevention methods, only recognition and treatment of at risk groups in specialized care is covered by an existing legislation. Different treatment methods are available for a great percent of depressed and suicidal patients. Almost all depressed patients receive antidepressant therapy and about 80% of them participate in counselling. Although "only" 50% of suicidal patients receive appropriate treatment, along with Denmark, Estonia has the a best practice routine among the participating countries.

Germany

Figure 17: Treatment overview for depression and/or suicidal behaviour in Germany

**How often do people receive the following treatment for depression and/or suicidal behaviour?**
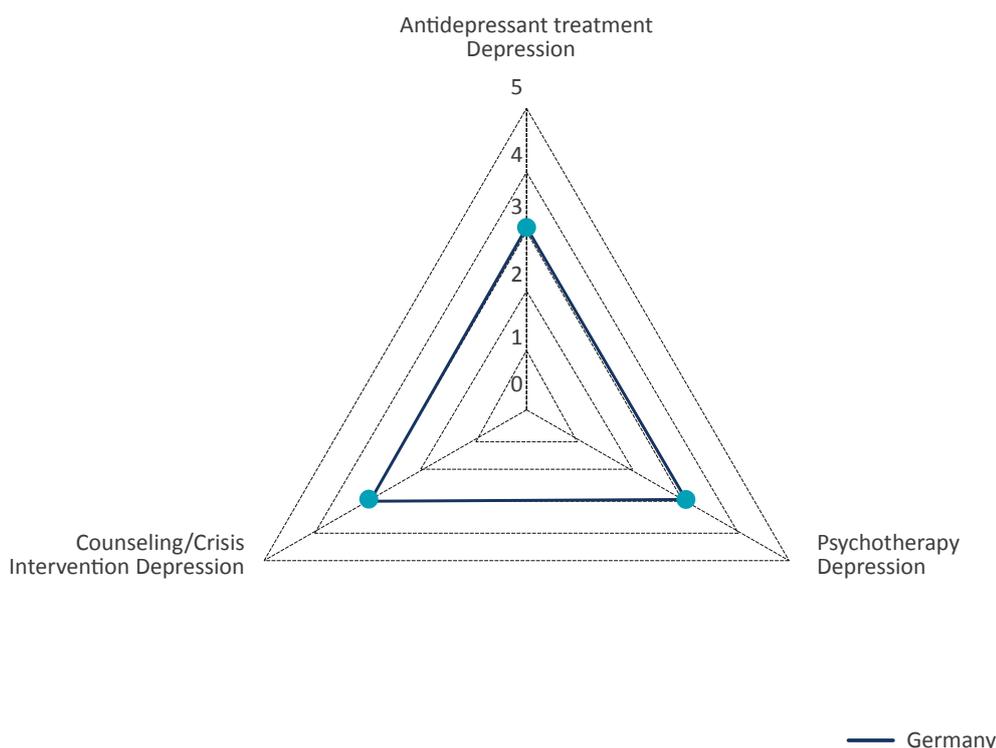
Germany has national policy for depression and suicide, but there is no action plan or legislation for depression/suicide and E-mental health. Legislation regarding suicide and depression is also not available. The collected data refers to a strong suicide prevention activity in Germany, since 4 out of 5 different areas of possible suicide prevention methods are covered by an existing legislation (with no data about recognition and treatment in primary care due to the different levels of legislation, e.g. country and local level). Information concerning the different treatment methods has limited availability as well. Antidepressant treatment is available for up to 50% of depressed people, while psychotherapy or crisis intervention is estimate for only 20% of them. There is no available information regarding the treatment of suicidal patients in Germany.

