

## Research priorities for public mental health in Europe: recommendations of the ROAMER project

Anna K. Forsman<sup>1,2,3</sup>, Kristian Wahlbeck<sup>4</sup>, Leif Edvard Aarø<sup>5</sup>, Jordi Alonso<sup>6,7,8</sup>, Margaret M. Barry<sup>9</sup>, Matthias Brunn<sup>10,11</sup>, Graça Cardoso<sup>12</sup>, Mima Cattán<sup>13</sup>, Giovanni de Girolamo<sup>14</sup>, Malin Eberhard-Gran<sup>5,15,16</sup>, Sara Evans-Lacko<sup>17</sup>, Andrea Fiorillo<sup>18</sup>, Lars Hansson<sup>19</sup>, Josep Maria Haro<sup>20,21,22</sup>, Jean-Baptiste Haze<sup>11,23</sup>, Ulrich Hegerl<sup>24</sup>, Heinz Katschnig<sup>25,26</sup>, Susanne Knappe<sup>27</sup>, Mario Luciano<sup>18</sup>, Marta Miret<sup>28,29,30</sup>, Merete Nordentoft<sup>31</sup>, Carla Obradors-Tarragó<sup>20,21</sup>, David Pilgrim<sup>32</sup>, Torleif Ruud<sup>15,33</sup>, Hans Joachim Salize<sup>34</sup>, Sarah L. Stewart-Brown<sup>35</sup>, Kristinn Tómasson<sup>36</sup>, Christina M. van der Feltz-Cornelis<sup>37,38</sup>, Daniel B. J. Ventus<sup>2,39</sup>, Jukka Vuori<sup>40</sup>, Airi Värnik<sup>41,42</sup>, also on behalf of the ROAMER Consortium

- 1 Faculty of Education and Welfare Studies, Åbo Akademi University, Vaasa, Finland
- 2 National Institute for Health and Welfare (THL), Mental Health Promotion Unit, Vaasa, Finland
- 3 Nordic School of Public Health NHV, Gothenburg, Sweden
- 4 Finnish Association for Mental Health, Helsinki, Finland
- 5 Division of Mental Health, Norwegian Institute of Public Health, Oslo, Norway
- 6 Health Services Research Unit, IMIM - Institut Hospital del Mar d'Investigacions Mèdiques, Barcelona, Spain
- 7 CIBER en Epidemiología y Salud Pública (CIBERESP), Barcelona, Spain
- 8 Health and Life Sciences Department, Universitat Pompeu Fabra (UPF), Barcelona, Spain
- 9 National University of Ireland Galway, Health Promotion Research Centre, Galway, Ireland
- 10 URC Eco Ile-de-France, AP-HP, Paris, France
- 11 University Paris Diderot, ECEVE UMR 1123, INSERM, Paris, France
- 12 Chronic Diseases Research Center (CEDOC) and Department of Mental Health, Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisbon, Portugal
- 13 Northumbria University, Newcastle upon Tyne, UK
- 14 St. John of God Clinical Research Centre, Brescia, Italy
- 15 Institute of Clinical Medicine, University of Oslo, Oslo, Norway
- 16 Health Services Research Center, Akershus University Hospital, Lørenskog, Norway
- 17 Health Service and Population Research Department, Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, UK
- 18 Department of Psychiatry, University of Naples SUN, Naples, Italy
- 19 Department of Health Sciences, Lund University, Lund, Sweden
- 20 Centro de Investigación Biomédica en Red de Salud Mental, Madrid, Spain
- 21 Parc Sanitari Sant Joan de Déu, Fundació Sant Joan de Déu, Sant Boi de Llobregat, Research and Development Unit, Barcelona, Spain
- 22 Universitat de Barcelona, Barcelona, Spain
- 23 Fondation FondaMental, Créteil, France
- 24 Department of Psychiatry and Psychotherapy, University of Leipzig, Leipzig, Germany
- 25 IMEHPs Research, Vienna, Austria
- 26 Medical University of Vienna, Vienna, Austria
- 27 Technische Universität Dresden, Institute of Clinical Psychology and Psychotherapy, Dresden, Germany
- 28 Instituto de Salud Carlos III, Centro de Investigación Biomédica en Red de Salud Mental, Madrid, Spain
- 29 Department of Psychiatry, Universidad Autónoma de Madrid, Madrid, Spain
- 30 Department of Psychiatry, Instituto de Investigación Sanitaria Princesa, Hospital Universitario de La Princesa, Madrid, Spain
- 31 University of Copenhagen, Mental Health Center Copenhagen, Copenhagen NV, Denmark
- 32 University of Liverpool, Liverpool, UK
- 33 Division of Mental Health Services, Akershus University Hospital, Lørenskog, Norway
- 34 Medical Faculty Mannheim, Central Institute of Mental Health, University of Heidelberg, Mannheim, Germany
- 35 Warwick Medical School, University of Warwick, Coventry, UK
- 36 Administration for Occupational Health & Safety, Department of Occupational Health and Research, Reykjavik, Iceland
- 37 Tranzo Department, Tilburg University, Tilburg, The Netherlands
- 38 GGz Breburg, TopClinical Center for Body, Mind and Health, Tilburg, The Netherlands
- 39 Faculty of Arts, Psychology, and Theology, Åbo Akademi University, Turku, Finland
- 40 Finnish Institute of Occupational Health, Development of Work and Organizations, Helsinki, Finland
- 41 Estonian-Swedish Mental Health and Suicidology Institute, Tallinn, Estonia
- 42 Tallinn University, Tallinn, Estonia

