UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL
FACULDADE DE MEDICINA
PROGRAMA DE PÓS-GRADUAÇÃO EM CIÊNCIAS MÉDICAS: PSIQUIATRIA

TESE DE DOUTORADO

SAÚDE MENTAL DE CRIANÇAS E ADOLESCENTES:

UMA PERSPECTIVA GLOBAL

Christian Kieling

Orientador: Prof. Dr. Luis Augusto Rohde

Porto Alegre, abril de 2012.

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When it comes to global health, there is no 'them'... only 'us'.

Global Health Council

If you think research is expensive, try disease.

Mary Lasker

You can't connect the dots looking forward; you can only connect them looking backwards. So you have to trust that the dots will somehow connect in your future.

Steve Jobs

Para Renata.

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Aos meus pais, pelo amor e incentivo sempre renovados.

SUMÁRIO

ABREVIATURAS E SIGLAS

ADHD	attention deficit hyperactivity disorder
bp	base pairs
CD	conduct disorder
DALY	disability-adjusted life year
DAT1	gene para o transportador de dopamina
DCNC	doenças crônicas não-comunicáveis
DNA	deoxyribonucleic acid
DSM	Diagnostic and Statistical Manual of Mental Disorders
GNI	gross national income
GxE	interação gene-ambiente
HIC	países de alta renda
HIV	vírus da imunodeficiência humana
LMIC	países de baixa e média renda
MAOA	gene para a enzima monoamino oxidase A
MGMH	Movement for Global Mental Health
MNS	doenças mentais, neurológicas e por uso de substâncias
NIMH	National Institutes of Mental Health
ODD	oppositional defiant disorder
OMS	Organização Mundial da Saúde
ONU	Organização das Nações Unidas
PCR	polymerase chain reaction
rGE	correlação gene-ambiente
ROC	receiver operating characteristic
SDQ	Strengths and Difficulties Questionnaire
TDAH	transtorno de déficit de atenção hiperatividade
UTR	untranslated region
VNTR	variable number of tandem repeats
WPA	World Psychiatric Association

RESUMO

Ao longo da última década, houve um crescente interesse nas questões de saúde global e, particularmente, de saúde mental global. Problemas de saúde mental começam precocemente e estima-se que afetem de 10% a 20% das crianças e adolescentes em todo o mundo, estando entre as principais cargas de doença na população. Isto é especialmente relevante no contexto de países de baixa e média renda, onde 90% da população mundial jovem vive. Este estudo tem como objetivo apresentar e discutir o estado atual da pesquisa em saúde mental na infância e adolescência, baseando-se em uma perspectiva global, a partir de três abordagens complementares. Primeiro, apresentamos uma revisão da literatura atual sobre a saúde mental de crianças e adolescentes enfocando aspectos relacionados à epidemiologia, intervenções preventivas e terapêuticas, bem como seus aspectos econômicos e políticos, com foco em países de baixa e média renda (artigo #1). Em seguida, mapeamos a produção científica mundial no campo da saúde mental na infância e adolescência (artigo #2). Por fim, demonstramos a viabilidade de um estudo de interação gene-ambiente em uma coorte de adolescentes em um país em desenvolvimento, enfocando o surgimento de problemas externalizantes (artigo #3). Nossos resultados indicam que, embora a prevalência de problemas de saúde mental em crianças em países de baixa e média renda seja semelhante a de países de alta renda, países com poucos recursos enfrentam grandes lacunas na investigação e implementação de estratégias eficazes de prevenção e tratamento de problemas de saúde mental. Esta dificuldade se reflete e é acompanhada por uma escassa produção científica em periódicos indexados, nos quais pesquisadores originários de países de baixa e média renda respondem por menos de 10% das autorias. É possível mudar este cenário através da realização de pesquisas de alta qualidade em países de baixa e

média renda. No maior estudo avaliando o impacto da interação de alguns genes com determinados fatores ambientais de risco sobre problemas externalizantes em adolescentes realizado em um países em desenvolvimento, identificamos efeitos principais para os fatores de risco ambientais, mas não observamos impacto de interações gene-ambiente, tal como descrito em alguns estudos prévios conduzidos em países de alta renda. Apesar de haver uma clara associação entre tabagismo materno e escores de hiperatividade na adolescência ($p<0.001$), nenhum efeito principal do gene do transportador de dopamina ou da interação gene-ambiente foi detectado. De modo similar, maus tratos na infância se mostraram associados a problemas de conduta entre meninos ($p<0.001$), porém efeitos principais do gene da monoamino oxidase A ou da interação não foram observados. A promoção da saúde mental na infância e na adolescência é um desafio mundial, mas também representa uma janela de oportunidade, na medida em que muitos dos países de média e baixa renda estão passando por uma transição demográfica, de forma que a intervenção hoje pode resultar em uma diminuição significativa da carga de doença no futuro.

ABSTRACT

Over the last decade, there has been a growing interest in the field of global health, and particularly in global mental health. Mental health problems start early in life, affect around 10% to 20% of children and adolescents worldwide, and are a leading cause of health-related burden. This is especially relevant for low- and middle-income countries (LMIC), where 90% of young people live. This study aims to present and discuss the current status of the field of child and adolescent mental health using a global perspective based on three complementary approaches. First, we present a review of the current literature on mental health of children and adolescents focusing on epidemiology, preventive and therapeutic interventions, as well as its economic and political aspects, with a special attention to LMIC (paper #1). Then, we map the worldwide scientific production in the field of mental health in childhood and adolescence (paper #2). Finally, we demonstrate the feasibility of a study designed to evaluate the impact of the interaction between genes and environments in externalizing problems in adolescents from a birth cohort in a developing country (paper #3). Our findings indicate that although the prevalence estimates for childhood and adolescence mental health problems in LMIC is similar to those found in high-income countries (HIC), resource-poor settings face large gaps in research and implementation of effective prevention and treatment strategies for mental health problems. This scenario is complemented by a scarce scientific output from LMIC: researchers from LMIC respond for less than 10% of authorships in indexed journals. It is possible to change this by conducting high quality research in LMIC. In the largest study to assess the interaction between candidate genes and environmental risk factors on externalizing problems during adolescence performed in a LMIC to

date, we identified main effects of environmental risk factors, but did not observe impact of gene-environment interactions, as described in some of the studies conducted in HIC. Although there was a clear association between prenatal maternal smoking and hyperactivity scores in adolescence ($p<0.001$), no main genetic or interaction effects for the dopamine transporter gene were detected. Similarly, childhood maltreatment showed to be associated with conduct problems among adolescent boys ($p<0.001$), with no observable main genetic or interaction effects for the monoamine oxidase A gene. The promotion of child and adolescent mental health is a worldwide challenge, but also represents a window of opportunity, as many LMIC are currently going through a demographic transition, and intervention today is likely to result in a decreased burden in the future.

1. Apresentação

O estudo da saúde mental de crianças e adolescentes é um campo relativamente novo. O grande crescimento que a área tem apresentado, entretanto, não tem ocorrido de maneira uniforme nas diferentes regiões geográficas. Houve um progresso importante na descrição de síndromes e transtornos, hoje nosologicamente melhor definidos, na identificação precoce de indivíduos em risco para o desenvolvimento de transtornos mentais, na validação de intervenções preventivas e terapêuticas baseadas em evidências, e na implementação de serviços de saúde que ofereçam tais conhecimentos nos mais diversos contextos culturais e sociais. Tais avanços, contudo, não estão disponíveis para a grande maioria dos 2,2 bilhões de crianças e adolescentes do planeta, sobretudo em países de baixa e média renda.

O florescimento do campo da saúde global tem ido além da tradicional atenção às doenças infecciosas e carenciais e do mais recente foco em doenças crônicas não-comunicáveis, como diabetes, câncer e doenças cardiovasculares. O reconhecimento do impacto dos problemas de saúde mental sobre a carga global de doenças e a inter-relação entre transtornos mentais e demais doenças não deixam dúvidas acerca da relevância do emergente campo da saúde mental global. Inicialmente focado nos chamados transtornos mentais comuns e transtornos mentais graves (sobretudo do ponto de vista da oferta de serviços), o estudo da saúde mental global mais recentemente tem incluído uma perspectiva desenvolvimental, priorizando também os cuidados com crianças e adolescentes.

Nesse sentido, torna-se necessário mapear a situação atual da saúde mental de crianças e adolescentes ao redor do mundo. Apesar de ainda esparsos, os estudos de

qualidade já existentes em países de baixa e média renda podem ser utilizados para identificar as lacunas e guiar os próximos passos para a promoção da saúde mental nos locais onde nove entre cada dez crianças e adolescentes vivem atualmente. Informações sobre prevalência e impacto dos transtornos mentais, identificação de fatores de risco e de proteção, além de mecanismos de resiliência, são essenciais para o planejamento de ações de saúde. A avaliação rigorosa de ações preventivas (abrangendo desde intervenções universais inespecíficas até aquelas direcionadas para indivíduos em ultra alto risco) e de tratamentos eficazes nos diversos contextos culturais e sociais também é fundamental para a organização de serviços de saúde baseados em evidência. Existem ainda argumentos éticos e também econômicos para justificar o estabelecimento de políticas públicas de atenção à saúde mental de crianças e adolescentes nos diferentes níveis de cuidados. Todos esses aspectos são abordados no primeiro artigo desta tese.

O segundo artigo aqui apresentado buscou mapear a produção científica mundial na área da saúde mental de crianças e adolescentes. A contribuição ainda relativamente pequena dos países de baixa e média renda reforça a importância de estratégias para ampliar a produção científica como condição necessária para promover abordagens mais efetivas na prevenção e no tratamento dos transtornos mentais entre os jovens, reconhecendo o papel central que a produção e a difusão de conhecimentos tem na modificação de realidades.

Por fim, o terceiro artigo que compõe esta tese é um exemplo da viabilidade da realização de um estudo de saúde mental de grande porte utilizando o melhor delineamento possível em um país de média renda. Investigar a interação gene-ambiente (GxE) tem sido uma das estratégias dominantes na busca pelas origens dos

transtornos mentais nos últimos anos. Partindo dos dados do estudo longitudinal da Coorte de Nascimentos de Pelotas de 1993, o cruzamento de dados de saúde mental e material genético permitiu a realização do maior estudo de GxE em saúde mental fora de um país de alta renda, neste caso enfocando os transtornos externalizantes na adolescência.

2. Base conceitual

2.1. Saúde global e saúde mental global

Saúde e doença são universais. Ao longo da história, mas sobretudo nas últimas décadas, uma perspectiva global tem sido adotada para compreender e desenvolver estratégias de intervenção para doenças nos mais diversos contextos sociais, econômicos e culturais. O conceito contemporâneo de saúde global é derivado dos campos de saúde pública e saúde internacional, que, por sua vez, têm suas origens na chamada medicina tropical (Koplan et al., 2009). Para além de ações que se caracterizaram inicialmente como humanitárias e binacionais, atualmente parece haver consenso, mesmo entre países de alta renda, de que a promoção da saúde em países de baixa e média renda constitui um elemento essencial para o desenvolvimento humano de todas as nações (Fauci, 2007).

Existente e relevante desde o início das interações entre os povos, a globalização da saúde talvez tenha ocorrido de modo mais intenso a partir do movimento expansionista das navegações iniciado em 1492, que resultou na chamada unificação microbiana do mundo: o desembarque dos europeus nas Américas, por exemplo, foi acompanhado pela chegada do sarampo, da varíola e da febre amarela no continente. Apenas no século XIX, entretanto, é que avanços no conhecimento acerca das causas dessas doenças e o desenvolvimento de terapêuticas eficazes, juntamente com o reconhecimento de direitos fundamentais de todos os seres humanos, levaram a esforços concretos para combater tais problemas no plano internacional (Berlinguer, 1999).

Mais recentemente, a globalização da saúde seguiu centrada em doenças transmissíveis, observando uma expansão significativa com o surgimento do vírus da imunodeficiência humana (HIV). O foco nas chamadas 'doenças tropicais negligenciadas' (como tuberculose e malária, por exemplo) também dominou o campo da saúde global na segunda metade do século XX. O desenvolvimento de intervenções de baixo custo que poderiam ser implementadas por profissionais com níveis de treinamento baixo ou intermediário levaram instituições filantrópicas, como a Bill & Melinda Gates Foundation, a Merck Foundation e a Rockfeller Foundation, a investir bilhões de dólares no combate a tais doenças (Fauci, 2007).

Com o aumento da expectativa de vida – sobretudo no século passado, quando ocorreu mais da metade do ganho em número de anos vividos nos cinco últimos milênios – muitos países de baixa e média renda passaram a apresentar uma transição demográfica e sofrer com a chamada 'dupla carga' de doenças (a persistência das doenças comunicáveis acompanhada pelo aumento das condições crônicas). O impacto crescente das doenças crônicas não-comunicáveis (DCNC), responsáveis por 63% das mortes no mundo, sendo 80% delas em países de baixa e media renda, fez com que esse grupo de doenças passasse também ocupar o foco das atenções na discussão sobre saúde global (Nugent et al., 2011).

Após mobilizações políticas intensas de governos e organizações não-governamentais, em 2011 foi realizada uma sessão especial na Assembleia Geral da Organização das Nações Unidas (ONU) para tratar de DCNC (a segunda sessão especial na história centrada em assuntos de saúde, precedida apenas pela reunião sobre HIV/AIDS de 2001). Mesmo havendo evidências consistentes de que problemas neuropsiquiátricos constituem o grupo de doenças responsável hoje pela

maior carga de doença em países como o Brasil (Schmidt et al., 2011), na sessão de 2011 não foram abordados tópicos relacionados à saúde mental.

O conceito de saúde global tem sido utilizado com diferentes definições, sendo uma delas "questões de saúde que transcendem fronteiras nacionais e que podem ser melhor abordadas a partir de ações cooperativas" (Institute of Medicine, 1997). De modo mais detalhado, saúde global também pode ser definida como um campo que (1) se refere a qualquer questão de saúde que afete muitos países ou seja afetada por determinantes transnacionais; (2) preocupa-se mais com o escopo do que com a geografia dos problemas; (3) engloba as complexas interações entre sociedades; (4) utiliza os recursos, os conhecimentos e as experiências de diversas sociedades para lidar com os desafios de saúde ao redor do globo; e (5) inclui prevenção, tratamento e reabilitação, além de ciências básicas (Koplan et al., 2009).

De certo modo, pode-se dizer que as concepções contemporâneas de saúde global talvez não sejam tão diferentes dos objetivos iniciais quando da criação da Organização Mundial da Saúde (OMS): "o objetivo da OMS deve ser que todas as pessoas atinjam o maior nível possível de saúde". Ao longo dos anos, todavia, o contexto mundial foi se modificando em relação à realidade de 1948, ano em que a OMS foi criada – a interdependência de estados, sociedades e economias cresceu, o que tanto aumentou o número de ameaças comuns a diversos países quanto abriu novas oportunidades de colaboração entre nações (Skotheim et al., 2011).

O conceito de saúde internacional, por exemplo, já era corrente no final do século XIX e no início do século XX, quando se referia sobretudo a um foco no controle de epidemias nas fronteiras entre nações. A expressão saúde global, por sua vez, implica consideração pela saúde de todas as pessoas do planeta, acima de preocupações em

relação a países específicos. Ambas as concepções, evidentemente, não são mutuamente excludentes, possuindo diversos pontos de sobreposição (Tabela 1) (Brown et al., 2006).