Hungary

Figure 18: Treatment overview for depression and/or suicidal behaviour in Hungary

How often do people receive the following treatment for depression and/or suicidal behaviour?
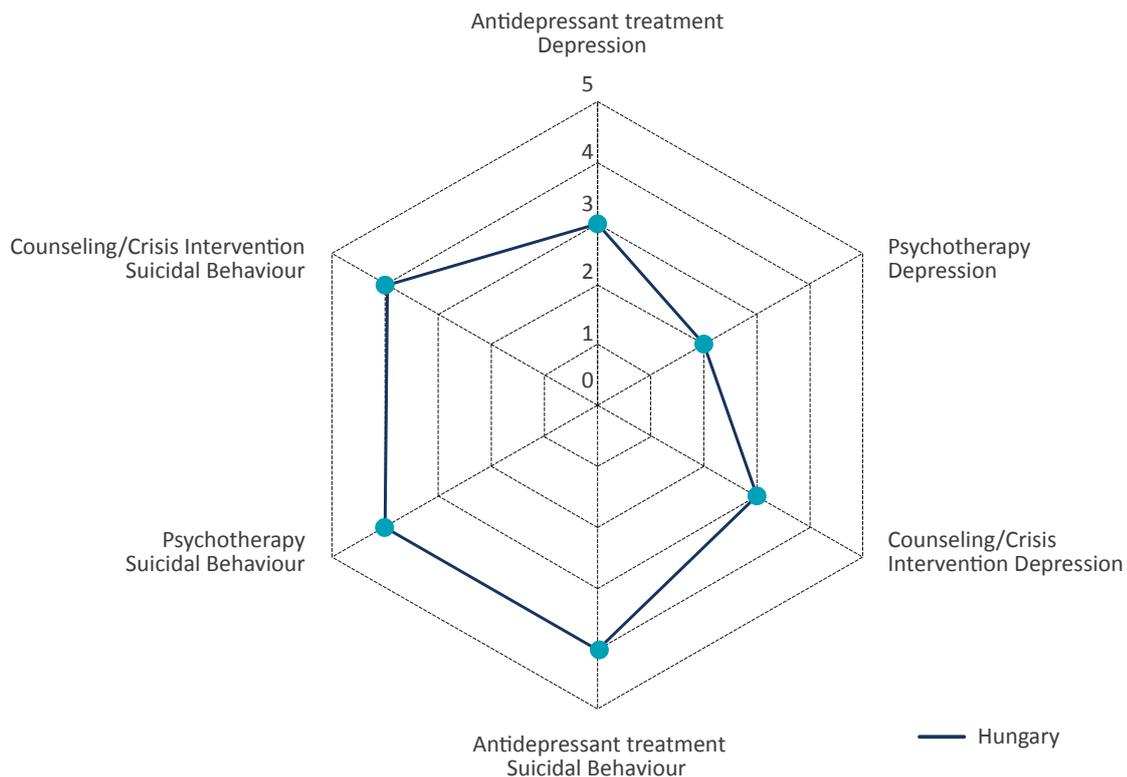
Compared to other countries, Hungary has in the most disadvantageous situation regarding policy and legislation level. There is neither national policy nor action plan against suicide and depression. This is the only country lacking national policy and missing provisions related to suicide prevention. Despite the deficiencies in political setting, the Hungarian treatment availability is not worse than the average. Only 50% of depressed patients are estimated to receive antidepressant and/or psychotherapy, but the therapy of suicidal patients shows more reassuring picture: the majority (up to 80%) of these patients receive medication and crisis counselling, but only some of them can take the advantage of participating in psychotherapy.

Ireland

In Ireland there is existing national policy and action plan addressing suicide and depression, but not for E-mental health. Even though there is Government support for suicide prevention and improving the care for people with depression, there is currently no legislation. Information on the treatment of patients with suicidal behaviour is not available at national level. The available treatment options include pharmacological treatment, Cognitive Behaviour Therapy (CBT), Dialectical Behaviour Therapy (DBT), crisis intervention, and counselling provided by community based services. For people with depression, pharmacological treatment would be the main intervention, followed by psychological interventions, such as CBT.