**Correspondence:** Anna K. Forsman, Åbo Akademi University, Faculty of Education and Welfare Studies, Study Programme in Social Sciences, Developmental Psychology, P.B. 311 65101 Vaasa, Finland, Tel: +358 46 9219726, e-mail: anna.k.forsman@abo.fi

**Background:** The ROAdmap for MEntal health Research in Europe project aimed to create an integrated European roadmap for mental health research. Leading mental health research experts across Europe have formulated consensus-based recommendations for future research within the public mental health field. **Methods:** Experts were invited to compile and discuss research priorities in a series of topic-based scientific workshops. In addition, a

Delphi process was carried out to reach consensus on the list of research priorities and their rank order. Three web-based surveys were conducted. Nearly 60 experts were involved in the priority setting process. **Results:** Twenty priorities for public mental health research were identified through the consensus process. The research priorities were divided into summary principles—encompassing overall recommendations for future public mental health research in Europe—and thematic research priorities, including area-specific top priorities on research topics and methods. The priorities represent three overarching goals mirroring societal challenges, that is, to identify causes, risk and protective factors for mental health across the lifespan; to advance the implementation of effective public mental health interventions and to reduce disparities in mental health. **Conclusions:** The importance of strengthening research on the implementation and dissemination of promotion, prevention and service delivery interventions in the mental health field needs to be emphasized. The complexity of mental health and its broader conceptualisation requires complementary research approaches and interdisciplinary collaboration to better serve the needs of the European population.

.....

## Background

There is a strong tradition of public health research in Europe, where a large body of knowledge contributes to present high levels of health, at the same time challenges yet to be solved are identified.<sup>1</sup> Still, European countries differ with regard to research traditions and the level of research capacity and support within the public health fields.<sup>2</sup>

Mental health is an indivisible part of public health, and it has a significant impact on European human, social and economic capital.<sup>3,4</sup> In the context of current population-level challenges common to European countries—such as the economic crisis, the need for public service sector reforms and re-organization and the rapid growth of the ageing population—attention must be focused on efficient ways of optimizing mental health and well-being across the lifespan.<sup>5</sup> According to the World Health Organization European Mental Health Action Plan,<sup>5</sup> the required actions for improving the well-being of the European population and reducing risk factors for mental health problems need to be emphasized at a policy level across European countries.