Tabela 1. Comparação entre saúde global, internacional e pública (extraído de Koplan et al., 2009)

	Saúde global	Saúde internacional	Saúde pública
Abrangência geográfica	Foca-se em questões que direta ou indiretamente afetam a saúde, mas que transcendem fronteiras nacionais	Foca-se em questões de saúde em países estrangeiros, especialmente aqueles de baixa e média renda	Foca-se em questões que afetam a saúde da população de uma comunidade ou nação específicas
Nível de cooperação	O desenvolvimento e a implementação de soluções frequentemente requerem cooperação global	O desenvolvimento e a implementação de soluções frequentemente requerem cooperação binacional	O desenvolvimento e a implementação de soluções geralmente não requerem cooperação global
Indivíduos ou populações	Engloba tanto prevenção em populações quanto cuidados clínicos com indivíduos	Engloba tanto prevenção em populações quanto cuidados clínicos com indivíduos	Foca-se, sobretudo, em programas de prevenção para populações
Acesso à saúde	Equidade em saúde entre as nações e para todas as pessoas é o grande objetivo	Procura ajudar pessoas de outros países	Equidade em saúde dentro de uma comunidade ou nação é o grande objetivo
Leque de disciplinas	Altamente interdisciplinar e multidisciplinar dentro e fora das ciências da saúde	Engloba algumas disciplinas, mas não enfatiza multidisciplinaridade	Encoraja abordagens multidisciplinares, sobretudo dentro das ciências da saúde e com as ciências sociais

Talvez um dos maiores exemplos do crescente interesse em saúde global seja a atenção que o tema tem recebido no meio acadêmico. Uma análise do número de publicações sobre o tópico na base de dados *Web of Science*, por exemplo, evidencia um aumento de dez vezes na última década (saltando de 86 itens/ano em 2002 para

850 itens/ano em 2011) (Figura 1). Em países como os Estados Unidos, além de iniciativas governamentais bilionárias, como o plano do presidente Barack Obama para a saúde global (63 bilhões de dólares de investimentos ao longo de seis anos) (Gostin & Mok, 2010), universidades têm investido cada vez mais para atender a crescente demanda dos estudantes sobre o tema (Brown, 2008).

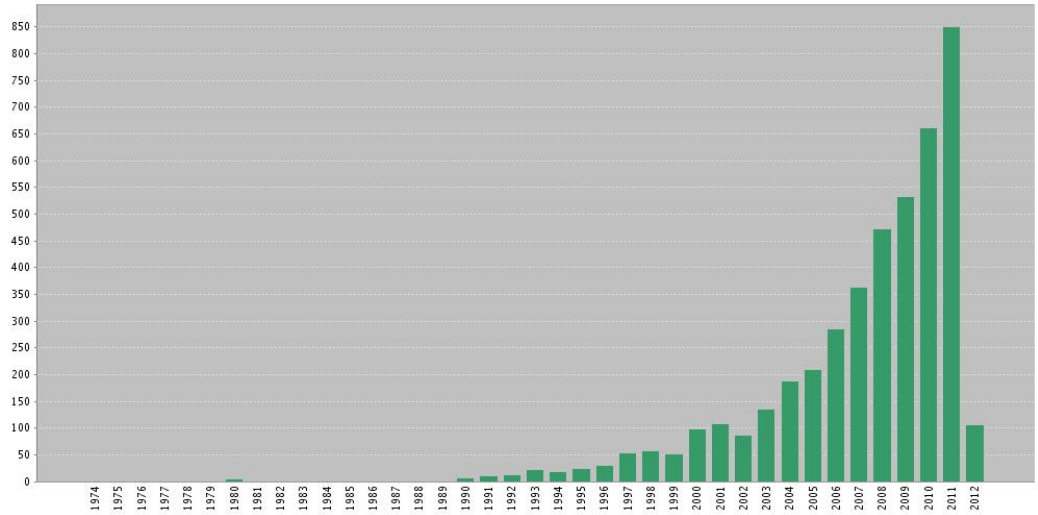

Figura 1. Número de itens por ano indexados na base Web of Science contendo a expressão "global health"

A demanda por treinamento em saúde global é hoje um fenômeno claro em países de alta renda (Johnson et al., 2012), também já apresentando iniciativas inovadoras em países de média e baixa renda (Kerry et al., 2011). Um levantamento recente do *Consortium of Universities for Global Health*, por exemplo, identificou que o número de programas sobre saúde global mais do que quadruplicou na América do Norte nos últimos anos, passando de oito para mais de 40 entre 2003 e 2009 (Merson & Page, 2008). No Reino Unido, diretrizes curriculares já foram lançadas para definir quais as competências básicas que estudantes de medicina devem possuir em relação à saúde

global (Johnson et al., 2012). No Brasil, o primeiro mestrado profissional em saúde global está sendo implementado pela Fundação Oswaldo Cruz no ano de 2012.

Saúde mental global, por sua vez, tem sido definida como a aplicação dos princípios do conceito de saúde global para o domínio da saúde mental (Patel & Prince, 2010). A negligência em relação aos problemas de saúde mental nos diferentes níveis de atenção à saúde nos mais diversos países (ricos e pobres) levou Arthur Kleinman a definir saúde mental global como uma "falha da humanidade" (Kleinman, 2009). Não faltam estatísticas para evidenciar o quanto as demandas e o impacto dos transtornos mentais contrastam com a reduzida oferta de cuidados e tratamentos baseados em evidência.

Estima-se que 30 milhões de pessoas tentarão e 1,5 milhão morrerão por suicídio anualmente até 2020 (Bertolote & Fleischman, 2002). Mesmo não figurando entre as principais causas diretas de mortalidade, as doenças mentais, neurológicas e por uso de substâncias (MNS) já representavam 12,3% da carga global de doenças no ano de 2000, proporção que deve aumentar para 16,4% em 2030 (Mathers & Loncar, 2006). As principais doenças MNS responsáveis pelo impacto na saúde das populações estão listadas na Tabela 2. Chama a atenção a enorme carga de doença entre os países de baixa e média renda. A importância do grupo de doenças MNS por país pode ser vista na Figura 2.

Tabela 2. Carga global de doença para transtornos mentais, neurológicas e por uso de substâncias (extraído de Collins et al., 2011)

	Mundo		Países de alta renda		Países de baixa e média renda	
	Causa	DALYs	Causa	DALYs	Causa	DALYs
1	Depressão unipolar	65,5	Depressão unipolar	10	Depressão unipolar	55,5
2	Transtornos por uso de álcool	23,7	Alzheimer e outras demências	4,4	Transtornos por uso de álcool	19,5
3	Esquizofrenia	16,8	Transtornos por uso de álcool	4,2	Esquizofrenia	15,2
4	Alzheimer e outras demências	14,4	Transtornos por uso de drogas	1,9	Transtorno afetivo bipolar	12,9
5	Transtorno afetivo bipolar	11,2	Esquizofrenia	1,6	Epilepsia	7,3
6	Transtornos por uso de drogas	8,4	Transtorno afetivo bipolar	1,5	Alzheimer e outras demências	6,8
7	Epilepsia	7,9	Enxaqueca	1,4	Transtornos por uso de drogas	6,5
8	Enxaqueca	7,8	Transtorno do pânico	0,8	Enxaqueca	6,3
9	Transtorno do pânico	7,0	Insônia (primária)	0,8	Transtorno pânico	6,2
10	T. obsessivo-compulsivo	5,1	Doença de Parkinson	0,7	T. obsessivo-compulsivo	4,5

† Critérios do Banco Mundial para renda (2009 produto interno bruto per capita, em US$) – baixa renda: 995 ou menos; média renda: de 996 a 12.195; alta renda: 12.196 ou mais.

‡ Um ano de vida ajustado para incapacidade (DALY, na sigla em inglês, apresentado em milhões) é uma medida da quantidade de saúde perdida devido a doença ou lesão, sendo calculada pelo valor presente dos anos futuros livres de incapacidade que são perdidos como resultado de morte prematura ou incapacidade.

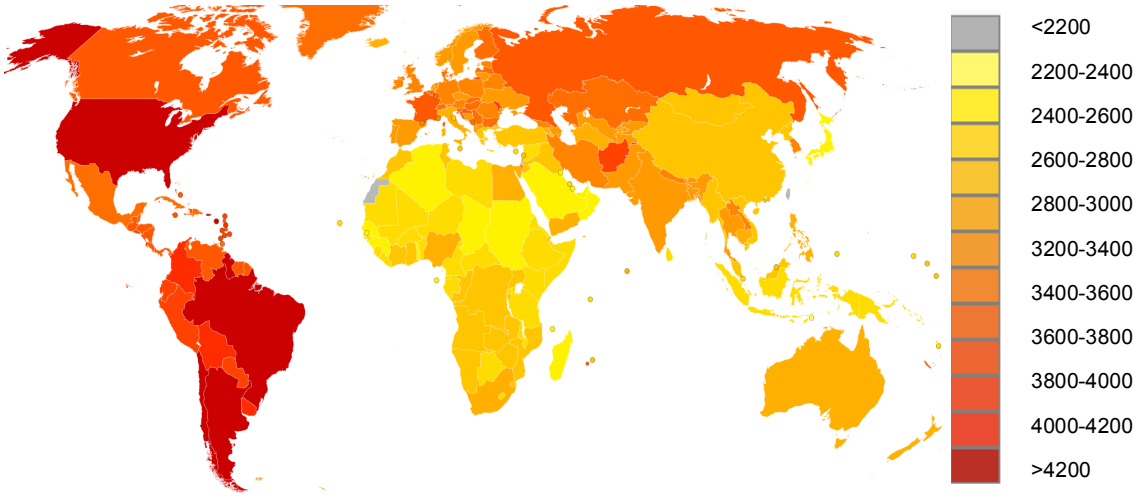

Figura 2. Anos de vida ajustados para incapacidade (DALYs) padronizados por idade para doenças neuropsiquiátricas por país (para cada 100.000 habitantes) (Mathers & Loncar, 2006).

É bastante provável que tais números reflitam uma subestimativa do real impacto de problemas de saúde mental. Transtornos mentais aumentam o risco para doenças comunicáveis e não-comunicáveis, além de contribuírem para lesões físicas intencionais e acidentais (O'Connor et al., 2000). De modo inverso, muitas doenças aumentam o risco para a ocorrência e a perpetuação de transtornos mentais, sendo que a presença de comorbidades também tem se mostrado um fator que dificulta a busca de ajuda, o diagnóstico e o tratamento de diferentes doenças (Ickovics et al., 2001). Não restam dúvidas, portanto, de que não há saúde sem saúde mental (Prince et al., 2007).

Apesar da disponibilidade de tratamentos eficazes e custo-efetivos, observa-se um enorme hiato entre necessidades e implementação no mundo inteiro. Por exemplo, a maioria dos países de baixa e média renda possui menos do que um psiquiatra para cada 100.000 pessoas; na maioria desses países o investimento em saúde mental representa menos do que 1% dos investimentos em saúde como um todo (Saxena et al., 2006).

Uma das estratégias para promover uma mudança neste cenário é o investimento em pesquisas sobre saúde mental nos diversos países. Informações baseadas em evidência possuem um papel crucial na definição das necessidades locais, na adaptação cultural de estratégias já consagradas, no desenvolvimento de ações de implementação, na identificação de potenciais barreiras e no monitoramento de resultados (Thornicroft et al., 2012). A alavancagem que as investigações em saúde mental podem proporcionar em ambientes de baixa e média renda faz da pesquisa uma das áreas de investimento prioritárias para a modificação de realidades locais.

Recentemente, um exercício de priorização patrocinado pelo Instituto Nacional de Saúde Mental dos Estados Unidos (NIMH) procurou identificar as prioridades de pesquisa na área de saúde mental para os próximos 10 anos. O chamado *Grand Challenges in Mental Health* reuniu 594 pesquisadores, clínicos e ativistas de mais de 60 países. A estratégia empregada para a definição de prioridades foi o método Delphi: uma técnica interativa baseada na experiência de especialistas, que respondem a questões em um ou mais ciclos. No exercício do NIMH, depois de duas rodadas em que os temas eram sugeridos e ranqueados conforme sua prioridade, em uma terceira votação os participantes do levantamento foram solicitados a pontuar os temas de acordo com quatro critérios: capacidade de reduzir a carga de doença; impacto em termos de equidade; rapidez do impacto; e viabilidade. Os 25 grandes desafios para a saúde mental global estão listados na Tabela 3, agrupados por grande objetivo temático (Collins et al., 2011).

Tabela 3. Grandes desafios em transtornos mentais, neurológicos e por uso de substâncias (MNS) (extraída de Collins et al., 2011)

Objetivos	Principais desafios	Questões de pesquisa
Objetivo A Identificar causas, fatores de risco e proteção	• Identificar fatores de risco sociais e biológicos modificáveis ao longo da vida • Compreender o impacto que causam pobreza, violência, guerra, migração e desastres • Identificar biomarcadores	• Qual a relação entre desenvolvimento fetal e infantil e a incidência de transtornos MNS? • Quais são os fenótipos e endofenótipos dos transtornos MNS nos diferentes contextos culturais? • Quais interações gene-ambiente estão associadas a um risco aumentado para transtornos mentais? • Quais os fatores que promovem a resiliência e previnem doenças mentais entre pessoas em extrema desvantagem social? • Que papel exerce o contexto social na persistência de transtornos MNS ao longo da vida?