Latvia

Figure 19: Treatment overview for depression and/or suicidal behaviour in Latvia

**How often do people receive the following treatment for depression and/or suicidal behaviour?**
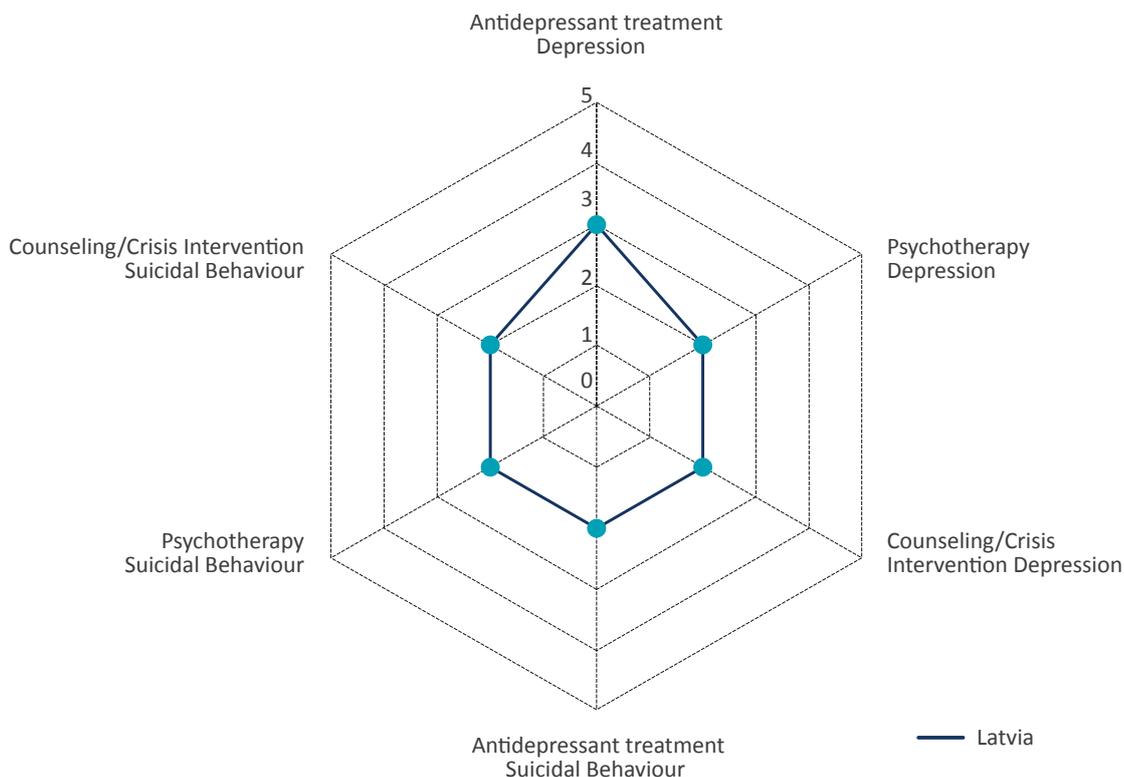
The situational analysis has identified one of the best policy and legislation levels in Latvia. This country has national policy for both depression/suicide and E-mental health. There is action plan and legislation for suicide and depression as well. Latvia has existing provisions related to the reduction of access to lethal means, recognition and treatment of at risk populations in primary health care and specialized care. On the other hand, treatment availability is considered to be the worst among the examined countries. Only 20% (at maximum) of suicidal patients are estimated to receive appropriate treatment involving psychotherapy, counselling and antidepressant treatment. Up to 50% of depressed patients receive antidepressant treatment, but only every fifth person is estimated to take the advantage of participating in psychotherapy or counselling. The situation is very similar to Bulgaria: despite the appropriate representation of tackling depression and suicide on policy level, there are obstacles of its realisation in practice.

The Netherlands

Figure 20: Treatment overview for depression and/or suicidal behaviour in The Netherlands