Public health challenges in Europe are changing. Life expectancy of European citizens continues to increase and thus the burden of disease is starting to be dominated by non-communicable diseases, including mental disorders.<sup>6</sup> Mental disorders are associated with social inequalities<sup>7</sup> and discrimination.<sup>8</sup> The societal burden of mental disorders is immense. The main causes, however, are not due to treatment costs, they are instead due to stigma,<sup>9</sup> reduced human capital and decreased productivity,<sup>10,11</sup> under-detection and under-treatment.<sup>12</sup> The global burden of mental and neurological disorders accounted for around 10% of global total disability-adjusted life years in 2010, compared to 7% in 1990.<sup>6</sup> Estimates further suggest that 38% of the European population experience some kind of mental disorder every year.<sup>10</sup> Thus, mental disorders are a top public health challenge in Europe.<sup>5</sup>

It is recognized that the foundations of mental health are laid in early life and even in the prenatal period.<sup>13</sup> This calls for early public health interventions. For example, parenting support interventions<sup>14</sup> have been shown to promote life-long mental health and well-being of the offspring. Also, school programmes have consistently been shown to have positive moderate to strong effects on social and emotional skills and competences.<sup>15</sup> In these times, when both the mental health of Europeans and the sustainability of European mental health systems are under pressure, the European Union (EU) health research budget needs to be invested where it will yield most gain. Investing in mental health promotion, the prevention of mental disorders and in early interventions will produce both health and social gains for population health at all levels.<sup>4,16,17</sup> Consequently, mental health research should be funded in proportion to the burden at stake and the return on investment expected.<sup>18,19</sup>

In order to improve and enhance the prerequisites for future public health research in the mental health field, the Public Health Work Package of the ROADmap for MEntal health Research in Europe (ROAMER) project has identified research priorities for

public mental health research in the next 10 years. The ROAMER project (2011–2014) was designed to develop a consensus-based roadmap to promote and integrate mental health research in Europe, covering various areas and disciplines in the field (i.e., psychological research, biomedical research, research on social and economic aspects, well-being research, as well as public health research).<sup>20</sup> The roadmap aims to provide a coordinated research action plan outlining the research needed to establish an EU mental health strategy. Thus, it aims to provide priority setting guidance for the Horizon 2020 and other European and national research funding programmes. This article presents the methods used and the findings from activities regarding public mental health research, while other publications describe project activities within other mental health research areas.<sup>21–24</sup>

The aim of this article is to identify consensus-based research priorities in the public mental health research field, as formulated within the ROAMER project by European public mental health experts.

## Methods

### *Research priority setting process: definitions*

For this work, mental health was defined according to the World Health Organization as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.<sup>5</sup> Thus, mental health is not just the absence of illness, but rather is conceptualized as a state of well-being. Well-being reflects individuals' perceptions and evaluations of their own lives in terms of their affective states and their psychological and social functioning.<sup>25</sup> A starting point of the ROAMER project was to acknowledge the need to increase clarity on the inter-relationships between the concepts of mental health and mental disorders.

Public health was defined according to established definitions,<sup>1,2,26</sup> and public mental health accordingly as actions aiming to develop mental health and mentally healthy societies. Consequently, public mental health research was defined as research concerned with mental health at the population level. This covers a broad spectrum of areas describing (i) the occurrence, nature and distribution of positive mental health and mental health problems and their determinants; (ii) mental health promotion; (iii) the prevention of mental disorders; (iv) mental health system policies and governance and (v) organization and delivery of mental health services.

### *Data collection and working process*

Data were collected through a series of five separate scientific thematic workshops, each for one sub-area, to which 49 European public mental health research experts were invited. Twenty-nine experts accepted and participated together with ROAMER representatives. Invited experts were selected based on scientific expertise, defined as having an adequate H-index (a measure of how often the

expert has been cited) indicating excellence in their scientific career (mean value 20.7). Geographical region, gender and age distribution were taken into account when inviting experts in order to ensure adequate representation. The perspectives of service users, carers, clinicians and policymakers will be described in the reports of other work packages within ROAMER. These were specifically designed to ensure stakeholder participation, and have been integrated into the final roadmap.<sup>22</sup>

The priority setting process started by mapping research advances (i.e., developments within the areas of knowledge) and gaps in the field during the last 10 years. This was done through a systematic mapping of the published public mental health research,<sup>27</sup> as well as through discussions at the scientific workshops. All experts presented their views on research needs, and discussion followed until consensus was reached. The main points of the discussions were audio-recorded and noted by two rapporteurs in order to formulate lists of advances, gaps and future research priorities. The material derived from the five expert meetings was collapsed into a main document containing a comprehensive list of 50 research priorities within the public mental health field, described according to effectiveness (likelihood that it results in an effective intervention), deliverability (likelihood that it will have an impact), feasibility (likelihood that it can be achieved) and research strength (research competitiveness) in Europe.

