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ORIGINAL ARTICLE

Setting priorities for mental health research in Brazil

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Abstract
Background: The main aim of this study is to review the agenda for research priorities of mental health in Brazil. *Methodology*: The first step was to gather 28 experts (22 researchers, five policy makers, and the coordinator) representing all mental health fields from different geographical areas of the country. Participants were asked to list what they considered to be the most relevant mental health research questions for the country to address in the next 10 years. Seventeen participants answered this question; after redundancies were excluded, a total of 110 responses were collected. As the second step, participants were asked to rank which questions were the 35 most significant. The final step was to score 15 items for each of the 35 selected questions to determine whether it would be a) answerable, b) effective, c) deliverable, d) equitable, and e) effective at reducing the burden of mental health. The ten highest ranked questions were then selected. *Results*: There were four questions addressing primary care with respect to a) the effectiveness of interventions, b) "matrix support", c) comparisons of different models of stepped care, and d) interventions to enhance identification and treatment of common mental disorders at the Family Health Program. The other questions were related to the evaluation of mental health services for adults and children/adolescents to clarify barriers to treatment in primary care, drug addiction, and severe mental disorders; to investigate the cost-benefit relationship of anti-psychotics; to design interventions to decrease alcohol consumption; and to apply new technologies (telemedicine) for education and supervision of non-specialists. *Conclusion*: This priority-setting research exercise highlighted a need for implementing investments at the primary-care level, particularly in the family health program; the urgent need to evaluate services; and policies to improve equity by increasing accessibility to services and testing interventions to reduce barriers for seeking mental health treatment.

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Agenda de prioridades de pesquisa para saúde mental no Brasil

Resumo
Introdução: O principal objetivo desse estudo foi revisar a agenda de prioridades em pesquisa em saúde mental no Brasil. *Método*: Foram selecionados 28 especialistas (22 pesquisadores, cinco legisladores e o coordenador) de diferentes regiões. Responderam ao que consideravam mais relevante em pesquisa para a saúde mental para os próximos 10 anos. Dezessete responderam e configuraram 110 questões, que foram reavaliadas por eles, com atribuição de escore, a partir de 15 itens distribuídos segundo grau de responsividade, eficácia, aplicabilidade, equidade e impacto na redução da carga da doença mental. 35 questões, e dentre elas as 10 mais bem pontuadas, foram destacadas. *Resultados*: Prevaleceram indicações para estudos de efetividade das intervenções, matriciamento, comparação entre modelos de intervenção e detecção e tratamento de transtornos mais prevalentes na Estratégia da Saúde da Família. Avaliação de serviços quanto às barreiras ao tratamento; custo-efetividade dos antipsicóticos, intervenções contra efeitos do álcool e outras drogas, e aplicação de tecnologias (telemedicina) para educação e supervisão dos generalistas foram outros. *Conclusão*: Apontou-se para necessidade de investimentos na saúde mental na atenção primária à saúde; avaliação do sistema de serviços de cuidados de saúde mental, e pesquisas para romper barreiras ao acesso e à equidade no tratamento dos transtornos mentais.

Introduction

Mental disorders account for 14% of the global burden of disease.[1] By 2020, it is predicted that depression will be the second-leading cause of disease burden.[2] In addition, substance abuse disorders contribute to more than 4% of the total burden.[3] In Brazil, in 2003, neuropsychiatric disorders accounted for 18% of Disability Adjusted Lost Years (DALYs) and 35% of the Years Lost due to Disability (YLDs).[4] The high burden of neuropsychiatric disorders in low- and middle-income countries (LAMIC) is contrasted with low investments in mental health:[5,6] most of the LAMIC spend less than 1% of the total health budget on mental health.[5,7-10] The high morbidity and low investments are important factors in explaining why a minority of individuals with mental and substance disorders (MSDs) ever receive treatment.[11] In addition, MSDs comprise the leading cause of disability in young people in every region of the world.[12]

Increasingly, there is a need to set priorities in health research by allocating investments in a fair and legitimate way on the basis of sound and transparent methodologies. The explicit and rational setting of priorities for investment in research is now accepted as an integral part of any research management process.[16] Research can play a critical role in the response to global health challenges, but it is crucial to adopt some basic assumptions when making decisions to allocate investments in health research. As part of the National Priority Health Research Agenda established by the Brazilian Ministry of Health,[17] the main aim of this exercise is to review the agenda for mental health research priorities by adopting the Child and Nutrition Research Iniciative (CNRI) method.[18] This is a transparent and systematic process, where the outcome of the research is based on the following principles: a) reduction of the burden, b) promotion of equity, and c) promotion of health and wellbeing.