Objetivo B Avançar a prevenção	• Apoiar ambientes comunitários que promovam o bem estar mental e físico ao longo da vida • Reduzir o tempo de doença não tratada através do desenvolvimento de intervenções precoces culturalmente adequadas nos diferentes contextos • Desenvolver intervenções para reduzir o impacto negativo de longo-prazo do baixo nível socioeconômico na infância sobre a capacidade cognitiva e a saúde mental • Desenvolver intervenções baseadas em evidência para a atenção primária nos diversos transtornos MNS • Desenvolver estratégias localmente apropriadas para eliminar abuso infantil e aumentar a proteção à infância	• Quais habilidades comportamentais podem aumentar as funções executivas, a resiliência e a flexibilidade cognitiva ao longo da vida? • Que agentes neuroprotetores e/ou paradigmas cognitivos podem ser utilizados durante o período de grande desenvolvimento cerebral para reduzir a vulnerabilidade a transtornos na adolescência? • Quão eficazes são as intervenções em ambiente domiciliar e escolar para prevenir abuso e negligência na infância?
Objetivo C Melhorar os tratamentos e expandir o acesso a cuidados	• **Integrar triagem e pacotes de serviços nos cuidados primários de rotina** • **Reduzir o custo e aumentar a oferta de medicamentos efetivos** • Desenvolver tratamentos efetivos que possam ser usados por não-especialistas, incluindo agentes de saúde com treinamento mínimo • Incorporar prejuízo funcional e incapacidade nas avaliações • **Oferecer cuidados e reabilitação efetivos e disponíveis em nível comunitário** • **Melhorar o acesso de crianças a cuidados baseados em evidência oferecidos por profissionais treinados** • Desenvolver tecnologias de TI e móveis (tais como telemedicina) para aumentar o acesso a cuidados baseados em evidência	• Quão efetivos são instrumentos breves de triagem para a detecção de transtornos MNS na rotina dos cuidados à saúde? • Quão efetivas são as intervenções para transtornos mentais graves realizadas por agentes de saúde? • Como o aumento do conhecimento acerca dos circuitos neurais pode levar a alternativas em relação às intervenções farmacológicas atuais? • Como a tecnologia de telefones celulares pode ser utilizada para monitorar frequência de crises epilépticas? • Como videogames e outras mídias eletrônicas podem ser utilizadas para remediação cognitiva nos diversos contextos culturais? • Que intervenções psicológicas podem produzir os melhores desfechos no tratamento comunitário de transtornos MNS nos diversos contextos culturais?
Objetivo D Aumentar a conscientização acerca do impacto global	• Desenvolver métodos culturalmente adequados para eliminar o estigma, a discriminação e a exclusão social de pacientes e famílias • Estabelecer evidências transnacionais acerca dos fatores culturais, socioeconômicos e de serviços relacionados às disparidades em incidência, diagnóstico, tratamento e prognóstico • Desenvolver definições válidas e confiáveis, modelos e instrumentos de medida para avaliações quantitativas nos níveis individual e populacional para o uso em diferentes culturas e contextos • Estabelecer sistemas de dados	• Quais são os componentes de intervenções efetivas para reduzir o estigma associado a transtornos MNS? • Quais as intervenções que reduzem o estigma e a discriminação, podendo ser direcionadas e implementadas em ambientes de saúde e de assistência social? • Qual é o impacto de fatores macroeconômicos (tais como taxas de desemprego, comércio internacional, produto interno bruto) na prevalência de transtornos MNS ao longo do tempo? • Qual o impacto de políticas para a oferta de tratamento de transtornos MNS?

	globais compartilhados e padronizados para a coleta de dados de vigilância sobre prevalência, padrões de tratamento e disponibilidade de recursos humanos e serviços	• Que fatores de mensuração contribuem para diferenças na prevalência de transtornos mentais entre grupos étnicos dentro e entre as nações?
Objetivo E Desenvolver capacidade em recursos humanos	• Aumentar a capacidade em países de baixa e média renda através da criação de centros regionais para pesquisa, educação e treinamento em saúde mental, incorporando concepções e necessidades locais • Desenvolver modelos sustentáveis para treinar e aumentar o número e a diversidade (étnica e cultural) de agentes de saúde capacitados a implementar intervenções baseadas em evidência • **Fortalecer o componente de saúde mental no treinamento de todos os profissionais de saúde**	• Qual é a maneira mais efetiva de treinar profissionais da atenção básica na implementação de cuidados baseados em evidência com adequada fidelidade às diretrizes originais? • Qual é a efetividade comparativa dos cuidados para transtornos MNS entre diferentes profissionais de saúde? • Quais as visões de comunidades de baixa renda em países de alta e baixa renda sobre as questões de pesquisa prioritárias para transtornos MNS?
Objetivo F Transformar as respostas de políticas públicas e dos sistemas de saúde	• Estabelecer e implementar critérios mínimos para os cuidados em relação a transtornos MNS ao redor do mundo • Reorganizar sistemas de saúde para integrar transtornos MNS com os cuidados a outras doenças crônicas, de modo a criar uma paridade entre pesquisa, treinamento, tratamento e prevenção de doenças mentais e físicas • Incorporar um componente de saúde mental nos programas internacionais de ajuda e desenvolvimento	• O que podemos aprender de diferentes abordagens (e custos associados) para a oferta de cuidados nos diferentes sistemas de saúde? • Quais são as estratégias mais efetivas para reduzir o consumo de álcool e de drogas ilícitas? • Qual é o impacto da legislação que assegura paridade entre doenças mentais e demais doenças no acesso aos serviços de saúde?
Princípios agregadores	• Utilizar uma perspectiva do ciclo vital para o estudo • Utilizar uma perspectiva sistêmica para abordar o sofrimento • Utilizar intervenções baseadas em evidências • Compreender influências ambientais	

A ordem de apresentação das prioridades não reflete sua importância relativa. Em negrito estão os cinco principais desafios em termos de redução de carga de doença, impacto na equidade, rapidez do impacto e viabilidade.

Uma outra iniciativa que tem demonstrado resultados encorajadores na promoção da saúde mental é o *Movement for Global Mental Health* (MGMH) (Lancet, 2008). Trata-se de uma coalisão de indivíduos e instituições comprometidos com ações coletivas para reduzir o hiato de tratamento para pessoas com transtornos mentais em todo o mundo. O MGMH promove suas ações baseando-se em dois princípios: evidência da efetividade de tratamentos e direitos humanos das pessoas com transtornos mentais. A iniciativa busca inspiração em experiências bem sucedidas,

como os movimentos para os cuidados de pessoas infectadas pelo HIV em países de baixa e média renda (Eaton & Patel, 2009; Patel et al., 2011b).

Em 2007, a publicação de um número especial da revista *The Lancet* marcou o lançamento das bases do MGMH. Entre os temas abordados pelos artigos deste número estavam as inter-relações da saúde mental com outras áreas da saúde, a carência de recursos para a saúde mental, a existência de intervenções de prevenção e tratamento para transtornos mentais em países de baixa e média renda e as barreiras para a implementação de serviços de saúde mental nesses países. No segundo semestre de 2009, iniciou-se um processo de elaboração de um novo número temático da revista, com o objetivo cobrir temas deixados de fora da iniciativa original, além de acompanhar os desdobramentos das propostas lançadas em 2007. De modo pioneiro, a seleção dos temas a serem abordados foi realizada a partir de uma consulta pública mundial pela internet (Patel et al., 2011a). Conforme apresentado em detalhes no anexo #1, um dos temas prioritários selecionados para a edição especial sobre saúde mental global foi a saúde mental de crianças e adolescentes ao redor do mundo.

Uma das razões para a escolha do tema diz respeito à carência que se observa atualmente em relação à produção científica sobre o assunto originada em países de baixa e média renda. Apesar de concentrarem nove de cada dez crianças e adolescentes, atualmente a produção desses países é reduzida em volume e limitada em termos de qualidade. Além de estudos que avaliem a ocorrência de problemas de saúde mental e estratégias de intervenção, pesquisas que investiguem fatores de risco e de proteção também são de fundamental importância – é possível que diferentes mecanismos etiológicos estejam operando em situações sociais e culturais distintas.

Nesse sentido, o empreendimento de pesquisas de ponta como aquelas que avaliam a interação entre genes e ambientes se justifica no contexto de países de baixa e média renda.

2.2. Genes e ambientes na origem dos transtornos mentais[1]

O estudo dos fatores de risco e de proteção para transtornos mentais é um elemento-chave para uma compreensão mais aprofundada dos determinantes que levam à saúde e à doença mental nos diversos contextos. Mais recentemente, tais objetivos tornaram-se desafios práticos na medida em que um crescente corpo de evidências sugere que a permanência em uma rota mal adaptativa aumenta o risco de psicopatologia e reduz as chances de retomada do desenvolvimento típico (Kieling et al., 2008). Desse modo, mais do que um mero exercício teórico, a identificação de fatores associados ao problemas de saúde mental permite delinear estratégias de proteção e promoção da saúde de jovens em todo o mundo.

Entre as perguntas prioritárias listadas pelo *Grand Challenges in Mental Health* para a pesquisa na próxima década está a pergunta "Quais interações gene-ambiente estão associadas a um risco aumentado para transtornos mentais?" (Collins et al., 2011). A dicotomia entre natureza e criação (*nature versus nurture*) para explicar a origem dos transtornos mentais tem sido progressivamente abandonada em favor de uma visão na qual estes são consequência de múltiplos fatores, de diferentes naturezas agindo de forma inter-relacionada em diferentes níveis (Polanczyk, 2009; Ridley, 2003; Rutter, 2002). Em paralelo às mudanças conceituais, houve também uma grande evolução

[1] Esta seção contém trechos do capítulo Polanczyk GV, Kieling C. Interação Gene-Ambiente: Mecanismos Causais e Fatores Protetores. In: Miguel EC, Gentil V, Gattaz WF. (Orgs.). Clínica Psiquiátrica. Barueri: Manole, 2011, p. 126-135.

em pesquisas empíricas, em parte impulsionada por avanços tecnológicos, como no campo da genética molecular (permitindo que o risco genético deixasse de ser uma variável anônima e passasse a ser estudado através da identificação de variantes alélicas específicas), em parte pelo acompanhamento de indivíduos por longos períodos de tempo em estudos de coorte de base populacional. Desde cedo, entretanto, ficou claro que não há fatores de risco genéticos e ambientais isolados suficientes ou necessários para o desenvolvimento da maioria dos transtornos mentais, e que os fatores de risco atuam através de mecanismos conjuntos para a proteção ou para a ocorrência de transtornos mentais.

Genes e ambientes se inter-relacionam através de mecanismos diversos para aumentar a suscetibilidade a transtornos ou para promover a resiliência. Entre os mecanismos de inter-relação entre fatores genéticos e ambientais, destacam-se mecanismos epigenéticos e interação gene-ambiente (GxE). Fenômenos de GxE referem-se à variação do efeito de uma exposição ambiental em função do genótipo do indivíduo. Alternativamente, podem ser definidos como situações em que os genes moderam a sensibilidade do organismo a eventos ambientais específicos, aumentando o risco de transtornos ou promovendo a resiliência. Quando há GxE, um transtorno mental ocorre se características ambientais específicas e um genótipo determinado são combinados, ou seja, quando a predisposição genética é associada a fatores desencadeantes ambientais (Caspi & Moffitt, 2006; Hunter, 2005; Moffitt, 2005; Moffitt, Caspi & Rutter, 2005; Rutter, 2002; Rutter, 2006).

Historicamente, o termo interação foi utilizado sob duas perspectivas: uma perspectiva biométrica (ou estatística) e uma perspectiva desenvolvimental. A tensão entre ambas perspectivas foi responsável por controvérsias significativas na área, que

dificultaram o seu avanço. O conceito biométrico de interação foi introduzido por Ronald Fischer, um dos fundadores da genética de populações e criador da análise de variância, e encarava GxE como um fenômeno puramente estatístico e indesejado. O conceito desenvolvimental ou biológico de interação foi introduzido por Lancelot Hogben, um embriologista experimental, com o objetivo de explicar o papel que as relações entre genes e ambiente desempenham ao longo do desenvolvimento na geração de variabilidade (Tabery, 2007).

Os pesquisadores Terrie Moffitt e Avshalom Caspi, pioneiros no estudo de GxE no processo de desenvolvimento de transtornos mentais com fatores de risco genético identificados, propuseram um modelo metodológico para a realização desses estudos (Moffitt, Caspi & Rutter, 2005). A estratégia baseia-se na necessidade de inicialmente ser definida a tríade gene, agente ambiental e fenótipo comportamental, baseando-se em hipóteses conceituais biologicamente plausíveis. A proposta foi operacionalizada em sete passos estratégicos:

A. Consulta a modelos quantitativos de genética comportamental. Os modelos genéticos quantitativos fornecem indicativos quanto à existência ou não de GxE. O coeficiente de herdabilidade indica não apenas a contribuição de genes, mas também o efeito destes e do ambiente. Outras fontes indicativas são estudos de gêmeos e adoções que indicam que a probabilidade do transtorno é maior entre aqueles indivíduos em risco genético quando expostos a ambientes familiares adversos. Ainda que o gene permaneça anônimo, o estressor ambiental torna-se um candidato para estudos futuros em busca da identificação do gene (Moffitt, Caspi & Rutter, 2005).

B. Identificação do agente ambiental candidato. Evidências de variabilidade marcada em relação ao desfecho em estudos entre indivíduos expostos ao mesmo

nível de estresse ambiental indicam que variáveis genéticas podem estar interagindo com uma situação de estresse específica. Além disso, o agente ambiental deve apresentar alguma evidência de interação com as vias neurobiológicas relacionadas ao transtorno (Moffitt, Caspi & Rutter, 2005; Rutter, 2002). Uma vez selecionada a variável de estresse ambiental, deve ser testada a sua relação com o desfecho, que deve apresentar relação causal. Para que exista uma verdadeira GxE, a variável ambiental não deve estar correlacionada com o risco genético. Há possíveis delineamentos de estudos que corrigem para a mediação genética, todos com limitações: estudos que alocam os indivíduos de forma aleatória para diferentes grupos; estudos longitudinais que demonstram alteração comportamental a partir de um nível basal após uma experiência ambiental; estudos de gêmeos e adoções, que controlam para a contribuição genética à variação fenotípica enquanto testam se uma variável ambiental apresenta uma contribuição adicional (Moffitt, Caspi & Rutter, 2005).

C. Otimização da medida de risco ambiental. Devem ser privilegiadas situações de risco proximais em relação a distais. Os fatores de risco proximais são mais específicos, associando-se a hipóteses biologicamente plausíveis, enquanto os distais frequentemente operam através dos riscos proximais (Moffitt, Caspi & Rutter, 2005; Rutter, 2002; Rutter, Moffitt & Caspi 2006). Ainda, é importante que seja observada a especificidade dos fatores de risco em relação à fase do desenvolvimento do indivíduo. O efeito de alguns fatores de risco ambientais parece estar limitado a períodos sensíveis de vulnerabilidade geneticamente determinados (Rutter, Moffitt & Caspi, 2006). As medidas devem ser realizadas idealmente de forma prospectiva, uma vez que o relato retrospectivo é suscetível a diversos problemas, como esquecimento e viés de lembrança. Além disso, a memória sobre eventos passados pode ser

influenciada por genes que, por sua vez, influenciam o comportamento e a personalidade, havendo uma correlação entre ambas as variáveis (Moffitt, Caspi & Rutter, 2005). Medidas de variáveis ambientais devem ser capazes de definir o tempo de exposição, o número de eventos, a diversidade de estressores e a possível rede de situações encadeadas. Assim, medidas transversais dicotomizadas parecem reduzir a complexidade da exposição. O estudo focado em apenas um evento isolado, desconsiderando o contexto em que este ocorre, tanto do ponto de vista do processo desenvolvimental do indivíduo como do ponto de vista da cascata de eventos em que o estressor está inserido, limita a capacidade de detectar GxE (Moffitt, Caspi & Rutter, 2005; Shanahan & Hofer, 2005).

D. Identificação do gene de suscetibilidade candidato. Genes candidatos com maior potencial são aqueles com variantes polimórficas relativamente comuns na população. Caso existam evidências da associação entre um determinado gene e o transtorno psiquiátrico em estudo, este se constitui em um candidato natural. Entretanto, a ausência de associação entre um gene e o desfecho não necessariamente exclui a possibilidade de que aquele apresente uma interação significativa com o ambiente. A base mais sólida para a seleção de um gene para o estudo da sua interação com fatores ambientais é a evidência de que este se encontra associado à reatividade do organismo ao agente ambiental, o que não implica, necessariamente, que esteja associado isoladamente ao desfecho (Moffitt, Caspi & Rutter, 2005).

E. Teste da interação. O desenho de estudo longitudinal é o mais informativo para que a GxE seja adequadamente testada. Este desenho permite que seja estudada uma amostra representativa da população quanto à distribuição do genótipo, da exposição ao estresse ambiental e de transtornos de interesse, assim como de desfechos de

saúde. Através de estudos de coorte é possível que seja estimada de forma acurada a sensibilidade, especificidade e valores preditivos negativo e positivo para o desfecho de interesse, assim como o risco atribuível. Apesar das vantagens claras de estudos longitudinais, estes são onerosos e demandam um longo tempo de observação (Moffitt, Caspi & Rutter, 2005).

F. Avaliação da extensão da GxE além da tríade inicialmente conceitualizada. Esta estratégia exploratória é utilizada caso seja detectado um efeito da GxE. Uma variável na tríade é sistematicamente substituída por outra variável do mesmo nível, com frequência similar, enquanto as outras duas são mantidas constantes. Assim, pode-se avaliar a especificidade da interação e o quanto esta se estende além dos fatores inicialmente conceitualizados (Moffitt, Caspi & Rutter, 2005).