In addition to the data provided from the initial workshop meetings and related email communication between the participants and the project team, a series of three web-based Delphi surveys<sup>28</sup> was conducted in order to reach consensus on the list of research priorities. The survey participants were selected based on literature searches in five electronic databases.<sup>27</sup> The 59 most productive researchers in the field of public mental health (based on the number of first-author publications) were invited in addition to the experts already involved through the organized workshops. In all, 103 experts were invited to take part in these surveys (including workshop participants, 35% survey response rate).

In the first wave of the Delphi process, participants were asked to indicate the relevance of each of the 50 suggested priorities and to justify their answers. In order to rank the listed statements in order of importance, the participants were also asked to rate the revised priorities in the second round on a scale from 1 to 6, 6 indicating the highest priority. In order to facilitate the rating of priorities across different domains of public mental health research, the priorities were divided into general priorities, methodological priorities and research topic priorities. At a second workshop, the experts discussed the outcomes of the second survey and the 20 items (3 general, 7 methodological and 10 topic based) that received the highest priority. After final revisions, the list was circulated to finalize the prioritisation in the third wave of the Delphi process. Hence, the priority items and their rank order were subject to revisions according to the received comments during the periods between the performed surveys. The consensus-based public mental health research priorities are presented below, as well as the key points from the discussions held—demonstrating both the research and societal relevance of the formulated statements.

## Results

The top 20 research needs raised by the consulted experts can be divided into 2 categories: ‘summary principles’—encompassing general recommendations for future public mental health research (Table 1) and ‘thematic research priorities’—including top priorities with regard to targeted research areas and methods used within the public mental health field (Table 2). Finally, the research priorities together represent three overarching goals mirroring societal challenges. Those are: (i) to identify causes, risk, protective and salutogenic (resilience) factors and processes for mental health across the lifespan; (ii) to advance the implementation of effective public mental health interventions and (iii) to increase equity and to reduce disparities in mental health. A summary description of the list of research priorities is provided below, followed by illustrative examples of listed priorities and ratings from the Delphi survey. With 6 indicating highest priority, the final 20 items received scores between 4.06 and 5.45, with a mean of 4.90 in the final round of the Delphi. These ratings indicate a high level of agreement among the survey participants ( $n=33$ ), which was also strengthened by the input received from email correspondence with workshop attendants.

### Public mental health research priorities

#### Summary principles

The experts stressed that positive mental health and protective factors should be prioritized when planning future research actions and strategies (ranked as no. 1 on the list, Table 1). According to the experts, an emphasis on positive mental health may reduce stigma and will promote mental health as a matter of interest for everybody. Mental health promotion factors are under-researched,<sup>4</sup> in spite of mental well-being closely connected to healthy life years and productivity.<sup>29</sup>

Furthermore, the need to develop more interdisciplinary perspectives for a better understanding of the complexity of mental health (rank order no. 2) emerged, as well as the fact that the theory base of public mental health research—including conceptual definitions and frameworks—should be strengthened across all research initiatives in the public mental health field (rank order no. 7).

Another summary principle was the development of robust and standardized measures to investigate mental health and its determinants (rank order no. 9). Standardized measures and typologies are necessary in order to monitor the impact of policies and programmes and allow for comparison across countries. Furthermore, combining quantitative and qualitative research when relevant was emphasized (rank order no. 10). This statement highlights that more comprehensive research methods will produce research results with higher relevance for the community context, at the same time as it supports rational decision making by public health policy makers.