How often do people receive the following treatment for depression and/or suicidal behaviour?
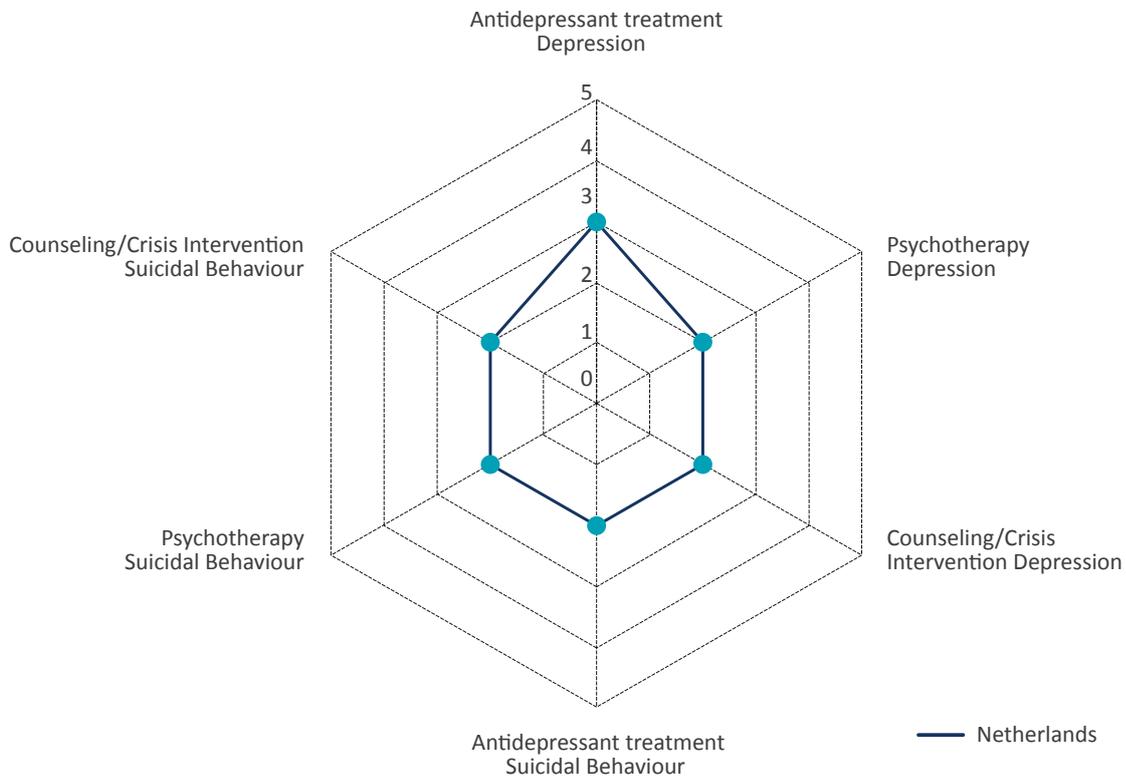
The Netherlands has existing national policy and action plan addressing suicide and depression, but – although e-mental health interventions is highly available - not for E-mental health. The collected data refers to a strong suicide prevention activity in the Netherlands since, similarly to Denmark, there are also 4 out of 5 different areas of possible suicide prevention methods covered by existing legislation (except for media communication guidelines). Regarding treatment methods, the partly incomplete data refers to an average situation compared to the other countries. Antidepressant treatment and psychotherapy are available for the majority of depressed patients, while counselling or crisis intervention for up to 20% of them.

Sweden

Figure 21: Treatment overview for depression and/or suicidal behaviour in Sweden

How often do people receive the following treatment for depression and/or suicidal behaviour?
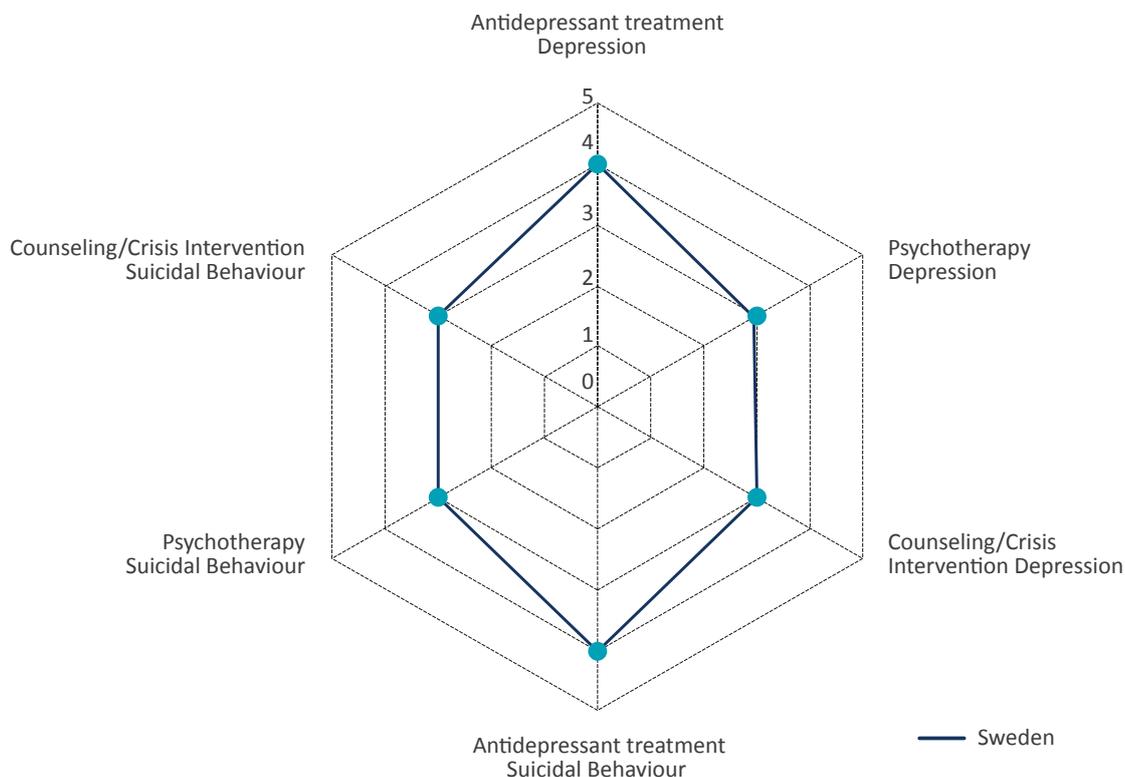