G. Replicação e meta-análise. Estudos de genética psiquiátrica são caracterizados pela frequente não-replicação de achados, o que também ocorre com estudos GxE. Entre outras razões, a diversidade metodológica entre os estudos parece estar bastante implicada neste fenômeno, como poder insuficiente associado a tamanhos amostrais inadequados, correlações gene-ambiente, variabilidade restrita nas medidas dependentes e independentes e no processo de amostragem, níveis de medida inapropriados, modelagem linear imprópria de relações não-lineares (Shanahan & Hoffer, 2005). A replicação de achados em amostras independentes é fundamental para a consolidação dos achados. Estudos realizados em contextos distintos, como países de alta, média e baixa rendas podem ser complementares no processo de confirmação ou não de determinado achado de GxE. Sempre que for possível sumarizar os dados, estudos de meta-análise apresentam maior poder para corroborar ou não achados iniciais (Moffitt, Caspi & Rutter, 2005). Entretanto, é importante

considerar que o valor de uma meta-análise reside na qualidade dos estudos originais que agrega e na possibilidade de comparação entre as amostras quanto à distribuição do genótipo e dos fatores ambientais em estudo.

Uma das recentes discussões na literatura relacionada a GxE refere-se à forma mais adequada para a realização de revisões de literatura e meta-análises. Abordagens mais restritivas, que englobam apenas estudos com desenhos e medidas semelhantes, podem gerar resultados diferentes de abordagens mais inclusivas, que partem da hipótese de interesse, porém abarcando resultados de estudos de diferentes delineamentos. Por exemplo, do ponto de vista estatístico, o maior poder para a identificação de uma interação entre duas variáveis categóricas ocorre quando as frequências alélicas e de exposição ambiental estão em torno de 50%. A obtenção de tais proporções, entretanto, é pouco provável em estudos populacionais (em que a ocorrência é determinada pela natureza), de modo que estudos de casos e controles, apesar de possuírem outras limitações, também podem ser de grande relevância para a compreensão do fenômeno GxE.

De especial interesse também são aqueles estudos que se focam em fenótipos intermediários (também chamados de endofenótipos), com os quais presumivelmente se pode encontrar associações mais robustas na rota causal entre fatores de risco e desfecho (Kendler & Neale, 2010). Endofenótipos podem ser estudados através de medidas neuropsicológicas, neuroanatômicas, neurofisiológicas ou neuroquímicas, proporcionando, por definição, o estudo de um desfecho menos complexo do ponto de vista genético se comparado ao fenótipo como um todo, estando mais próximo ao produto gênico propriamente dito e fazendo parte de uma das vias fisiopatológicas para o desenvolvimento do transtorno.

Indo além do cálculo estatístico de uma meta-análise, a observação de GxE em estudos com diferentes populações e delineamentos (apenas casos, casos e controles, desenhos transversais ou longitudinais, experimentos com exposição controlada, modelos animais) também pode ser considerada um indicador robusto de GxE, na medida em que o achado sobreviveu aos ruídos de diferentes tipos de estudo (Caspi et al., 2010). Além disso, uma abordagem mais abrangente também poderá identificar padrões de semelhança entre estudos que não replicaram achados iniciais. No caso de associações entre o delineamento dos estudos e os achados encontrados, mais do que um questionamento aos achados positivos, deve-se buscar compreender as razões pelas quais a heterogeneidade ocorre.

Nesse sentido, uma nova forma de avaliar a pesquisa em GxE tem sido proposta (Caspi et al., 2010). Sem desconsiderar a importância de estratégias puramente ateóricas e estatísticas para a redução de falso-positivos, uma abordagem de validação de construto também parece ser fundamental para o entendimento dos fenômenos subjacentes a GxE. Do ponto de vista estatístico, o que se busca é a replicação dos achados iniciais: elementos como amostragem, medidas fenotípicas e ambientais, polimorfismos, modelo genético e direção do efeito devem ser iguais, e amostras maiores recebem um peso maior, dado que, mantidas todas as condições, o poder do estudo passa a ser a questão fundamental. Uma visão mais abrangente defende a ideia de que, quando se avalia GxE em relação a genes candidatos (caso em que a probabilidade *a priori* é maior do que zero), uma visão estatística tradicional não é suficiente. Uma abordagem mais inclusiva é informativa sobretudo em relação a medidas de exposição ambiental, para as quais pode ser bastante difícil obter padronização, principalmente em termos qualitativos (por exemplo, existem muitas formas de estresse ambiental). Dessa forma, uma abordagem que avalia a validade do

construto – e não apenas a replicação estatística – valoriza a heterogeneidade de delineamentos, buscando entender (através de análises de meta-regressão, por exemplo) as fontes de dissonância.

O campo dos estudos de GxE em saúde mental tem observado um crescimento importante na última década. Entre os principais problemas de saúde mental estudados até momento estão a depressão e o transtorno de personalidade antissocial – este apresentado aqui mais detalhadamente a título de exemplo. Maus tratos na infância constituem um fator de risco conhecido e bem estudado para comportamento antissocial na vida adulta (McCrory, de Brito & Viding, 2010). No entanto, uma proporção significativa de indivíduos que sofreram maus tratos na infância não apresenta comportamento antissocial ao longo do seu desenvolvimento, levantando a hipótese de que influências genéticas apresentariam um efeito moderador sobre este estressor. Além disso, o efeito de estressores ambientais parece ser mais marcado naquelas crianças e adolescentes em risco genético, conforme sugerido por estudos com gêmeos. A partir destas evidências, foi avaliada a interação entre um polimorfismo candidato e variáveis ambientais de risco. Em um estudo inovador, Caspi et al. (2002) avaliaram o efeito da interação entre um polimorfismo funcional na região promotora do gene para a enzima monoamino oxidase A (*MAOA*) e situações de maus-tratos na infância sobre o desenvolvimento de comportamentos antissociais. Os autores selecionaram o gene *MAOA* em função de evidências que apontam para a sua relação com agressividade, tanto em modelos animais como em humanos. Esta enzima metaboliza neurotransmissores como a noradrenalina, serotonina e dopamina, sendo que sua atividade reduzida disporia o organismo a uma hiper-reatividade neural a ameaças. Tendo em vista esta base conceitual sólida, os autores estudaram uma amostra prospectiva de nascimento de 1.037 crianças

avaliadas a cada 2 anos entre 3 e 15 anos e após, aos 18, 21 e 26 anos de idade. A presença de maus-tratos na primeira década de vida foi definida como rejeição materna, perda repetida de um cuidador, disciplina agressiva, abuso físico e sexual. Em relação a comportamento antissocial na adolescência e início da vida adulta, foram utilizados quatro indicadores: (1) diagnóstico de transtorno de conduta a partir dos 11 anos de idade; (2) registros policiais de condenações judiciárias por crimes graves; (3) questionário de inclinação a comportamentos violentos; (4) sintomas de comportamento antissocial aos 26 anos de idade relatados por um informante próximo ao indivíduo. A atividade da MAOA não apresentou um efeito principal sobre este índice; já maus-tratos na infância apresentaram um efeito significativo sobre o desfecho combinado, assim como a interação entre maus-tratos na infância e *MAOA*, principalmente quando a enzima apresentava baixa atividade.

Após este estudo pioneiro, outros estudos foram realizados buscando a replicação dos achados iniciais (Foley et al., 2004; Haberstick et al., 2005; Huizinga et al., 2006; Kim-Cohen et al., 2006; Widom & Brzustowicz, 2006; Young et al., 2006). Estes foram agregados em uma meta-análise publicada em 2007 (Taylor & Kim-Cohen, 2007), que mostrou que, ao combinar os estudos até então disponíveis, o polimorfismo estudado na região promotora do gene *MAOA* influencia a vulnerabilidade a situações de maus-tratos na infância para o desenvolvimento de transtorno de conduta ou comportamentos violentos na adolescência ou vida adulta. Desde a publicação desta meta-análise, ao menos cinco outros estudos já foram publicados (Weder et al., 2009; Enoch et al., 2010; Edwards et al., 2010; Prichard et al., 2008; Derringer et al., 2010). Três deles encontraram alguma evidência de GxE para sintomas de conduta e agressividade, um deles demonstrou GxE para sintomas

de hiperatividade (e não para sintomas de conduta) e outro não encontrou qualquer evidência de GxE.

Uma análise abrangente dos achados da literatura até o momento ainda está por ser realizada, sobretudo para compreender as possíveis razões para a ausência de associação observada em diversos estudos. Entre os fatores que merecem especial atenção estão a heterogeneidade na definição e na intensidade de maus tratos nos diferentes estudos, além do reconhecimento da variabilidade em aspectos desenvolvimentais (não apenas a diferença de idade entre as populações estudadas, em que, por exemplo, a sintomatologia antissocial mais grave apareceria apenas em momentos mais tardios, mas também a compreensão do encadeamento entre sintomas de hiperatividade na infância e manifestações de conduta na adolescência).

O transtorno de déficit de atenção/hiperatividade (TDAH) acomete cerca de 5% das crianças e adolescentes em todo o mundo (Polanczyk et al., 2007). Este transtorno apresenta um coeficiente de herdabilidade de aproximadamente 80%, tendo sido avaliados um grande número de genes candidatos, principalmente relacionados ao sistema catecolaminérgico, sendo evidenciada uma magnitude de risco limitada para o efeito de genes isolados (Gizer, Ficks & Waldman, 2009). Falhas em replicar associações positivas são praticamente a regra, mesmo em relação aos polimorfismos de genes candidatos mais consistentes, como o alelo de 10 repetições de um polimorfismo de número variável de repetições em tandem (VNTR) de 40 pares de base (pb) na região 3' não-traduzida do gene para o transportador de dopamina (*DAT1*). Entre as hipóteses que explicariam a frequente não replicação dos achados estaria a negligência dos estudos em avaliar estressores ambientais, focando apenas nos genes, metodologia que vai de encontro ao entendimento atual acerca da etiologia

dos transtornos mentais. Eventos estressores durante a gestação e no período perinatal, como exposição intrauterina ao tabaco, a álcool e a drogas e complicações ao nascimento (como baixo peso, trabalho de parto prolongado, ruptura precoce de membranas) estão associados ao desenvolvimento do TDAH (Thapar et al., 2012). Assim, é provável que fatores de risco na gestação e no período perinatal apresentem interação com genes como o *DAT1* (Kieling et al., 2008).

A literatura sobre GxE em relação ao TDAH é mais recente, com um número mais reduzido de relatos replicando a mesma seleção de variáveis e modelos (para uma revisão, ver Nigg et al., 2010). O primeiro estudo a avaliar a interação entre polimorfismos de *DAT1* e tabagismo durante a gravidez na etiologia do TDAH foi publicado por Kahn et al. (2003). Eles avaliaram 161 crianças com 5 anos de idade; informações sobre o tabagismo pré-natal foram retrospectivamente coletados quando a criança tinha 6 meses de idade. Os resultados sugeriram que crianças homozigotas para o alelo de 10 repetições e com exposição ao fumo pré-natal tinham níveis mais elevados de hiperatividade e impulsividade, mas não de desatenção. Um estudo posterior não conseguiu identificar uma interação entre o gene *DAT1* (investigando VNTRs no 3'UTR e também no íntron 8) e ambiente (definido como fumar pelo menos 20 cigarros por dia) em duas amostras clínicas (n=396 crianças com idade entre 5 e 15) do Reino Unido e Taiwan (Brookes et al., 2006). Um estudo conduzido por Neumann et al. (2007) avaliou 140 casos e 692 controles, apontando para a existência de GxE entre *DAT1* e tabagismo pré-natal, mas desta vez o genótipo de risco foi a presença de um alelo 9 repetições (com uma razão de chances de 2,9 para ter um diagnóstico do subtipo combinado conforme o DSM-IV-TR). Langley et al. (2008) avaliaram GxE para vários marcadores genéticos e fatores de risco em uma

amostra clínica de 266 crianças, sem evidências de interação entre *DAT1* e tabagismo pré-natal.

A busca por GxE específicas apresenta desafios importantes. Para a sua detecção, é fundamental a formulação de hipóteses *a priori* baseadas em fenômenos biologicamente plausíveis. Assim, a escolha da tríade gene, fator ambiental e fenótipo comportamental é um passo central nestas pesquisas e deve ser amparada por evidências robustas, usualmente provenientes de diferentes tipos de estudo, como estudos com modelos animais e de neuroimagem (Caspi & Moffit, 2006). Além disso, as estratégias metodológicas adotadas influenciam de forma decisiva a detecção ou não do efeito de interação. A detecção do efeito de interação também depende da frequência combinada da exposição ambiental e das variantes alélicas envolvidas, sendo portanto necessários tamanhos amostrais maiores do que aqueles usualmente suficientes para detectar efeitos principais.

Os estudos de GxE também apresentam perspectivas promissoras, em grande parte relacionadas a avanços metodológicos e tecnológicos. Entre os avanços metodológicos, destaca-se o estudo de grandes amostras longitudinais, com identificação de fatores de risco de diferentes naturezas (Swanson & Wadhwa, 2008). Na medida em que tais estudos não estiverem mais restritos a um número reduzido de amostras (localizadas sobretudo em países de alta renda), uma maior compreensão de fenômenos universais subjacentes aos transtornos mentais será possível.

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4. Objetivos

4.1. Objetivo geral

Este trabalho tem como objetivo apresentar a situação atual da saúde mental de crianças e adolescentes adotando uma perspectiva global para identificar carências e propor ações.

4.2. Objetivos específicos

A. Revisar a literatura disponível sobre a saúde mental de crianças e adolescentes no que diz respeito a epidemiologia, intervenções preventivas e terapêuticas, bem como aspectos econômicos e políticos associados, com foco em países de baixa e média renda.
B. Mapear a produção científica mundial em saúde mental na infância e na adolescência.
C. Demonstrar a viabilidade da condução de estudos de ponta para o entendimento de determinantes de problemas externalizantes de saúde mental em adolescentes em país em desenvolvimento tendo como base estudos uma coorte de nascimentos e ferramentas de interação gene-ambiente.

5. Artigo #1

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Global child and adolescence mental health: evidence for action

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Summary

Mental health problems affect 10–20% of children and adolescents worldwide. Despite their relevance as a leading cause of health-related disability in this age group and their longlasting effects throughout life, the mental health needs of children and adolescents are neglected, especially in low-income and middle-income countries. In this report we review the evidence and the gaps in the published work in terms of prevalence, risk and protective factors, and interventions to prevent and treat childhood and adolescent mental health problems. We also discuss barriers to, and approaches for, the implementation of such strategies in low-resource settings. Action is imperative to reduce the burden of mental health problems in future generations and to allow for the full development of vulnerable children and adolescents worldwide.