**Table 1** Overview of summary principles for European public mental health research (numbers denote priority ranking order from 1 to 20, please also see Table 2)

#### Summary principles for public mental health research

1. Positive mental health and well-being and protective factors should be increasingly addressed in public mental health research	2. Public mental health research should build on interdisciplinary perspectives in order to understand the complexity of mental health	7. The theory base for public mental health research should be strengthened, including definitions and validity of concepts	9. Robust and standardised measures and typologies for public mental health research and validation of existing measures should be developed across Europe	10. Quantitative and qualitative research should be used in combination when relevant for capturing the complexity of public mental health and for enhanced understanding
---	--	---	--	---

**Table 2** Overview of European public mental health research priorities (numbers denote priority ranking order from 1 to 20, please also see Table 1)

Goal	Research challenges
Goal A: To identify causes, risk, protective and salutogenic factors and processes for mental health across the lifespan	3. To strengthen the understanding of the cultural factors (i.e., ethnicity, religion and value systems and nationality), relevant for public mental health 4. To perform and sustain long-term prospective cohort studies to investigate the determinants of mental health and well-being and to study risk and protective factors for mental disorders and suicidal behaviours 12. To strengthen research across the lifespan with regard to sensitive time windows of human development, including developmental and environmental salutogenic factors pertinent to public mental health 13. To strengthen research on the influence of families, public policies and services on mental health throughout the life course of children and adolescents 15. To strengthen the understanding of the links between physical and mental ill-health, and on their implications for services
Goal B: To advance the implementation of effective public mental health interventions	6. To develop systematic evaluations, including utilising natural experiments 8. To identify or develop intermediate outcome measures which are predictive of long-term outcomes and can be used as proxy measures in intervention studies where long-term outcomes are difficult to measure 11. To strengthen research on implementation, dissemination and sustainability of mental health promotion, mental disorder prevention and service delivery interventions 14. To develop appropriate participatory approaches for evaluation of complex public mental health interventions 16. To strengthen research on new approaches and technology for mental health promotion, disease prevention and mental health service delivery 18. To strengthen research on the efficiency and quality of mental health systems and community-oriented interventions, using randomized controlled trials and other high-quality research designs 20. To strengthen research on the frameworks to achieve effective mental health care on organizational, managerial and clinical level
Goal C: To increase equity and to reduce disparities in mental health	5. To strengthen research on the mental health of disadvantaged groups, marginalised populations and populations at risk 17. To strengthen research on mental health promotion in all policies 19. To strengthen research on the protection of rights of people with mental health problems

### Thematic research priorities

Fifteen thematic research priorities were identified, highlighting recommendations for both research topics and methods (Table 2). Five of these could be categorized under the overall goal of identifying causes, risk, protective and resilience factors for mental health across the lifespan (rank order nos. 3, 4, 12, 13 and 15), while seven of the listed priorities targeted the need to develop the implementation of effective and evidence-based public mental health interventions through use of robust and appropriate research methods (rank order nos. 6, 8, 11, 14, 16, 18 and 20). It was for example emphasized that translational and implementation research are critical research areas in relation to both mental health promotion and prevention interventions and that the facilitators and barriers for translation from knowledge to action need to be identified. Furthermore, the need for innovative implementation, including holistic approaches, empowerment-based strategies and the use of e-health approaches, was stressed, mirroring the societal changes taking place in Europe.

The remaining three priorities (rank order nos. 5, 17 and 19) indicated that increasing equity and reducing disparities in mental health should be a corner stone of public mental health research. It was underlined that disadvantaged groups (e.g., minority groups, individuals in long-term care or other institutional settings) are at risk of low levels of mental well-being and high levels of mental health problems, and are often excluded from or do not participate in research. The research gaps regarding improving the mental health of disadvantaged groups should be addressed with the participation of these groups.

### Discussion

These priorities identified through expert consensus stress that positive mental health and well-being and protective factors should be increasingly addressed in public mental health research to achieve a better understanding of the complexity of mental health and its broader determinants. Furthermore, the importance of

strengthening research on the implementation, dissemination and sustainability of promotion and prevention interventions in the mental health field is emphasized. Here, the focus should be on the important and modifiable risk and protective factors of mental health and well-being.