Sweden has both national policy and action plan for suicide and depression, and also action plan for E-mental health. On the other hand, there is no general legislation against suicide and depression. Amongst possible suicide prevention methods, only the recognition and treatment of at risk groups in primary health care is covered by an existing legislation in Sweden. However up to 80% of suicidal and depressed patients receive antidepressant treatment, and around 50% of them take advantage of participating in counseling or psychotherapy. These numbers indicated Sweden to be one of the best practice countries on national level regarding treatment availability among the participating countries.

ANNEX 2: SWOT ANALYSIS

Analysis of SWOT categories for prevention of depression

Six countries provided answers to this questionnaire concerning treatment of depression, and eight concerning suicide treatment.

Table 22: SWOT table for the prevention of depression

DEPRESSION PREVENTION	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Management issues	1	1	2	-
Implementation	1	3	2	-
Financial Issues	2	-	2	2
Achievements	3	1	-	-
Technical issues (access, distance)	4	1	1	-
Financial Issues (funding, costs)	1	-	2	2
Collaboration between partners	2	3	1	-
Minority issues (e.g. access, stigma)	2	1	3	-
Professional issues (understanding and knowledge)	5	-	1	-
Quality of service issues, control	1	1	2	2
Accessibility issues	2	1	2	1
Human resource issues	2	-	3	1

The relevant areas were denoted when at least 3 MS indicated that the particular issue was significant or a priority.

Strengths

Throughout the SWOT analysis for depression, the main strengths that emerged across Member States were **achievements** (progress made so far in terms of innovation and outcomes), **technical issues** (related to reach of intervention, distance to facilities, accessibility of interventions, which could also include e-mental health interventions), and **professional knowledge** (knowledge and awareness of depression, understanding of the illness).

Weaknesses

The main weaknesses mentioned were **implementation** (of depression interventions) and collaboration between partners (although 2 MS saw this as a strength in their case). Collaboration among various sectors and organisations is crucial for the implementation and sustainability of prevention efforts towards depression.

Opportunities

The main opportunities consisted of **minority issues** (to tailor interventions more to minorities and vulnerable groups so that the interventions are accessible, relevant, and culturally appropriate to their circumstances and meet their demand), and **human resource issues** (to enhance the capacity of human

resources for mental health, and to build a more diverse cadre of professionals and non-professionals who play a role in the delivery and implementation of care).

Threats

No priority threats were described for depression, but 2 MS felt that financial issues (both costs of implementation and funding sources) were a threat to maintaining prevention and treatment efforts for depression, as was quality control.

ANALYSIS OF SWOT CATEGORIES FOR PREVENTION OF SUICIDE

The relevant areas were denoted when at least three MS indicated that the particular issue was significant or a priority.