Key messages

- Mental health problems affect 10–20% of children and adolescents worldwide and account for a large portion of the global burden of disease
- Although only 10% of trials come from low-income and middle-income countries (LMIC; where 90% of children and adolescents live), sufficient evidence exists to justify the set-up of services
- The development of services is hampered by lack of government policy, inadequate funding, and a dearth of trained clinicians
- Support of child and adolescent mental health research is needed, particularly in LMIC, including prevalence and longitudinal studies, high-quality clinical trials, and cost-effectiveness analyses
- Early intervention and prevention offer the hope to avoid later adult mental health problems and improve personal wellbeing and productivity

Introduction

Children and adolescents constitute almost a third (2·2 billion individuals) of the world's population and almost 90% live in low-income and middle-income countries (LMIC), where they form up to 50% of the population.[1] For young people, neuropsychiatric disorders are a leading cause of health-related burden, accounting for 15–30% of the disability-adjusted life-years (DALYs) lost during the first three decades of life.[2] Despite the widespread recognition of the importance of mental health promotion and prevention in children and adolescents, there is an enormous gap between needs and resource availability.[3]

The failure to address mental health problems, including developmental and intellectual disorders, in children and adolescents in low-resource settings is a public health issue with wide-reaching consequences because such failure also impedes the achievement of basic development goals in LMIC.[4] Moreover, because evidence shows that a substantial proportion of mental health problems in adults originate early in life, [5] and [6] the situation has longlasting effects beyond childhood and adolescence. Since mental illnesses are conceptualised as chronic disorders of young people[7] and because a disproportionate number of young people live in LMIC, to address mental health problems in early developmental stages in these countries is a priority for the global health agenda. Besides the arguments of how societal costs can be reduced by early intervention, there is also an ethical responsibility to the most vulnerable young people, who can have their full developmental potential thwarted. Action is urgently needed for children in conflicts, disasters, forced labour, and who live on the streets, or who are affected by trafficking—all of which are frequent in LMIC.

In this report we provide an overview of the evidence and the research gaps in

epidemiology, intervention, and implementation strategies for child and adolescent mental health in low-resource settings. We systematically reviewed the published work from LMIC, and present data from disadvantaged populations in high-income countries (HIC) where needed and appropriate. We assess the occurrence of mental health problems in LMIC and their associated protective factors and risk factors. We then present the evidence for preventive interventions and the scarce number of studies for the treatment of childhood mental health problems in LMIC. Finally, we discuss the challenges of service implementation, and the economic and political aspects of promotion of child and adolescent mental health worldwide.

Epidemiology

The assessment of the mental health needs of children and adolescents is complex, encompassing epidemiological data gathering, comparisons of data from different areas, and input from people and agencies engaged in the care of this population.[8] Knowledge of the prevalence of mental health problems is often a first step to determine the magnitude of the problem, but the identification of positive and negative factors affecting mental health can also inform early interventions that can reduce the burden of these disorders.

Despite little research, epidemiological studies of the prevalence of childhood and adolescence mental health problems in LMIC show that such problems are common. Our systematic review of original studies in non-referred samples from LMIC showed prevalence of about 10–20% in most of the 16 surveys identified, which is consistent with findings from HIC.

The range of the reported prevalence, however, is very wide (from 1·81% to 39·4%), and heterogeneity in the methodological approaches used might have contributed to

these differences (webappendix pp 1–2).[9] Other possible sources of discrepancy between results are different exposures to risk factors and protective factors, and the cultural context in which the mental health problems occur. Culture defines and creates specific sources of distress and impairment and affects how symptoms are interpreted; efforts to compare the presentation of symptoms across different cultures are hampered by the difficulty of disentangling the effect of culture from that of different methodological approaches.[10]

The co-occurrence of risk factors and protective factors restricts the identification of the specific elements responsible for the onset and continuity of mental health problems. Early distal factors (ie, non-specific factors that affect the likelihood of subsequent risks) work together with proximal causes (which directly impinge on the individual) through a probabilistic chain that is conditioned by issues such as dosage, context, and timing. The lifecycle approach (figure 1) provides a model that maps relevant risk factors in a chronological order, from the preconceptional period of one generation to the next generation.

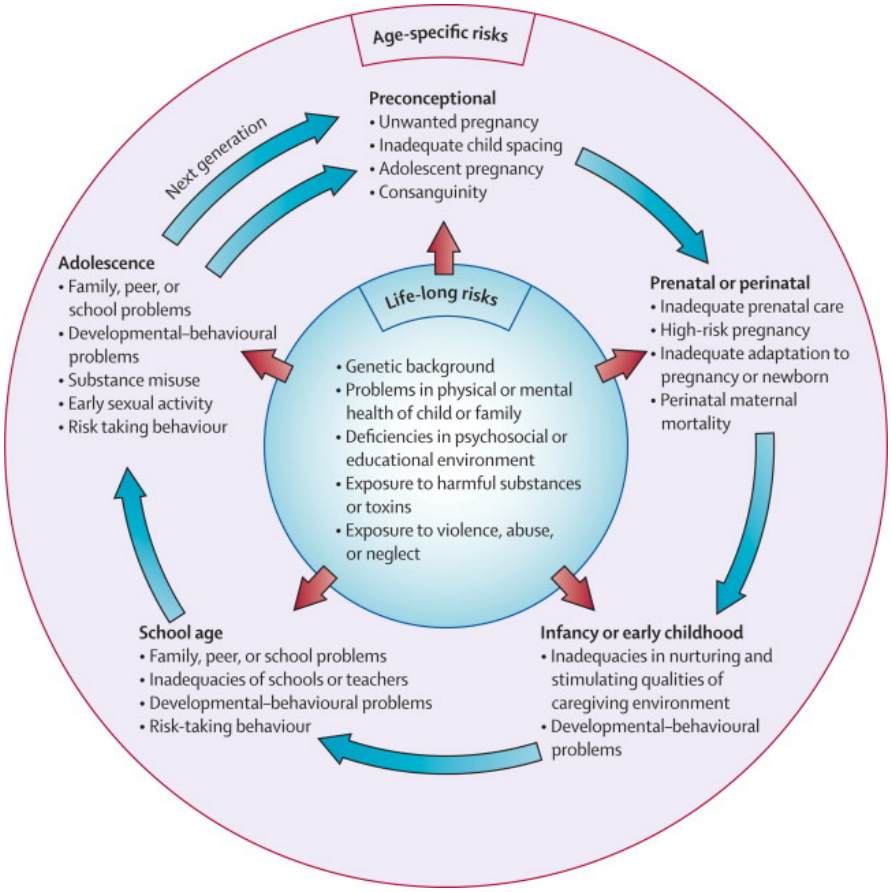

Figure 1. The lifecycle approach to risk factors for mental disordersAdapted with permission from reference 11.

Life-long risk factors are shown at the centre of figure 1 and consist of the genetic background, problems in the physical health and nutritional status of the child,[12] the physical and mental health of carers,[13] loss of carers or being orphaned,[14] being raised in institutions,[15] deficiencies in the psychosocial and educational environment,[16] exposure to harmful substances and toxins,[17] violence,[18] armed conflict and war, [19], [20] and [21] forced displacement,[22] immigrant status,[23] natural disasters, [24] and [25] gender disparity,[26] severe physical punishment,[27] and abuse or neglect.[13]

Age-specific risks can be identified as early as the preconceptional period, which spans the transition from adolescence to adulthood of prospective parents. Research-based evidence from LMIC links adolescent parenting,[28] unintended pregnancy,[29]

inadequate birth interval,[30] and parental consanguinity[31] as preconceptional risk factors for child mental health problems. Evidence exists that reduced maternal haemoglobin during the prenatal and perinatal period is related to poor education outcome of offspring, which is measurable even when the child reaches age 30 years.[32] Research is increasing into the effect of maternal prenatal and perinatal physical and mental distress on child survival and health outcomes, with particular attention to depression. [33] and [34] Research into the effects of other important and well known perinatal risk factors such as low birthweight is sparse.[35]

Risk factors in infancy and early childhood have not been widely studied. The early years of life are the period of maximum brain growth and of formation of emotional regulatory patterns that affect later mental health outcomes.[36] More than 200 million children younger than 5 years in LMIC do not reach their developmental potential because of stunting, inadequate stimulation, poor care and home stimulation, iodine and iron deficiency, exposure to violence, HIV/AIDS, malaria, intrauterine growth retardation, or heavy metal exposure. [37] and [38] Maternal mental health,[39] family history of mental health problems, and lack of appropriate child care[40] are additional risk factors.

Important evidence exists that mental health risk factors specific to the school age period (from ages 5 to 18 years, with variable definitions across countries) are prevalent in LMIC. A representative study of 3005 adolescents in Mexico City showed that 68% had had at least one type of chronic adversity.[13] Risk factors such as perceived obesity,[41] academic difficulties,[16] bullying in school,[42] family dysfunction,[43] child labour,[44] physical and sexual abuse, [13] and [45] use of tobacco, alcohol, and drugs,[46] pathological use of the internet,[47] teenage pregnancy,[48] and use as a soldier during childhood[49] have been shown to jeopardise the mental health of children,

adolescents, and adults.

Many children who experience adverse conditions in their early years, however, grow up to become healthy adults. The idea of resilience differs from the general notion of risk and protective factors because it aims to incorporate innate qualities and differences in an individual that enable them to overcome adversity.[50] Some of these qualities—for example, behavioural and emotional self-regulation—have proved to contribute to the mental health and academic achievement of children.[51]

Characteristics of a child's carer system, including emotionally responsive and competent parenting as well as carer resources such as education, mental health, and relational history (ie, attachment and peer network), are direct proximal predictors of resilience in children.[52]

Interventions

The incorporation of preventive strategies to reduce the effect of mental health problems needs the adoption of a framework that goes beyond the traditional disease model.[53] Whereas universal interventions are directed at all children in a particular locality or setting, selective and indicated interventions focus on children who are at high risk for development of a mental health problem because of the presence of either proximal risk factors or subclinical symptoms. One of the major challenges of selective and indicated interventions is the characterisation of children and adolescents at whom the interventions should be targeted, which should take into account not only the limited availability of resources, but also the hazards of false-positive identification of at-risk individuals. Panel 1 shows examples of strategies to prevent mental health problems in children and adolescents in LMIC (see webappendix pp 3–17 for full details) and panel 2 provides recommendations of how

to design and adapt these interventions.

Panel 1. Examples of interventions to prevent child and adolescent mental health problems in low-income and middle-income countries

Non-specific interventions: universal and targeted interventions in early childhood

• Benefits to child mental health have been shown from early childhood interventions including: early stimulation interventions; [54], [55] and [56] interventions to improve carer sensitivity and responsiveness; [57], [58] and [59] integrated nutrition, health, and stimulation programmes;[60] attendance at a high-quality preschool;[61] and conditional cash transfers to families.[62] These early interventions benefit children exposed to various contextual and biomedical risks including poverty, [57] and [62] institutionalisation,[59] low birthweight,[56] stunting,[54] and iron-deficiency anaemia.[58]

• Nutritional interventions in early childhood have had mixed results. Prevention of iron-deficiency anaemia in Chilean infants improved behaviour and temperament at 12 months.[63] However, no benefits were reported for iron supplementation, zinc supplementation, or both, for the behaviour of 6–7-year-old Mexican children,[64] and nutritional supplementation of stunted Jamaican children in early childhood did not improve their behaviour at age 11–12 years[65] or their mental health at age 17–18 years.[54]

Interventions for behavioural disorders: universal

• School-based preventive interventions for children aged 3–8 years involving teacher training, teaching a class-wide social-emotional curriculum, or both, have shown concurrent improvements in child problem behaviours [66], [67], [68] and [69] and child competencies.[68] Furthermore, there is evidence that these interventions are well accepted by teachers. [68] and [70] Integration of a brief behavioural parent training intervention into health services for 2–6-year-old children in Iran improved parent reported practices and child abuse.[71] A community-based preventive programme targeting drug use in China successfully reduced drug use initiation in young men aged 15–19 years.[72]

Interventions for behavioural disorders: selective

• Benefits from child training interventions for children aged 7–14 years with behaviour problems were reported for externalising problems [73] and [74] and social skills.[74]

Interventions for emotional disorders: universal

• Interventions involving structured activities have shown benefits for children aged 7–14 years in war-affected communities.[75] A school-based physical activity intervention for 15-year-old students in Chile showed benefits to anxiety and self-esteem but not to depression.[76] A psychosocial intervention to prevent depression in 12–16-year-old adolescents in Mauritius showed short-term benefits to depression, hopelessness, coping skills, and self-esteem. Benefits to coping skills and self-esteem were sustained at follow-up after 6 months.[77]

Interventions for emotional disorders: selective

• School-based and camp-based psychosocial group interventions have generally, although not consistently, shown benefits to child and adolescent mental health, including internalising problems, behavioural difficulties, and competencies. Interventions have targeted children aged 7–18 years affected by conflict, [78], [79], [80] and [81] 10–15-year-old children orphaned by AIDS,[82] and 8–15-year-old children with substantial depressive symptoms.[83] For 5–6-year-old children displaced by war,

a combination of group psychosocial intervention and home visits for mothers improved maternal and child mental health.[84]
Interventions for intellectual disorders: universal • Effective interventions to prevent cognitive deficits in low-income and middle-income countries include maternal and child nutritional and micronutrient supplementation, immunisation programmes, reduction of exposure to environmental toxins, prenatal and perinatal maternal health interventions, malaria prevention, and early stimulation programmes. [38], [85] and [86] Other interventions with potential to prevent intellectual disorders include accident and injury prevention, child abuse prevention, and interventions to prevent prenatal alcohol exposure.[85]
Interventions for intellectual disorders: selective • Home-visit programmes to train mothers of 3–6-year-old disabled children in early stimulation activities have shown some benefits to child development.[87]

Panel 2. Design and adaptation of effective interventions to prevent child and adolescent mental health problems in low-income and middle-income countries
• Establish the extent of the problem and the perceived need for an intervention within the community. [83] and [88] • Choose or design an intervention that targets risk factors and protective factors for child and adolescent mental health in that setting. [72] and [83] • Promote ownership of the intervention by the community; for example, by inclusion of key stakeholders in the design or choice of the intervention. [72] and [76] • Promote buy-in to the intervention by all stakeholders before implementation (eg, a study[89] reported difficulties with a school dropout intervention due to poor teacher support). • Use evidence-based interventions with inbuilt cultural flexibility. For example, use interventions that build on existing practices and strengths. [66] and [57] • Assess the feasibility and acceptability of the intervention for staff within the setting before implementation (eg, are sufficient resources and time available?). • Ensure the intervention is acceptable and is perceived as relevant by participants to promote engagement. For example, assess the extent to which the intervention fits in with prevailing attitudes, beliefs, and current practices.[88] • Pilot and assess the intervention in the new setting, with quantitative and qualitative methods, and use the data to inform any modifications to the intervention before wider implementation. • Integrate interventions into existing services and use existing staff to promote sustainability (eg, integrate interventions into school settings, health-care services, social services, and community services). • Provide intervention staff with systematic training and provide ongoing monitoring and support for staff.

Most preventive interventions implemented in early childhood in LMIC target overall child development rather than child mental health. However, increasing evidence shows that some of these early interventions can benefit the mental health of children both concurrently and in the long term. An early stimulation programme for stunted

children in Jamaica with 2 years of home visits reduced anxiety, depression, and attention deficit, and enhanced self-esteem at age 17–18 years.[54] In Mauritius, 2 years of high-quality preschool from age 3 years reduced conduct disorder and schizotypal symptoms at 17 years of age and criminal offences at age 23 years[61]—these benefits were greatest for children who were undernourished at 3 years.

Undernutrition and micronutrient deficiencies are highly prevalent in LMIC, and are associated with behavioural deficits;[38] however, the results of studies into the effects of supplementation on child behaviour and mental health have been mixed. Other non-specific interventions used in many LMIC that have the potential to improve child and adolescent mental health include healthy schools initiatives, life skills education, and youth development programmes; [89], [90], [91] and [92] however, these approaches have not been rigorously assessed.