Currently, the geographical distribution of research in the public health field within Europe is skewed.<sup>26,30</sup> Most public mental health research originates from high-income countries in Northwestern Europe. Research focusing on mental health promotion and mental health policy initiatives is scarce and is mostly constructed within the UK.<sup>27</sup> Therefore, efforts are needed to support public mental health research in the underdeveloped research domains and European middle income countries.<sup>31</sup>

ROAMER adds a European viewpoint to the Grand Challenges in Global Mental Health Initiative that by a multi-panelled Delphi approach has identified global mental health research priorities for the next 10 years.<sup>32</sup> The Global Mental Health Initiative lists 25 mental health challenges ranked by disease-burden reduction, impact on equity, immediacy of impact and feasibility, with the top five challenges being: (i) to integrate screening and core packages of services into routine primary health care, (ii) to reduce costs and to improve the supply of effective medications, (iii) to provide effective and affordable community-based care and rehabilitation, (iv) to improve children's access to evidence-based care by trained health providers in low- and middle-income countries and (v) to strengthen the mental health component in the training of all healthcare personnel. Although these top-ranked global challenges were also supported by some public mental health research priorities identified by the European ROAMER experts—that is, the goals of improving the quality and access of mental health services, as well as building human resource capacity—they emphasize the need for allocation and access to treatment and tend to neglect the need to develop evidence-based public health initiatives to promote and protect mental health. Thus, our findings add to the global recommendations by presenting priorities relevant specifically for public mental health research in Europe.

The ROAMER public mental health research priority recommendations presented here should also be considered in the light of public health research strategies within the European Union Horizon 2020 programme. The public health working group of the Horizon 2020 programme<sup>33</sup> has identified specific thematic priorities for future research funding in four fields. In the field of (i) health promotion, the need for deepening the understanding of the adoption of healthy lifestyles and applying this knowledge to develop innovative interventions is emphasized. In the field of (ii) health problem prevention, research on the causes and management of disease is seen as a priority and diverting focus from interventions that are known to lack in effectiveness is recommended. In the fields (iii) and (iv) of health policy and services research, the Horizon 2020 working group focuses on actions that improve the humanity, quality, safety and efficiency of health initiatives and encourage a shift towards promotion and prevention instead of the treatment focus. Furthermore, more research on 'what works' to solve the major societal challenges in the public health field is warranted, rather than research that confirms the existence of already well-known problems.<sup>33</sup> It is reassuring that the Horizon 2020 public health working group and the ROAMER public mental health experts, despite having worked independently of each other, have reached converging recommendations.

The ROAMER public mental health research priority recommendations are consistent with those raised by the Public Health Innovation and Research in Europe<sup>34</sup> and the Strengthening Engagement in Public Health Research<sup>35</sup> projects. These projects have highlighted the need to coherently coordinate and allow for adequate funding for European public health research by the EU and member states, in order to give the best value to European citizens and to support the research needs of healthcare policymakers and health system leaders.<sup>34–36</sup> Furthermore, the need to involve the end-users and stakeholders is currently being stressed in all public health research areas.

### Strengths and limitations

The study procedure (i.e., the selection of involved experts and the development of the stated research priorities through a process standardised across the project) was both transparent and inclusive, ensuring broad involvement of research experts at all stages of the work. Based on the number of invitations sent for the web-based surveys, it can be concluded that the response rate was rather low (35%) and therefore subject to a risk of bias. Similar response rates were reached in other surveys within the project, with 40% of the approached respondents not opening the link to the web-based survey. Responses from across all member states would have been desirable and efforts were made to secure this. Unfortunately, the majority of researchers contributing to this study represented the Northwestern Europe, while the Eastern parts of the region were scarcely represented. However, despite the challenges related to the participation rate and representativeness of the sample, achieving consensus on research priorities in the area from nearly 60 mental health research experts from 16 European countries is a valuable contribution to research policy formulation.

This work was based on the experience of research experts within five key areas within the public mental health field. The involvement of stakeholders and end-users proved to be challenging in the expert-based work process. However, a separate consultation process will ensure that stakeholder perspectives will be represented in the final roadmap of mental health research in Europe, encompassing all areas and perspectives under study within ROAMER.<sup>22</sup>

### The next steps

'Horizon 2020'—the new EU research and innovation framework programme—aims to address the societal challenges caused by dominant health and demographic changes in Europe.<sup>37</sup> The

findings from the ROAMER project as presented in this article provide a solid basis for priority setting in the implementation of the European Horizon 2020 research programme. Finally, because research capacity largely is a national domain in many countries,<sup>18</sup> it appears crucial to translate the present recommendations into national and/or local contexts, making adequate resources available across administrative levels.