Methods

The Brazilian Ministry of Health convened a meeting on September 21, 2010, aimed at reviewing the National Agenda for Health Research Priorities. One of the authors (JJM) was appointed to coordinate the mental health component of this exercise. JJM was responsible for selecting the experts in specific mental health areas and ensuring gender and geographical representativeness. The coordinator adopted the following criteria for the selection of experts: equitable distribution based on gender, geography, and areas of knowledge; the impact of their scientific research; and their availability for replying to the questionnaires. The head of the Mental Health Division, Prof. Pedro Gabriel Delgado, was responsible for selecting mental health administrators and experts in policy making. The Child and Nutrition Research Initiative (CNRI), a priority-setting methodology developed by Rudan et al.[19] that had been previously used to establish mental health priorities on a global level, was adopted for this exercise.[18] The CNRI methodology defines the context in which prioritization takes place (in this case Brazil). It then defines a set of criteria that will be used to set priorities among many competing research investment options. Those research investment options are then listed in a systematic and structured way. The rationale, conceptual framework, and application guidelines for CNRI methodology have all been described in detail elsewhere.[20]

Technical working group

Table 1 presents the steps for implementation of the methodology at a glance. In the first step, as stated above, a group of experts from different mental health domains were recruited. Experts included infant and child psychiatrists, geriatric psychiatrists, and specialists in drug addiction and primary care. The time scale for the exercise was ten years. The next step was to create a list of research questions, which were divided into five domains: a) epidemiological research or research to inform priority setting, b) research to improve the efficiency

of health systems already in place, c) research to improve the efficiency of health systems already in place, focusing on health policy and systems, d) research to improve the affordability and deliverability of existing interventions, and e) research to develop new health interventions.

The third step was to score the listed questions by five criteria: a) the likelihood of answerability in an ethical way, b) the likelihood of efficacy and effectiveness, c) the likelihood of deliverability and affordability, d) the maximum potential for disease burden reduction, and e) the likely impact of equity in the population (see Box 1 for a list of the questions).

Table 1 Recruitment and Technical Working Group

Step 1	Recruited a group of experts from different mental health domains the time frame for the exercise was ten years 28 participants (22 researchers, 5 policy makers, and the coordinator). Participants were asked to list relevant mental health research questions on their own, to consult the Brazilian Agenda for Health Research Priorities,[17] or to consult the mental health research priorities list reported by the Lancet expert group for middle and low income contries[10]
Step 2	Create a list of research questions in five domains: 1. epidemiological research or research to inform priority setting 2. research to improve the efficiency of the health system already in place 3. research to improve the efficiency of the health system already in place focusing on health policy and systems 4. research to improve the affordability and deliverability of existing interventions 5. research to develop new health interventions
Step 3	Score the listed questions by five criteria: 1. likelihood of answerability in an ethical way 2. likelihood of efficacy and effectiveness 3. likelihood of deliverability and affordability 4. maximum potential for the reduction of disease burden 5. likely impact of equity in population 15 participants replied to the questionnaire by e-mail. The minimum number of votes among questions selected was five. 35 questions were selected (Appendix)

Box 1 Questions used by technical experts to assign intermediate scores to competing research questions

Criterion 1: likelihood that research would lead to new knowledge (enabling development or planning of an intervention) in an ethical way

1. Would you say the research question is well framed and end-points are well defined?
2. Based on the level of existing research capacity in the proposed research area and the size of the gap between the current level of knowledge and the proposed end-points, would you say that a study could be designed to answer the research question and to reach the proposed end-points of the research?
3. Do you think that a study needed to answer the proposed research question would obtain ethical approval without major concerns?

Box 1 Questions used by technical experts to assign intermediate scores to competing research questions *(cont.)*

Criterion 2: assessment of the likelihood that the intervention resulting from the proposed research would be effective

1. Based on the best existing evidence and knowledge, would an intervention that was developed or improved through the proposed research be efficacious?
2. Based on the best existing evidence and knowledge, would an intervention that was developed or improved through proposed research be effective?
3. If the answer to either of the previous two questions is positive, would you say that the evidence on which these opinions are based is of high quality?