In HIC, proven interventions for prevention of behavioural disorders include parent training in behaviour management, teacher training in classroom management, psychosocial interventions with children, or all three. All these approaches have been used in LMIC. Preventive interventions have been successfully integrated into schools, [66], [67], [68] and [73] health-care settings,[71] and community services;[72] this integration into existing services is likely to be important for the scale-up and sustainability of interventions.

Four school-based interventions to prevent emotional disorders in older children and young adolescents in LMIC all showed benefits. [76], [77], [82] and [83] Additionally, there are several studies of interventions for conflict-affected children. A systematic review[93] of interventions for children affected by violence in LMIC showed that most interventions were beneficial by reduction of negative symptoms, increase of protective factors, or both, with effect sizes of 0·27–0·54. However, the overall

quality of the studies was poor. Four additional studies were identified by our review. [78], [79] and [80] Overall, although various approaches have shown some benefits to child and adolescent mental health, published work suggests that there is a gap in research into gender-specific interventions, and that effective interventions for adolescent males are needed.

Previous reviews describe how prevention and amelioration of young children's exposure to risk factors (eg, undernutrition, inadequate cognitive stimulation, iodine deficiency, and iron deficiency) can prevent cognitive deficits.[38] There is little evidence of the effectiveness of selective interventions for children with established intellectual disabilities. Training of parents in enrichment activities is commonly used in community-based rehabilitation programmes, but few controlled studies have been done and small sample sizes make the results difficult to interpret.

Ideally, early interventions would prevent the onset of child and adolescent mental health problems. Nevertheless, once diagnosed, more complex and targeted treatment interventions are usually required. General health surveys [94] and [95] suggest that local data have a decisive role in modifying professional practice in LMIC—a report on four health priorities (malaria, contraception, diarrhoea, and tuberculosis) noted that health-care providers believe that research done and published in their own country is more likely to change their clinical practice compared with research from HIC.[95] The evidence is most needed where the least knowledge is currently available; although almost 90% of all children and adolescents live in LMIC, only about 10% of randomised controlled mental health trials for this population come from LMIC (figure 2). Of these studies, almost all trials assessed psychopharmacological interventions. The lack of high quality studies assessing psychosocial or combined treatments for childhood mental health problems is confirmed by our review. This

deficiency is all the more relevant because these interventions require culture-specific evidence.

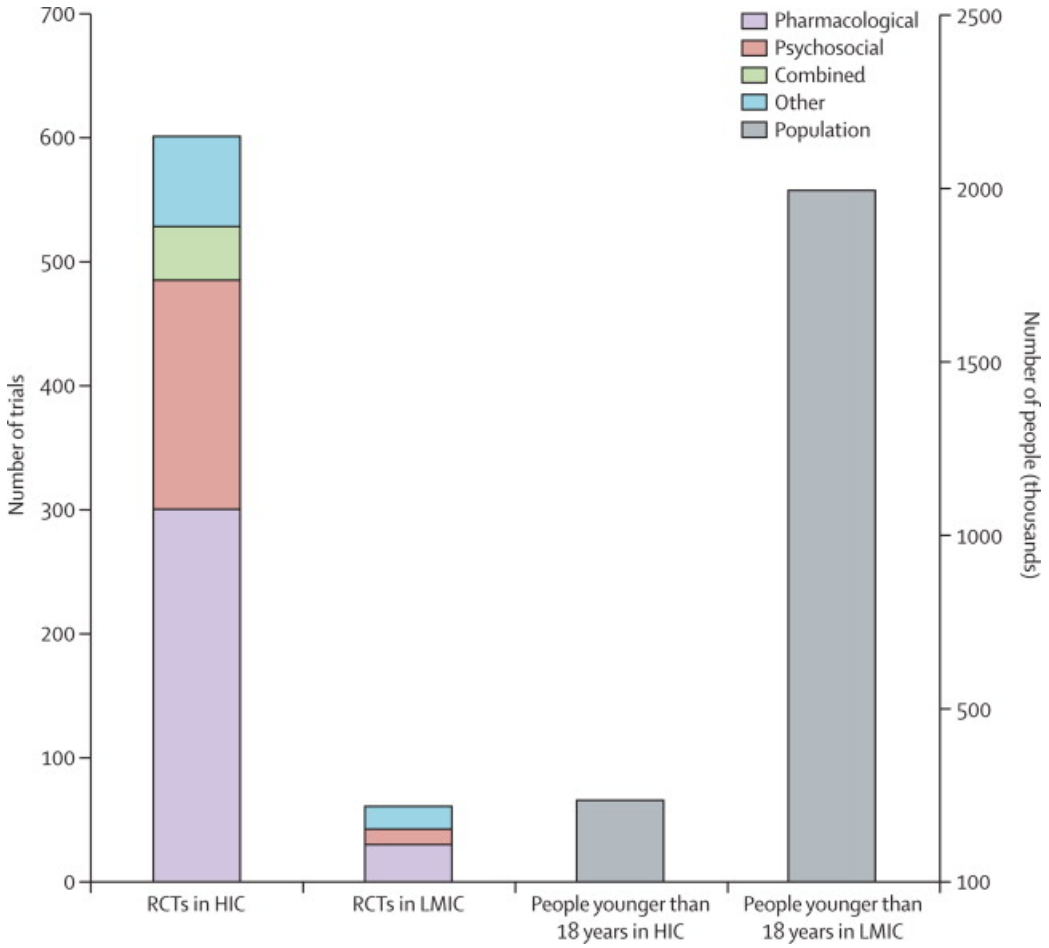

Figure 2. The 10–90% divide in research into treatment for childhood and adolescence mental health disorders. RCTs=randomised controlled trials (between 2001 and 2010). HIC=high-income countries. LMIC=low-income and middle-income countries.

Although no randomised controlled trials of psychosocial interventions for childhood externalising problems were identified in LMIC, reports from disadvantaged populations in HIC can provide indirect evidence of effectiveness. A study[96] in low-income urban African-American communities showed that peer-identified teacher

opinion leaders enhanced the dissemination and implementation of school-based mental health programmes by promotion of increased teachers' self-reported use of recommended strategies of attention-deficit hyperactivity disorder management compared with mental health providers alone. In another study[97] done in an underserved community in the Appalachian region of the USA, a combined psychosocial intervention effectively reduced hyperactivity symptoms and early aggressive and delinquent behaviour.

For internalising problems, group cognitive behavioural therapy was effective for the treatment of obsessive-compulsive disorder in Brazilian children and adolescents.[98] A multisystemic therapy in a predominantly African-American population reduced rates of attempted suicide significantly more than did emergency hospital admittance.[99] In addition to the preventive interventions for children and adolescents affected by conflict, some evidence is also available for the treatment of post-traumatic stress disorder in LMIC; participation in a group intervention led by supervised schoolteachers reduced symptoms in war-traumatised high school students in Kosovo.[100]

Other initiatives have been launched to provide evidence-based information to overcome the 10–90% divide in treatment of childhood and adolescence mental health problems; the WHO mhGAP intervention guide[101] includes methods for the assessment and management of various disorders in childhood and adolescence. The manual also contains specific guidelines for the management of developmental and behavioural disorders, such as family orientation, advice to teachers, and community-based rehabilitation. The integrated services programme of the World Psychiatric Association Presidential Programme on Child Mental Health provides two sets of evidence-based techniques to address internalising and externalising problems in

school-age children. [102] and [103] These two manuals discuss how to implement brief interventions, and constitute a valuable resource that can be further used for the implementation of integrated, evidence-based systems of care according to local needs.[103] An additional resource is the review[104] of the treatment of attention-deficit hyperactivity disorder, which was part of the Public Library of Science series of packages of care for mental, neurological, and substance disorders in LMIC.

Discussion

We have shown that the prevalence of mental health problems in children in LMIC is similar to those in HIC. Because most children live in LMIC, these proportions have a public health importance. We have also shown that although there are large gaps in research into effective prevention and treatment of these disorders, sufficient evidence from LMIC and from resource-poor settings in HIC exists to justify the set-up of services that can make these interventions available to a large number of children who need them.

Despite these findings, the published work has several limitations and gaps exist in research into child and adolescent mental health. Although, clearly, child and adolescent mental health problems are common, future studies should address the imprecision of prevalence estimates to allow for improvement in services planning. Meta-regression approaches can help to detect reasons for variability between estimates—for example, the definitions of impairment and severity vary across surveys. More consistent prevalence could be recorded with the same methodology or instrument (webappendix pp 1–2). Multinational child and adolescent studies applying standardised methods based on the International Classification of Diseases criteria could be undertaken in different cultures, as is done for adults.[105] Importantly,

intellectual and developmental disorders should be included in these studies (their exclusion might have led to an underestimation of the prevalence of mental health problems in many of the surveys reviewed in our report). Dimensional scales have also proved to be valuable to assess mental health problems both in HIC and in LMIC.[106]

Not much research has been done on resilience and protective factors in LMIC. In view of the increased exposure to many risk factors in these countries, the study of such positive elements can inform the design of interventions that aim to prevent or reduce risk factors at specific times in life. Because most risk factors were identified in cross-sectional or case-control studies, prospectively assessed cohorts are also needed to confirm and further understand the developmental trajectories of child and adolescent mental health problems from at-risk states to full blown presentations.

Methodologically sound assessments of the effectiveness of interventions to prevent or treat mental health problems in LMIC are sparse for all groups of disorders, and for the assessment of indigenously developed interventions. Heterogeneity between LMIC should also be taken into account when interpreting data. Most evidence for prevalence and preventive strategies comes from middle-income countries (webappendix pp 1–17). For the treatment studies, for example, 58 of a total of 670 randomised controlled trials for child and adolescent mental health problems were from middle-income countries and only one came from a low-income country. Regional differences within LMIC should also be considered.

Scaling up of interventions so that they can benefit large populations requires systems that can sustain such an expansion. Attempts to integrate child mental health into existing systems have yielded important lessons. Jordans and colleagues[107] described several challenges in the implementation of interventions for children in low-income

settings—integration needs a high degree of intersectorial collaboration, which is not easy; interventions that work in one area may not work in another because of cultural differences; where schools are the entry-point for intervention, children who do not attend might be missed; and the cost-effectiveness of such a model has not been determined.

Recognition that mental and physical health are indivisible is crucial[108]—infectious diseases, malnutrition, and poor obstetric practices all have an effect on a child's mental health. Additionally, maternal depression and lack of psychosocial stimulation affect infant growth and cognitive and socioemotional development.[109] Integration of child mental health with other paediatric and primary care services such as the Integrated Management of Childhood Illness and the Mother and Child Health Programmes might benefit both child mental health outcomes and physical outcomes. The intervention studies we reviewed also support the argument that child and adolescent mental health services are not restricted to the health sector, and that several other agencies are affected by mental health issues and have an important role in supporting mental health.[110] These systems include education, social care, and criminal justice. For example, in LMIC the onset of impulse control disorders and substance misuse leads to the early cessation of education, which results in long-term marginalisation of the individual and a burden on society.[111] Although collaboration between agencies presents opportunities for joint work, such an approach raises important challenges. A common language for child mental health has to be developed between professionals from various backgrounds; networking and communication between agencies has to be fostered; innovative mechanisms to train and supervise the non-specialist workforce and frontline staff have to be developed; and joint ownership should not prevent the emergence of strong local leaders who can

work together and also influence national and international policy in this neglected area. The development of community-based approaches to care that incorporate good child mental health practices is feasible in LMIC.[8] Programmes fostering participation by young people and incorporating a rights-based focus lead to healthy behaviours.[112]

The Atlas of Child and Adolescent Mental Health Resources presented information for 66 countries and reported that less than a third of countries had an individual or government entity with sole responsibility for child mental health programming; furthermore, funding for child mental health services was rarely identifiable in the countries' budgets.[113] The dependence on non-governmental organisation support for the development of services can allow governments to neglect the need to incorporate child mental health services in their national budgets. [113] and [114] The failure of governments to support services has led to a disproportionate reliance on out-of-pocket expenditures to support child and adolescent mental health in LMIC.[113] The privatisation of mental health services in LMIC with poorly developed and inadequate funding has further compounded the difficulty of development of systems of care.[109] The demanded co-payments have hampered access to care, and the movement of the most experienced clinicians to the private sector has drained valuable resources from the public sector. Other issues in the provision of mental health services in LMIC, including stigma, lack of trained workforce, and priorities for research in mental health are reviewed in detail in this, and previous, Lancet Series on global mental health.

To develop child mental health services in LMIC, one needs to understand the decision-making processes and intersectorial competition to develop specific economic arguments to gain the attention of policy makers and affect resource

allocation.[115] For example, if provision of community-based child mental health services results in a reduced school drop-out rate and an enhanced ability to join the workforce and be self-supporting, then these benefits can be conveyed to governments and foster a change in resource allocation and not increase the cost of services.

Economic research has documented the long-term consequences of childhood mental health problems in HIC, both in terms of achievement scores and education,[116] and adult health and labour market outcomes.[117] The economic argument for early investment in disadvantaged children was put forward when Carneiro and Heckman[118] investigated the rate of return from investment at different times of life and showed that early prevention is often more cost effective than later remediation. Webappendix p 18 shows an extension of the original idea[119]—that investments made in the womb have a higher return than those made at later ages; the returns from earlier investments can be reaped over long periods, and since capabilities (cognition, and physical and mental health) show both self-productivity and cross-productivity,[120] an early investment has many positive effects. The crucial role of promotion of good health early in life and the importance of prevention is made clear in a recent economic framework for analysing the effects of interventions.[121] The framework assesses distributional and heterogeneous effects of interventions, and allows these differential effects to be a function of early capabilities, consistent with evidence from preventive strategies.[61]

More evidence on cost-effectiveness is needed, starting from the addition of cost analysis to existing effectiveness studies and the inclusion of the effects of social and economic policy on mental health. [122] and [123] Notably, only two of the many interventions identified in our report are accompanied by cost–benefit ratios; and

because evidence suggests an increased effectiveness of long and intensive interventions, to take costs into account is imperative. Assessment of interventions should also account for spillover effects, both within the household and locally,[124] which is especially important because of the high cost of improvement of the health of people with mental health problems, and the fact that such benefits are not usually accounted for by the DALY methodology.[125]

The findings from the Atlas of Child and Adolescent Mental Health Resources[126] suggest that governmental child mental health policies are scarce worldwide. LMIC lack the policies to guide system implementation, thus hampering service development, and undermining efforts to ensure accountability for the manner in which resources for programme development are allocated. The UN resolution on a World Fit for Children[127] endorses the commitment that "every child has the right to develop his or her potential to the maximum extent possible to become physically healthy, mentally alert, socially competent, emotionally sound and ready to learn". LMIC too often identify their ratification of the UN Convention on the Rights of the Child as proof of their commitments to child and adolescent mental health services and to child and adolescent wellbeing in general. However, evidence suggests that endorsement of the Convention is not correlated with the development of specific policies or programmes to support child and adolescent mental health services.[113]

The World Report on Violence and Health[128] identified abuse and neglect in the early years of life as leading to emotional difficulties and mental health problems and urged for the protection of children from harm. Subsequently, the UN Convention on the Rights of Persons with Disability[129] was adopted, which includes provisions for those affected by mental illness and can affect country-level advocacy for the development of child mental health services and for the humane treatment of those

with mental health problems. The effect of the UN Convention on the Rights of Persons with Disability has not yet been assessed.