Population mental health is an important prerequisite for improved population health, social and economic development and prosperity in society.<sup>4</sup> In spite of the importance of mental well-being, early prevention and the development of accessible health provision and health services, a great deal of mental health research funding is geared towards explorative studies of disease mechanisms and individual-level treatment. Without devaluing the importance of such fundamental research, our recommendations highlight the need to scale up investment in research that supports population mental health and the implementation of large-scale interventions. Without sufficient investment in public mental health research, the goals of improving population mental health and reducing inequities will not be achieved.

### Acknowledgements

The authors wish to thank the ROAMER Consortium, as well as the mental health experts contributing to this work: M. Agius, A. Beekman, D. Bhugra, K. Bhui, J. M. Caldas de Almeida, V. Carli, D. Challis, C. Cooper, P. Cuijpers, C. Day, L. Fredén, A. Holte, R. Kuepper, L. Lien, S. McDaid, M. Muijen, N. Mulder, I. Petrea, M. Pompili, S. Priebe, U. Ravens-Sieberer, S. Reijneveld, J.-L. Roelandt, M. Ruggeri, R. Salokangas, M. Sharpe, A. M. Skovgaard, S. Stansfeld, T. Tamminen, M. Taube and M. Välimäki.

### Funding

The research within the ROAMER project leading to these results has received funding from the European Union Seventh Framework Program (FP7/2007-2013) under grant agreement no. 282586.

*Conflicts of interest:* None declared.

### Key points

- The increasing burden of mental disorders in Europe calls for actions to decrease its impact and increase positive mental health using population-based approaches.
- Research on implementation, dissemination and sustainability of promotive and preventive mental health interventions should be strengthened, identifying the facilitators and barriers in moving from knowledge to action.
- Mental health equity should be increased by strengthening research on mental health promotion across the lifespan and in all contexts and policies.

### References

- 1 McCarthy M, Clarke A. European public health research literatures—measuring progress. *Eur J Public Health* 2007;17(Suppl. 1):2–5.
- 2 Clarke A, Gatineau M, Grimaud O, et al. A bibliometric overview of public health research in Europe. *Eur J Public Health* 2007;17(Suppl 1):43–9.
- 3 Wahlbeck K, Taipale V. Europe's mental health strategy. *BMJ* 2006;333:210–1.
- 4 Herrman H, Jané-Llopis E. Mental health promotion in public health. *Promot Educ* 2005;12:42–6.
- 5 World Health Organization. The European Mental Health Action Plan. Available at: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0004/194107/63wd11e\\_Mental\\_Health-3.pdf](http://www.euro.who.int/__data/assets/pdf_file/0004/194107/63wd11e_Mental_Health-3.pdf). Accessed August 29th 2014.