Criterion 3: assessment of deliverability, affordability and sustainability of the intervention resulting from proposed research

1. Taking into account the level of difficulty in delivering the intervention from the perspective of the intervention itself (e.g., design, standardization, safety), the infrastructure required (e.g., human resources, health facilities, communication and transport infrastructure) and users of the intervention (e.g., need for change of attitudes or beliefs, supervision, and existing demands), would you say that the end-points of the research would be deliverable within the context of interest?
2. Taking into account the resources available to implement the intervention, would you say that the end-points of the research would be affordable within the context of interest?
3. Taking into the account government capacity and partnership requirements (e.g., the adequacy of government regulation monitoring and enforcement; governmental inter-sectoral coordination; partnerships with civil society and external donor agencies; favorable political climate to achieve high coverage), would you say that the end-points of the research would be sustainable within the context of interest?

Criterion 4: assessment of maximum potential of disease burden reduction

This dimension is considered "independent" of the others. To score competing options fairly, the maximum potential to reduce disease burden should be assessed as the potential impact fraction under an ideal scenario. Reviewers should assume, for example, that the exposure to a targeted disease risk is decreased to 0% or that the coverage of a proposed intervention is increased to 100%, regardless of how realistic that scenario currently is- that aspect will be captured by other dimensions of the priority-setting process, such as deliverability, affordability and sustainability.

The following questions should then be answered:

1. Based on the results of completed intervention trials (i.e., existing interventions) or, for the new interventions, the proportion of preventable burden under an ideal scenario (i.e., potential interventions), would you say that the successful completion of research end-points would have the capacity to remove 5% of the total disease burden or more?
2. to remove 10% of the disease burden or more?
3. to remove 15% of the disease burden or more?

Criterion 5: assessment of the impact of the proposed health research on equity

1. Would you say that the present distribution of the disease burden affects mainly the underprivileged in the population?
2. Would you say that either mainly the underprivileged, or all segments of society equally would be the most likely to benefit from the results of the proposed research after its implementation?
3. Would you say that the proposed research has the overall potential to improve equity in the distribution of disease burden in the long term (e.g., 10 years)?

Participants

The technical working group consisted of 28 participants (22 researchers, five policy makers, and the coordinator). Participants were asked to list relevant mental health research questions on their own, to consult the National Agenda for Health Research Priorities,[17] or to consult the LAMIC mental health research priorities list reported by the Lancet expert group.[10] Seventeen participants provided 110 questions distributed in the following areas:

a) Epidemiological research or research to inform priority setting (27 questions);
b) Research to improve efficiency of health systems already in place (35 questions);
c) Research to improve efficiency of health systems already in place focusing on health policy and systems (18 questions);
d) Research to improve affordability and deliverability of existing interventions (11 questions);
e) Research to develop new mental health interventions. (19 questions).

In the second stage of the process, the questions were emailed to all participants. Participants were then asked to rank which were the most relevant 35 questions, taking into consideration the following points: a) the likelihood of answerability in an ethical way, b) the likelihood of efficacy and effectiveness, c) the likelihood of deliverability and affordability, d) the maximum potential for disease burden reduction, and e) the likely impact of equity in the population (Box 1). Fifteen (56%) participants replied to the questionnaires. The shortened 35-question list is displayed in Appendix 1. All included questions received at least five votes.

Results

The final results (top ten and bottom ten) of the scoring process, broken down by disorder, are shown in Table 2.

The 10 most highly weighted questions, which we deem the top 10 priorities, are listed in Table 1. Four of the top 10 priorities (the first, second, ninth and tenth) relate to

Table 2 The list of the top ten priorities

Top Ten - highest priority						
Questions	**Ans**	**Eff**	**Deliv**	**Imp**	**Equit**	**WS**
Q03 - Studies on the cost-effectiveness of combined interventions (psychopharmacological and psychosocial) to prevalent and/ or disabling mental disorders conducted by interdisciplinary and multidisciplinary teams in the primary care setting, particularly for mental disorders that affect children and adolescents.	64.71	35.29	70.59	52.94	76.47	**69.02**
Q01 - Interventions to identify and treat common mental disorders in primary care, especially in the Family Health Strategy, with active involvement of non-medical professionals in Family Health Teams.	47.06	41.18	82.35	58.82	64.71	**69.02**
Q02 - Pharmacoeconomic studies to determine the cost-effectiveness of psychotropic drugs used in the public health system.	29.41	17.65	88.24	58.82	58.82	**65.10**
Q17 - Research to establish what are the most effective policies to control the consumption of alcohol and drugs at the population level, such as taxation, availability of alcoholic beverages, control of marketing, and specific policies to prevent drinking and driving.	64.71	35.29	64.71	76.47	70.19	**65.10**
Q12 - Telemedicine for psychiatric consultation for non-psychiatrist physicians.	47.06	29.41	58.82	70.59	70.59	**59.22**
Q13 - Study of the barriers to access to treatment for individuals with severe and persistent mental disorders and drug addiction.	41.18	29.41	70.59	58.82	47.06	**59.22**
Q04 - Epidemiological and social cost studies with a focus on the demands for mental health that reach primary health care units, and with an emphasis on coverage gaps and identification of barriers to access to treatment.	52.94	41.18	82.35	58.82	64.71	**58.82**
Q 18 - Research with a nationally representative sample on the effectiveness and efficiency of the national mental health care policy (focused on general and childhood Psychosocial Care Centers - CAPS and CAPSi) for those affected by prevalent and/or disabling mental disorders, especially for mental disorders that affect children and adolescents.	47.06	23.53	58.82	64.71	58.82	**58.82**
Q05 - Studies on the effectiveness of primary care and integrated care ("matrix support") in the resolution of cases of mental disorders.	41.18	35.29	70.59	64.71	76.47	**57.65**
Q31 - Cost-effectiveness study of different models	47.06	35.29	58.82	52.94	47.06	**55.69**