As well as political will,[130] the key to the development of child and adolescent mental health policy is the education of the population about the need for such services in order to improve the quality of life for individuals, families, and communities. The World Psychiatric Association Presidential Programme on Child Mental Health, a collaboration between the World Psychiatric Association, WHO, and the International Association for Child and Adolescent Psychiatry and Allied Professions, developed and field-tested an awareness manual.[131] This instrument is a valuable guide that helps communities and individuals who want to promote child mental health to develop advocacy programmes leading to policy.

Last, it is striking that the major international non-governmental organisations and UN agencies, with the exception of WHO, fail to acknowledge or only infrequently focus on child mental health. These entities work in settings where children are at risk or have mental distress and disorder. The aversion to embrace more formal child mental health interventions in favour of psychosocial approaches too often leads to a failure to alleviate personal suffering or ameliorate the potential for community or societal disruption. Furthermore, the lack of specific interventions leads to long-term negative effects on educational attainment, chronic disability, and lost productivity. Broad psychosocial strategies need to be coupled with targeted interventions in the organisation of mental health systems. Child and adolescent policy development is as dependent on the mobilisation of potential stakeholders as it is on the mobilisation of financial resources.[132]

The promotion of child and adolescent mental health is a worldwide challenge, but a potentially rewarding one. Accumulating evidence suggests that early interventions

can provide long-term health and socioeconomic benefits by prevention of the onset of mental health problems and their development into chronic disorders. Panel 3 summarises this evidence and presents recommendations for the promotion of child and adolescent mental health. These issues are even more relevant in LMIC, where the proportion of children and adolescents in the population is high and the resources are scarce. The situation in LMIC also presents a window of opportunity, because many LMIC are currently going through a demographic transition, and intervention today is likely to result in a decreased burden in the future.

Panel 3. Global child and adolescent mental health: evidence and recommendations
Epidemiology: available evidence • Mental disorders affect 10–20% of children and adolescents worldwide • Heterogeneity in prevalence studies prevents direct comparisons between countries or meta-analytic approaches • Risk factors for mental disorders identified in LMIC are similar to those found in HIC; research on resilience is still scarce in LMIC
Epidemiology: future directions • Prevalence studies should ideally be connected with, and serve as a basis to plan services • Nationally representative surveys from LMIC and multinational standardised prevalence studies should be done • Assessment of risk factors and protective factors with a developmental approach enables connection with intervention models
Intervention: available evidence • An increasing number of preventive strategies have been successfully tested in many LMIC • Whereas 90% of the children and adolescents live in LMIC, only 10% of the mental health randomised trials come from these countries • Packages and manuals (such as the mhGAP guide) are available for the management of childhood mental disorders in LMIC
Intervention: future directions • Culturally appropriate and scalable interventions still need to be developed further and tested to close the 10–90% gap • Additional randomised clinical trials on psychosocial treatments are needed, with harmonised measurements and outcomes to ease comparisons across studies • Future intervention studies should collect data for cost-effectiveness analyses
Implementation: available evidence • Less than a third of countries have an entity in charge of mental health programmes for children and adolescents • Initial experience suggests that integration with existing, community-based systems is feasible

• Investments in children and adolescents yields high returns in terms of developmental potential realised, adult disorder prevented or less severe, and economic advantage for healthy individuals
Implementation: future directions • Early interventions and rehabilitative or curative interventions need to develop side-by-side, which can be made efficient by task sharing • Partnership with physical health programmes and agencies outside the health sector (eg, education, social care, criminal justice) is advised • Awareness programmes and mobilisation of potential stakeholders should be considered as part of any child and adolescent mental health service development
LMIC=low-income and middle-income countries. HIC=high-income countries.

Search strategy and selection criteria
We searched PubMed, Embase, PsycInfo, and the Cochrane Library of systematic reviews and clinical trials with the following terms: "child", "adolescent", "mental", "developing" or "low- and middle-income country", together with specific terms for prevalence; risk, protective and resilience factors; prevention and treatment strategies (webappendix p 19). Citation lists from the studies and reviews retrieved were also hand-searched for further studies. For prevalence studies, we selected original studies addressing the global prevalence of mental disorders in children and adolescents from representative non-referred samples with diagnoses based on any version of the Diagnostic and Statistical Manual of Mental Disorders or International Classification of Diseases. For preventive studies, separate searches were done for non-specific interventions (eg, early childhood interventions, nutritional interventions, child or youth development programmes), externalising disorders, internalising disorders, and intellectual disabilities. Preventive studies were included if they were randomised controlled trials or non-randomised experiments with a concurrent control group; if intervention occurred before the age of 18 years; and if child or adolescent mental health outcomes were assessed. Treatment studies for five groups of child and adolescent mental disorders (externalising disorders [attention-deficit hyperactivity disorder and conduct disorder]; internalising disorders [depression and anxiety disorders]; early onset schizophrenia; mental retardation or intellectual disabilities; and autism or pervasive developmental disorders) were searched. Studies were included only if they were randomised controlled trials. We concentrated on papers published after 2000 (after 1980 for prevalence studies), and prioritised evidence important for and relevant to low-income and middle-income countries, and from systematic reviews and meta-analyses.

Contributors

All authors contributed to the writing of the report. AR and CK developed the outline for the review. CK, IE, LAR, and OO did searches and prepared the section on

prevalence, risk, and protective factors. CK, HB-H, and SS did searches and prepared the section on prevention and treatment. AR, GC, MB, and NU did searches and prepared the section on service delivery, and economic and political aspects of child and adolescent mental health. CK prepared the initial draft of the report, supervised by AR. All authors read and approved the final version of the report.

Conflicts of interest

CK took part in two meetings for attention-deficit hyperactivity disorder sponsored by Novartis and Shire. CK also took part in a meeting on the promotion of editorial capacity among editors from low-income and middle-income countries sponsored by Deva. LAR was on the speakers' bureau and acted as consultant for Eli-Lilly, Janssen-Cilag, Novartis, and Shire in the past 3 years (received less than US$10 000 per year, which is less than 5% of LAR's gross income per year). LAR also received travel awards (air tickets and hotel costs) from Novartis and Janssen-Cilag in 2010 for taking part of two child psychiatric meetings. The ADHD and Juvenile Bipolar Disorder Outpatient Programs chaired by LAR received unrestricted educational and research support from the following pharmaceutical companies in the past 3 years; Abbott, Eli-Lilly, Janssen-Cilag, Novartis, and Shire.

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6. Artigo #2

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Child and adolescent mental health research across the globe

Christian Kieling and Luis Augusto Rohde

The global perspective is gaining increasing prominence in the health agenda. Investments have been made going from the creation of specific departments and institutes devoted to the subject in almost every major university in the North America and Europe to the launch of billionaire governmental initiatives and the sophistication of non-governmental organizations. With historical roots in areas such as public health and tropical medicine, global health is currently defined as a domain that links research and practice to achieve equity in health for all people worldwide.[1] More recently, enthusiasm has reached the field of mental health.[2] The burden imposed by mental disorders and the disparities in the provision of care in both poor and rich countries cast no doubt upon the relevance of the emerging discipline of global mental health.

Children and adolescents are at the center of this issue for at least two reasons: They constitute large proportions of the population in resource poor settings and represent a developmental window of opportunity to prevent the onset and reduce the chronicity of mental health problems. In this sense, it can be argued that change in the global mental health scenario requires not only focus on disadvantaged individuals, but a start early in life.

Despite the burden that mental disorders represent to children and adolescents worldwide, research in this area has originated mainly from high-income countries (HIC). In contrast, nine out of ten individuals under the age of 18 years live in low- and middle-income countries (LMIC). We have previously shown that only around 5% of all indexed psychiatric journals are published in LMIC,[3] and that 90% of randomized clinical trials assessing interventions for mental health problems in children and adolescents come from HIC.[4] As dissemination of scientific research has a pivotal role in the development and implementation of evidence-based health policies and practices, we here further explore this by assessing the scientific output in the field of child and adolescent mental health.

We searched the Web of Science database for items published in the last 10 years (between 2002 and 2011) on child and adolescent mental health using the expression "(child* OR adolescen*) AND (mental OR psych*)". We found a total of 70,498 published items from 165 countries or territories (all types of manuscripts, except meeting abstracts, were included). An item was assigned to a country if at least one author address referred to that country in the database (allowing multiple countries per paper). Countries were grouped according to the gross national income (GNI) per capita using the World Bank Atlas method.

The field of child and adolescent mental health exhibited a steady growth during the last decade: while in 2002 only 4,822 items were published, this number increased to 7,600 in 2006 and reached 10,908 in 2011. The vast majority (90.69%) of items indexed in Web of Science had an authorship from a HIC. Authorship from upper-middle-income countries was detected in 7.79% of the items; not surprisingly, only

1.19% and 0.33% of the items had authors from lower-middle and low-income countries, respectively. For comparison, the numbers for the literature focusing on general mental health issues, but not in childhood and adolescence, were not very different: 89.59% for high; 8.96% for upper-middle; 1.26% for lower-middle; and 0.19% for low-income countries. The overrepresentation of authors from HIC, however, has slowly decreased over the last ten years, with a relative decrease in the output from 93.03% in 2002 to 88.96% in 2011.

Specific analyses according to country of origin of authors revealed that almost half (48.19%) of the items had at least one author from the United States of America. Other countries highly represented in child mental health items were England (9.58%), Canada (6.45%), Germany (6.29%), and Australia (5.08%). Among LMIC, the countries with the highest representativeness in items published were Turkey (1.64%; ranked 12th), China (1.53%; 14th), and Brazil (1.42%; 15th). There was a positive correlation between the 2010 gross national income (GNI) per capita and number of items published in the decade ($rho=0.65$, $p<0.001$) for the 153 countries with both data available (Figure 1). No single publication was listed for 42 countries – where 76 million children and adolescents currently live.[5]

Building scientific capacity in low resource settings is a crucial step towards reducing the global burden of disease. Improving treatment for children with mental illnesses has been recognized as one of the priorities by the Grand Challenges in Global Mental Health consortium.[6] Further developing this prioritization exercise within the field of child and adolescent mental health can guide which areas of research should be strengthened and expanded in LMIC.

Promoting peer-review good practices among authors, reviewers and editors from LMIC is one way of enhancing the visibility trough both increased space in leading journals and possible indexation of new publications with a strong focus on global child and adolescent mental health. As an example, workshops to develop editorial capacity have been conducted with editors of general psychiatric journals from LMIC in major World Psychiatric Association meetings with a great benefit to all participants.[7]

Increasing the scientific productivity from LMIC, where the largest number of children and adolescents live today, can foster not only the enhancement of mental health promotion and prevention in these countries. As research from LMIC also allows further understanding of emotional, behavioral and intellectual abilities in a variety of risk and protective contexts, it can also lead to a deeper understanding of the processes underlying mental illness and health in general. This will require an expansion in the output of high quality research focused on those who need the most, where it is most needed.

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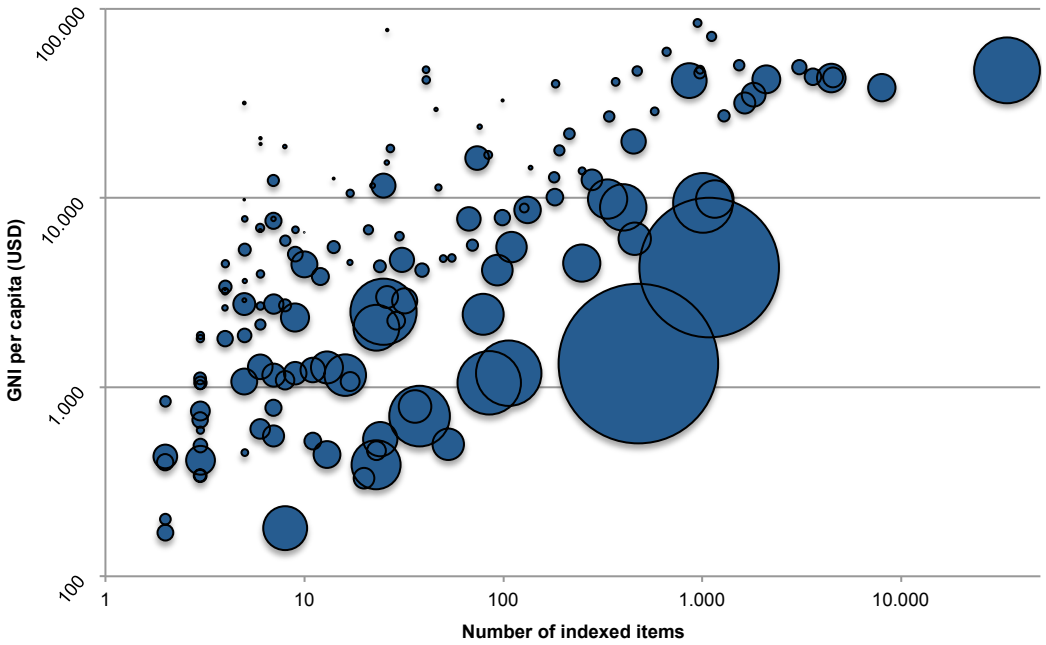

Figure 1. Scientific output by country in the field of child and adolescent mental health (2002-2011; data from Web of Science). Dot size represents the number of individuals under the age of 18 years in the country. A logarithm scale had to be used due to distribution of data. To confirm the results using another source of data, we employed the same search strategy to the Scopus database. The top-5 contributing countries were in the same order, although with a relatively smaller contribution from the USA (34.96%); top-three LMIC were Brazil (1.61%; ranked 11th), Turkey (1.32%; 16th), and China (1.17%; 17th). GNI: gross national income.

7. Artigo #3

Em submissão para o periódico *Journal of Child Psychology and Psychiatry*.

Gene-environment interaction in externalizing problems among adolescents: evidence from the Pelotas 1993 Birth Cohort Study

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Running head: GxE in externalizing problems among Brazilian adolescents

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ABSTRACT

Background: The study of gene-environment interactions (GxE) is one of the most promising strategies to uncover the origins of mental disorders. Replication of initial findings, however, has been controversial, and there is a strong possibility of publication bias in the literature. Additionally, there is a scarcity of research on the topic originated from low- and middle-income countries (LMIC). The aim of this study was to replicate GxE hypotheses for externalizing problems among adolescents in a LMIC.

Methods: As part of the Pelotas 1993 Birth Cohort Study, 5,249 children were enrolled at birth and followed up to the age of 15 years, with an 85.7% retention rate. We tested the possible interaction between the homozigosity of the 10-repeat allele at the dopamine transporter (*DAT1*) gene and maternal smoking during pregnancy in the development of hyperactivity problems during adolescence assessed by the Strengths and Difficulties Questionnaire. We also tested the possible interaction between the 30-bp repeat polymorphism at the monoamine oxidase A (*MAOA*) and the experience of childhood maltreatment in the occurrence of conduct problems among adolescent boys.

Results: Although there was a clear association between prenatal maternal smoking and hyperactivity scores in adolescence ($p<0.001$), no main genetic or interaction effects for the *DAT1* gene were detected. Similarly, childhood maltreatment showed to be associated with conduct problems among boys ($p<0.001$), with no observable main genetic or interaction effects for the *MAOA* gene.

Conclusions: In the largest mental health GxE study performed in a LMIC to date, we did not replicate previous positive findings from the literature. Despite the presence of main environmental effects, there was no evidence of differential dose-response relationship in the occurrence of externalizing problems according to genotype status. Additional replication efforts to measure GxE are needed to better understand the origins of mental health and illness, especially in LMIC.