- 6 Murray CJL, Vos T, Lozano R, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012;380:2197-223.
- 7 Pickett K, Wilkinson R. Inequality: an underacknowledged source of mental illness and distress. *Br J Psychiatry* 2010;197:426-8.
- 8 Thornicroft G, Brohan E, Rose D, et al. Global pattern of experienced and anticipated discrimination against people with schizophrenia: a cross-sectional survey. *Lancet* 2009;373:408-15.
- 9 Evans-Lacko S, Courtin E, Fiorillo A, et al. The state of the art in European research on reducing social exclusion and stigma related to mental health: a systematic mapping of the literature. *Eur Psychiatry* 2014;29:381-9.
- 10 Wittchen HU, Jacobi F, Rehm J, et al. The size and burden of mental disorders and other disorders of the brain in Europe 2010. *Eur Neuropsychopharmacol* 2011;21:668-9.
- 11 Alonso J, Petukhova M, Vilagut G, et al. Days out of role due to common physical and mental conditions: results from the WHO World Mental Health surveys. *Mol Psychiatry* 2011;16:1234-46.
- 12 Gustavsson A, Svensson M, Jacobi F, et al. Cost of disorders of the brain in Europe 2010. *Eur Neuropsychopharmacol* 2011;21:718-79.
- 13 Goodman A, Joyce R, Smith JP. The long shadow cast by childhood physical and mental problems on adult life. *Proc Natl Acad Sci U S A* 2011;108:6032-7.
- 14 Stewart-Brown SL, Schrader-McMillan A. Parenting for mental health: what does the evidence say we need to do? Report of Workpackage 2 of the DataPrev project. *Health Promot Int* 2011;26(Suppl 1):i10-28.
- 15 Durlak JA, Weissberg RP, Dymnicki AB, et al. The impact of enhancing students' social and emotional learning: a meta-analysis of school-based universal interventions. *Child Dev* 2011;82:405-32.
- 16 Jané-Llopis E, Katschnig H, McDaid D, Wahlbeck K. Supporting decision-making processes for evidence-based mental health promotion. *Health Promot Int* 2011;26(Suppl 1):i140-6.
- 17 McDaid D, Park A. Investing in mental health and well-being: findings from the DataPrev project. *Health Promot Int* 2011;26(Suppl 1):i108-39.
- 18 Chevrel K, McDaid D, Farmer CM, et al. Public and nonprofit funding for research on mental disorders in France, the United Kingdom, and the United States. *J Clin Psychiatry* 2012;73:e906-12.
- 19 Kingdon D, Wykes T. Increased funding needed for mental health research. *BMJ* 2013;346:f402.
- 20 Haro JM, Ayuso-Mateos JL, Bitter I, et al. ROAMER: a European roadmap for mental health research. *Int J Meth Psychiatr Res* 2014;23(Suppl 1):1-13.
- 21 van der Feltz-Cornelis CM, van Os J, Knappe S, et al. Towards Horizon 2020: challenges and advances for clinical mental health research—outcome of an expert survey. *Neuropsychiatr Dis Treat* 2014;10:1057-68.
- 22 Fiorillo A, Luciano M, Del Vecchio V, et al. Priorities for mental health research in Europe: a survey among national stakeholders' associations within the ROAMER project. *World Psychiatry* 2013;12:165-70.
- 23 Schumann G, Binder EB, Holte A, et al. Stratified medicine for mental disorders. *Eur Neuropsychopharmacol* 2014;24:5-50.
- 24 Wittchen HU, Knappe S, Andersson G, et al. The need for a behavioral science focus in research on mental health and mental disorders. *Int J Meth Psychiatr Res* 2014;23(Suppl 1):29-37.
- 25 Keyes CLM, editor. *Mental Well-Being: International Contributions to the Study of Positive Mental Health*. New York: Springer, 2013.
- 26 McCarthy M. Public health research in Europe: SPHERE and the Nordic countries. *Scand J Public Health* 2008;36:225-7.
- 27 Forsman AK, Ventus DB, van der Feltz-Cornelis CM, Wahlbeck K. Public mental health research in Europe: a systematic mapping for the ROAMER project. *Eur J Public Health* 2014;24:954-9.
- 28 Hsu CC, Sandford BA. The Delphi technique: making sense of consensus. *Pract Assess Res Eval* 2007;12:1-8.
- 29 Keyes CLM. Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. *Am Psychol* 2007;62:95-108.
- 30 Clarke A, Gatineau M, Thorogood M, Wyn-Roberts N. Health promotion research literature in Europe 1995-2005. *Eur J Public Health* 2007;17(Suppl 1):24-8.
- 31 McCarthy M. Public health research support through the European structural funds in Central and Eastern Europe and the Mediterranean. *Health Res Policy Syst* 2012;10:12.
- 32 Collins PY, Patel V, Joestl SS, et al. Grand challenges in global mental health. *Nature* 2011;475:27-30.
- 33 Browne J, Sørensen TIA. European public health research in Horizon 2020. *Eur J Public Health* 2013;23:722.
- 34 McCarthy M, Zeegers Paget D, Barnhoorn F. National action for European public health research. *Eur J Public Health* 2013;23(Suppl 2):43-6.
- 35 McCarthy M. *Public Health Research—Europe's Future (STEPS Report)*. London: University College London, 2011.
- 36 Walshe K, McKee M, McCarthy M, et al. Health systems and policy research in Europe: Horizon 2020. *Lancet* 2013;382:668-9.
- 37 Galsworthy M, McKee M. Europe's 'Horizon 2020' science funding programme: how is it shaping up? *J Health Serv Res Policy* 2013;18:182-5.