Table 23: SWOT table for the prevention of suicide

SUICIDE PREVENTION	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Management issues	1	2	4	-
Implementation	2	1	3	-
Financial Issues	2	-	2	4
Achievements	2	1	2	-
Technical issues distance)	2	4	2	-
Financial Issues (funding)	-	1	5	2
Collaboration between partners	-	4	4	-
Minority issues (e.g. access, stigma)	1	1	5	-
Professional issues (understanding and knowledge)	6	2	-	-
Quality of service issues, control	2	2	3	1
Accessibility issues	2	1	5	-
Human resource issues	2	1	3	2

Strengths

The main strength put forth by 6 MS was **professional understanding and knowledge** of suicide prevention, intervention and postvention.

Weaknesses

The primary weaknesses mentioned were **technical issues** (relating to provision of interventions at the appropriate time, covering hard to reach areas with support and help, and other accessibility related issues), and **collaboration between partners**. Timely and strong collaboration among partners (especially fire department, police, social care, mental health care, hospital services) is crucial for ensuring the prevention of suicides.

Opportunities

A number of opportunities were mentioned by the MS. The first was **management issues**, in that management of suicide cases could be improved. The second was **implementation**, as more improvements need to be made to enhance implementation and be able to have a broader reach across MS (and within countries as well). A third opportunity was funding, to seek diverse funding sources

and different ways of fundraising. Minority-related issues comprised a fourth opportunity, in tailoring, interventions to vulnerable and high-risk groups, as well as ethnic minorities. This is an initiative which has been developed in the Netherlands through a number of e-mental health interventions. Finally, opportunities were envisioned in improving access to suicide prevention efforts (and postvention efforts), improving the quality control of interventions, and further strengthening the workforce operating in this field.

Threats

The main perceived threat was financial issues, related to finding financing and funding to sustain existing interventions and scale up.

SWOT ANALYSIS OF MAINSTREAMING E-MENTAL HEALTH INTO HEALTH SYSTEMS

Regarding E-health solutions, participating countries had an opportunity to add their own point, which they think is important. After collecting the answers, they were grouped into various categories. The special issues raised by the countries are displayed in Table 20, according to an analysis based on the number of elements in each category

Table 24: Overview of issues in the e-health SWOT analysis

ISSUES MENTIONED	CATEGORY
Channels of dissemination (online or off-line, on a computer, tablet (e.g. an iPad) or mobile phone)	Awareness
Training for professionals on how to develop and implement effective and evidence-based e-mental health solutions	Awareness
Variability of channels for dissemination	Awareness
level of development of private sector expertise in technologies or knowledge relevant to development, research and implementation of e-health	Awareness
Awareness of e-health interventions	Awareness
level of development of private sector expertise in technologies or knowledge relevant to development, research and implementation of e-health	Awareness
Customization to needs of vulnerable and socially isolated groups	Empowerment
National focus/prioritization of meeting needs of vulnerable groups (people with low socio-economical status, minority groups and older people)	Empowerment
Some examples of good practice regarding E-mental health solutions	Expertise
Specific expertise in the field development, research or implementation of e-mental health (Psycho-education, Self-help, Self-management, Digital therapies, Tele health Blended care (face-to-face combined with e-health)	Expertise
Lack of human resources for development and maintenance of e-mental health solutions	Expertise
Potential in overcoming financial challenges in mental health care	Financial
commercial interest of private parties developing e-mental health interventions	Financial
Financial challenges	Financial
Lack of financial resources	Financial
O-gap – speed of transition from prototype and pilot phase to operations	Financial
Sustainability and business models	Financial
Better availability and accessibility of services	Integration
Combination of face-to-face interventions and e-solutions	Integration
Integration with other forms of care	Integration
Potential for empowerment of service users and carers	Integration
Potential in improving availability of evidence-based treatment	Integration

ISSUES MENTIONED	CATEGORY
Integration with other forms of care	Integration
Low adherence	Integration
some e-solutions are technically too complicated	Integration
Resistance by service users and carers	Integration
Resistance from health professionals or other relevant stakeholders	Integration
E-health development in general	Integration
Other forms of mental health care are dominant	Integration
Involvement of different sectors (governmental, non-governmental, private)	Policy
Prioritization of e-mental health at governmental level	Policy
Development of eHealth and integration of e-solutions of health services is a prioritised area in Estonia	Policy
Existing E-health policy	Policy
Ineffective governmental strategy on e-mental health	Policy
Involvement of different sectors (governmental, non-governmental, private)	Policy
Interventions are not enough evidence-based	Quality
Quality control	Quality
ICT/connectivity infrastructure in the country (broadband, internet connection, 3G, 4G, etc.)	Technical background
Widespread free internet connection in public areas	Technical background
Widespread internet connection at homes	Technical background