the identification and treatment of common mental disorders in primary care. The third priority is to determine the cost-effectiveness of psychotropic drugs used in public health. The fourth priority was to implement interventions to control the consumption of alcohol and drugs at the population level, and the fifth priority was to investigate the use of telemedicine for psychiatric consultation for patients of non-psychiatrist physicians. The sixth and seventh priorities involve the identification of barriers to the access to treatment. The eighth priority involves the study of the effectiveness and coverage of the Community Psychosocial Centers for adults (CAPS-A) and children and adolescents (CAPS-i), in treating those affected by prevalent and/or disabling mental disorders.

Discussion

The results of this priority-setting process indicate that to significantly reduce the burden mental disorders in Brazil, research should concentrate on devising interventions at the primary-care level, evaluating existing mental health service policies, examining the cost-effectiveness of antipsychotics in Brazil, developing interventions to decrease alcohol consumption, identifying barriers to treatment, and using new technologies to train and supervise non-specialists.

The main actions recommended at the primary-care level, particularly in the Family Health Program (PSF), are as follows: a) to assess the effectiveness of interventions, b) to study matrix support, c) to study different models of stepped care, and d) to develop interventions that identify and treat common mental disorders within the Family Health Program. The recommendations particularly emphasize development at the primary-care level rather than using expensive technologies and specialized human resources.

Child and adolescent mental health problems are common, affecting between 10% and 20% of children worldwide. They are even more relevant in LAMIC, where youth constitutes up to 50% of the total population.[12] Future research is needed to address innovative ways to promote collaboration among general health programs and sectors such as education and justice as well as to evaluate strategies to prevent mental disorders and to implement cost-effective interventions.[21]

One of the questions is related to the most effective policies to control the consumption of alcohol and drugs at the population level, such as taxation, availability of alcoholic beverages, control of marketing, and specific policies to prevent drinking and driving. It is widely recognized that the early use of alcohol is related to negative performance in school, unsafe sex, development of abnormal behavior, and a higher risk of developing alcohol dependence in adulthood. According to national probabilistic research conducted in Brazil,[15] almost half of the 36% of 14 to 17-year-old boys who drink at least once a year have consumed three or more drinks at once. The priorities focus on alcohol largely because of the high burden of mortality and morbidity in Brazil due to traffic-related injuries.[22] Recent policies in Brazil have focused on alcohol prevention, but little has been done to assess whether these policy changes have been effective.

The questionnaire is somewhat long, requiring approximately one hour to reply, and only 56% of the selected experts completed the questionnaires in the last part of the survey. The coordinator arbitrarily selected the experts, and different participants might have achieved different results. Even taking these limitations into account, this exercise can be regarded as a solid method for setting national research priorities in Brazil. Emphasis was placed on prioritizing community investments, mostly at the level of family health programs, and two main focuses were selected as the major targets of future investigations, children and adolescents, and alcohol addiction. Moreover, this agenda highlights the need for cost-benefit analyses of psychosocial interventions and psychotropic drugs, the evaluation of current mental health services, the determination of local barriers to treatment, and the evaluation of telemedicine to supervise non-specialists.

Conclusion

This exercise demonstrated the feasibility of applying a systematic methodology to establish an agenda for mental health priorities in Brazil. This strategy should be adopted by other LAMIC for the rational allocation of scarce resources and fostering of equity in society. This agenda could be used to foster investments in the areas determined by experts to be the most relevant research priorities, with the overall goal of decreasing disease burden and improving the quality of life of patients and their families in Brazil.

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