Table 25: Aggregated table of answers for e-health SWOT analysis

	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Empowerment	2	2	4	
Expertise	4	2	1	2
Financial			2	9
Integration	4	3	11	6
Awareness	1	4	6	
Quality		3		2
Technical background	8			
Policy	2	2	3	1

Strengths

The main strengths mentioned for e-mental health interventions across MS were technical and content expertise available to design and pilot e-mental health interventions, integration of e-mental health interventions within different care settings (e.g. primary care, specialist care, within the health system through securing buy-In from insurers for long-term financing).

Weaknesses

Although some MS saw integration as a strength, while other MS saw this as a weakness, due to e-mental health being implemented, financed, and perceived differently depending on the MS. For Instance, in the Netherlands e-mental health interventions have progress dramatically in the past decade, are mainstreamed into different care settings, and some interventions have been financed by

insurance companies in the package of mental health care. Other countries with different resource availabilities or without the impetus to invest in e-mental health interventions may perceive integration as a weakness. Awareness and quality were also cited as weaknesses; awareness in the sense that many people may not know that e-mental health interventions that could benefit them exist, and dissemination efforts for e-mental health interventions have been relatively weak. Quality refers to the lack of quality seal of e-mental health interventions. Given the volume of e-mental health interventions which exist, it can be difficult to determine which ones are good and which ones could be ineffective or harmful, or relevant to one's circumstances. A quality seal (discussed in the e-mental health review in Appendix 2) discusses this option as a way to better ensure quality control.

Opportunities

Opportunities mentioned by MS included empowerment (using e-mental health interventions can be empowering for clients as they can instill a sense of mastery over new tasks and experiences, equip clients with new problem solving skills or insights on their thoughts and behavior, and encourage engagement in daily activities through provision of homework and completion of modules within certain time intervals. Integration into different care settings and different levels of the health system was mentioned by many MS as an opportunity for the future. Launching awareness and dissemination activities could help to raise awareness about e-mental health interventions, and e-mental health interventions themselves could raise awareness about mental health problems. Finally, policy was seen as an opportunity, in that e-mental health could be incorporated into policy documents and assigned targets in national and regional action plans for mental health.

Threats

Only two threats were mentioned across MS: Financing and integration. Financing was perceived as a threat due to the relative difficult of securing financing for long-term implementation and evaluation of e-mental health interventions, as typically funding only finances the initial development of the intervention and the piloting phase. Second, integration is perceived as a threat, as if e-mental health interventions are not mainstreamed into health systems, they risk being seen as a separate issue financed and run by independent organisations, which may position e-mental health solutions in a negative light and discourage use and benefit from them.

ANNEX 3: RECOMMENDED TOPICS OF PUBLIC EDUCATION PROGRAMS FOR DEPRESSION PREVENTION

Important note: Recommended topics of public education programs for depression prevention

- The frequency, significance and basic socio-demographic characteristics of depression are crucial in demonstrating this illness is a very significant problem of everyday life

- Symptoms and signs

- Obstacles of seeking treatment (hopelessness, depression is masked by alcohol abuse or physical symptoms, symptoms are attributed to natural consequences of a negative life event, lack of motivation)

- Treatment: various treatment forms, basic facts about pharmacotherapy, psychotherapy, and other treatment forms. What happens in a psychiatric/clinical psychology office?

- Treatment perspectives: depression can be treated, and the majority of the cases do not need lifelong medical attention (this is a common misbelief in different European populations)

- Prevention/postvention (prevention of relapse): The importance of lifestyle in depression (regular exercise, adequate sleep and daily rhythm, healthy diet and well-balanced stress and coping can cut the risk of depressive episodes)

- Self-management: availability of self-help resources (self-help groups, and E-mental health self-management tools). How can appropriate E-mental health tools be utilised?