Keywords: gene-environment interaction; *DAT1*; maternal smoking; *MAOA*; childhood maltreatment; externalizing.

INTRODUCTION

Gene-environment interaction (GxE) studies have been one of the prevailing strategies to uncover the etiology of mental disorders over the last decade. The general notion that environmental effects are conditioned by the individual's genetic background is not exactly new (Tabery, 2007). Empirical testing of this concept, however, required not only advances in molecular genetics, but also the follow-up of well-designed prospective cohorts. After an early phase of studies detecting GxE by testing specific genetic and environmental risk factors (Rutter, Moffitt, & Caspi, 2006), more recent research has challenged the initial findings of such reports, and a strong debate has arisen on what should be the conditions for replicability (Caspi, Hariri, Holmes, Uher, & Moffitt, 2010).

Up to now, research on GxE has almost exclusively originated from high-income countries (HIC). This reality is not an isolated finding in the fields of general (Patel, 2007) or child and adolescent mental health (Kieling & Rohde, 2012). One of the reasons for the lack of GxE studies from LMIC could be the reduced number of prospectively followed cohorts in these countries. Nonetheless, as 90% of the individuals under the age of 18 years live in low- and middle-income countries (LMIC) and as known risk factors for mental disorders tend to occur more frequently in low-resource settings, research conducted in LMIC could provide unique insights to the search for the causes of mental health problems.

Global interest in the health of children has predominantly focused on the reduction of mortality. Although significant advances have been achieved in terms of promoting child survival, a renewed commitment to global child health is needed (Victora, 2012). It can be argued that the burden that mental health problems impose

to children and adolescents worldwide justifies their inclusion as one of the priorities in health research (Kieling et al., 2011).

The three birth cohorts in the city of Pelotas, Brazil, are examples of longitudinal studies in LMIC that have contributed to the understanding of risk and protective factors associated with child health (Barros & Victora, 2010). All live births in the years of 1982, 1993 and 2004 that occurred in Pelotas (around 320,000 inhabitants, located in the southern part of Brazil) have been included in these studies. Mental health information has also been collected, and more recently DNA samples were obtained for the 1993 cohort. This has allowed the completion of the largest mental health GxE study conducted in a LMIC, for which we here present the data on externalizing problems among adolescents.

Externalizing problems are characterized by a wide range of behaviors, including the features usually observed in the diagnoses of attention deficit/hyperactivity disorder (ADHD), oppositional defiant disorder (ODD) and conduct disorder (CD). Although some degree of overlap in terms of psychopathological presentation exists, there are also features specific to each of the disorders (Bezdjian et al., 2011), which can be a result of different pathophysiological processes.

ADHD affects around 5% of children and adolescents worldwide (Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007). Despite the high heritability estimates (around 80%) and the large research efforts, uncovering the biological underpinnings of ADHD is still an unfulfilled promised in the field of molecular genetics, with candidate genes exhibiting only small effect sizes (Gizer, Ficks, & Waldman, 2009; Genro, Kieling, Rohde, & Hutz, 2010). Non-genetic factors in the etiology of ADHD have also been extensively investigated: environmental factors such as maternal use

of tobacco, alcohol and other drugs during pregnancy; nutritional factors; and psychosocial adversities have all been studied with controversial results (Thapar, Cooper, Jefferies, & Stergiakouli, 2012). A plausible explanation for inconsistencies in studies of both genetic and environmental factors is the occurrence of GxE (Thapar, Harold, Rice, Langley, & O'Donovan, 2007). To date, however, only a reduced number of ADHD GxE findings were replicated. The dopamine transporter gene (*DAT1*) has one of the highest number of published reports, being already assessed in interaction with psychosocial factors (2 positive studies versus 1 negative study); prenatal cigarette exposure (2 vs. 2); and prenatal alcohol exposure (1 vs. 2) (Nigg, Nikolas, & Burt, 2010).

The occurrence of CD has also been documented in different cultures (Canino, Polanczyk, Bauermeister, Rohde, & Frick, 2010). Heritability estimates for CD are usually somewhat lower than those for ADHD and suggest that individual symptoms may be differentially heritable. The presence of CD in childhood and adolescence has been linked to the development of antisocial behavior later in life (Moffitt, 1993). In fact, one of the pioneering reports in measured GxE included CD as part of the composite index of antisocial behavior adopted as primary outcome measure (Caspi et al., 2002). By assessing the interaction between childhood maltreatment and a functional polymorphism in the gene encoding the enzyme monoamine oxidase A (*MAOA*), this study proposed that maltreated males with the low *MAOA* activity genotype were more likely than nonmaltreated males with this genotype to develop CD; in contrast, among males with high MAOA activity, maltreatment did not confer significant risk for CD. This finding has been replicated by some, but not all, subsequent studies, and a meta-analysis including seven other samples confirmed the initial results, even with the exclusion of the original report (Taylor & Kim-Cohen,

2007). Since then, new reports have been published, exhibiting a variety of designs and mixed results.

The aim of the present study is to assess the presence of GxE in relation to the occurrence of externalizing behavior among adolescents in a LMIC. Specifically, we used data from the Pelotas 1993 Birth Cohort Study to test the role of the interaction between *DAT1* genotype and smoking during pregnancy in the development of inattention and hyperactive problems and the interaction between *MAOA* genotype and childhood maltreatment in the occurrence of conduct problems. Our *a priori* hypotheses were that we would replicate GxE findings originally reported in studies conducted in HIC, with (1) adolescents homozygous for the 10-repeat allele in the *DAT1* gene showing higher levels of ADHD symptoms when maternal smoking was present during pregnancy, and (2) male adolescents with low activity *MAOA* genotype presenting higher levels of CD when childhood maltreatment was reported.

METHODS

Participants of this study were individuals followed in the Pelotas 1993 Birth Cohort Study, as described in detail elsewhere (Victora et al., 2008). In brief, all children born alive in the city during the year of 1993 (N=5,265) were eligible. Only 16 cases could not be interviewed at baseline or refused to participate in the study. Follow-up visits were scheduled at multiple time points (the last one in 2008) and included assessments of mental health problems and risk factors in interviews with the child/adolescent and the primary caregiver. The data used in the analyses here were collected at the perinatal and at the 11 and 15 years assessments.

Daily visits were conducted in all five hospitals in the city of Pelotas from January 1st to December 31st 1993. Mothers were interviewed on a variety of topics on perinatal health status. Information on smoking during pregnancy was collected from the mother and dichotomized (coded as yes if positive for any trimester). Data was also obtained on the use of alcohol during pregnancy (also binary coding), ethnicity of the child (dichotomized European-Brazilian or not), maternal education level (number of years attending school grouped in three strata), and family monthly income (measured in number of minimum wages, a standard unit in Brazil valued around USD 60 in 1993). Additional visits to subsamples of the entire cohort occurred in the first years of life (Victora et al., 2008)

The 2004 follow-up (at age 11) was the first to include all individuals originally assessed at birth, with a retention rate of 87.5%. Child mental health data was collected using the validated Brazilian Portuguese version of the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997; Fleitlich-Bilyk & Goodman, 2004). The hyperactivity and conduct subscales of the SDQ (both ranging from 0 to 10), collected with the primary caregiver, were used as outcome measures for the present study. Data on maternal mental health status was obtained using the Brazilian Portuguese validated version of the Self Report Questionnaire (Mari & Williams, 1986). In 2008 (at age 15), 85.7% of all children originally included in the baseline visit were assessed. Adolescents answered a confidential form that included seven questions about domestic violence, physical and sexual abuse. Following the strategy adopted by Caspi et al. (2002), individuals were classified as no maltreatment, probable maltreatment (one positive answer), and severe maltreatment (two or more positive answers). Information on mental health (hyperactivity and conduct SDQ subscales) was collected using the same strategy as in 2004.

DNA was obtained in the last visit using saliva samples and isolated with the Oragene DNA kit (DNA Genotek Inc Ontario, Canada) according to the manufacturer's instructions. The 40-bp variable number of tandem repeats (VNTR) at the 3' untranslated region (UTR) of *DAT1* was amplified using the polymerase chain reaction (PCR) with protocols previously described (Roman et al., 2001). Genotype groups were defined by the presence or absence of two copies of the 10-repeat allele. The 30-bp repeat polymorphism of the *MAOA* VNTR was amplified using PCR conditions adapted from Manor et al. (2002). High and low activity groups were defined using the same criteria as in the original study by Caspi et al. (2002): alleles with 3.5 or 4 copies of the repeat sequence were classified as high activity; the remaining, as low activity. Analyses including the *MAOA* gene were restricted to boys because of the uncertainty of activity status among girls (due to X-chromosome inactivation) and to allow for comparisons with most of the published results.

To examine whether genotypes moderated the effect of environment on SDQ measures, linear regression analyses were used (with preference to the data collected at age 15). Logistic regression analyses were performed to confirm results using dichotomized outcome measures. Caseness was operationally defined as having an SDQ score above the 95th percentile for hyperactivity or conduct problems.

Potential confounders were defined using conceptual (based on literature review) or statistical (association with both genetic/environmental risk factor and outcome at $p \leq 0.2$) definitions – categorical and continuous variables were assessed using chi-square or Student's t tests. Significance for all other analyses was considered for a $p < 0.05$. Statistical analyses were performed using PASW Statistics, version 20. This study was approved by the Institutional Review Board of the School of Medicine,

Universidade Federal de Pelotas (UFPel). Informed consent was obtained from the primary caregiver.

RESULTS

A total of 4,101 adolescents provided saliva DNA samples for current analyses; 48.9% were boys. Around two thirds (66.2%) were of European ancestry. One third (33.2%) of the mothers stated having smoked and 5.2% declared to have used alcohol during pregnancy. Mean family monthly income was 4.2 minimum wages (standard deviation [sd]: 5.7). Maternal education as measured by the number of years of school attendance was distributed as follows: 0-4 years, 24.5%; 5-8 years, 48.2%; and 9 years or more 27.4%. Screening for maternal psychopathology was positive in 30.8% of the cases. No evidence of maltreatment was found in 67.0% of the individuals; 18.3% and 14.7% of the adolescents were classified as suffering probable and severe maltreatment, respectively. Both SDQ scores exhibited a decrease from ages 11 to 15: for hyperactivity mean scores decreased from 4.3 (sd: 3.1) to 3.8 (3.1); and for conduct scores from 2.5 (2.3) to 2.3 (2.3). Table 1 presents the sample characteristics according to genotype group.

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Genotype for the *DAT1* was successfully defined for 4,093 adolescents, 49.5% of them being homozygous for the 10-repeat allele. Regression analyses showed

evidence for an association between maternal smoking during pregnancy and SDQ hyperactivity scores at age 15 ($p<0.001$). No evidence, however, was found for an association between genotypic groups and SDQ hyperactivity scores ($p=0.257$) or for a different pattern of dose-response relationship between maternal smoking and hyperactivity according to *DAT1* genotype group ($p=0.309$) (Figure 1). Inclusion of ethnicity and maternal use of alcohol as covariates showed these variables to be associated with the outcome ($p=0.001$ and $p=0.009$, respectively), but did not change the results. Analyses using the 11 years SDQ hyperactivity measures or the dichotomized variable as outcome exhibited similar results (data not shown).

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Genotype for the *MAOA* was successfully characterized for 1,998 boys, 37.1% of them possessing a low activity allele. In a similar fashion, regression analyses suggested the presence of an association between childhood maltreatment and SDQ conduct scores ($p<0.001$). No evidence, however, was found for an association between high and low activity genotypic groups and SDQ conduct scores ($p=0.223$) or for a different pattern of dose-response relationship between maltreatment and conduct according to *MAOA* genotype group ($p=0.823$) (Figure 2). Inclusion of ethnicity and maternal use of tobacco as covariates showed these variables to be associated with the outcome (both $p<0.001$), but did not modify the results. As for the previous analysis, using the dichotomized variable as outcome did not change the pattern of results (data not shown).

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DISCUSSION

This study assessed candidate GxE in relation to the occurrence of externalizing behavior during adolescence. Our goal was to replicate some of the positive GxE findings from the HIC literature in a large population-based LMIC cohort. Although there was a clear association of environmental risk factors with higher levels of externalizing problems, neither main genetic nor GxE effects were detected.

The growing literature on GxE for ADHD has assessed a variety of genetic and environmental risk factors, but with few reports replicating the same selection of variables and designs (for a review, see Nigg et al., 2010). The first study to evaluate the interaction between *DAT1* polymorphisms and smoking during pregnancy in the etiology of ADHD was published by Kahn, Khoury, Nichols, and Lanphear (2003). They assessed 161 children at 5 years of age; information on prenatal smoking was retrospectively collected when the child was 6 months old. Results indicated that children both homozygous for the 10-repeat allele and with prenatal smoke exposure had higher levels of hyperactive-impulsive, but not inattentive symptoms. A subsequent study failed to identify an interaction between *DAT1* gene (investigating VNTRs in the 3'UTR and also in intron 8) and environment (defined as smoking at least 20 cigarettes per day) in two clinical samples (n=396 children aged 5-15 and their parents) from the United Kingdom and Taiwan (Brookes et al., 2006). A twin-

study by Neumann et al. (2007) (140 cases and 692 controls) pointed to the existence of GxE between *DAT1* and prenatal smoking, but this time the risk genotype was the presence of a 9-repeat allele (with an odds ratio of 2.9 for having a DSM-IV combined subtype diagnosis). Langley et al. (2008) assessed GxE for multiple genetic markers and risk factors in a clinical sample of 266 children, showing no evidence of interaction between *DAT1* and prenatal smoking.

Methodological differences in terms of design, sample composition, definition of risk factors, selection of genetic markers, and outcome measure may constitute reasons why results have been heterogeneous. Interestingly, novel genetically sensitive research designs have questioned the role of maternal smoking during pregnancy in the etiology of ADHD, as the association between the two variables might be a consequence of an inherited effect (Thapar et al., 2009). Specific gene-environment correlations (rGE) – in which exposure to environmental experiences depends on an individual's genotype – remain to be tested.

Research on the interaction between maltreatment and *MAOA* genotype has been more consistent. The landmark study by Caspi et al. (2002) provided epidemiological evidence that the effect of negative experiences on the development of antisocial behavior (including CD during adolescence) was moderated by *MAOA* activity group genotype. It was followed by a number of successful and unsuccessful replications. The one existing meta-analysis (Taylor & Kim-Cohen, 2007) confirmed the existence of GxE as correlation coefficients between antisocial behavior and maltreatment varied according to *MAOA* genotype status (0.30; 95%IC 0.24-0.36 for the low activity group and 0.13; 95%IC 0.09-0.17 for the high activity group).

Again, heterogeneity in the definition of antisocial behavior across different studies might be one of the explanations of mixed results in many studies such as the one here reported. The wide age range assessed in different samples might also be one of the reasons for non-replication, as presentation and persistence of antisocial behavior tend to vary across the lifespan (Moffitt, 1993).

Strengths of the present study include the follow-up of a large number of individuals in a population-based cohort from birth until mid-adolescence, with a low attrition rate. Multiple strategies have been developed by the local research team to find study participants, including media advertisements and internet search. A major limitation of the present report is the use of a screening instrument as the outcome variable. The SDQ, however, was sufficiently robust for the detection of main environmental effects; it has been already used in other GxE studies assessing externalizing behavior with positive results (Enoch, Steer, Newman, Gibson, & Goldman, 2010) and demonstrated to have a moderate predictive power when compared to DSM-IV diagnoses in a subsample of the Pelotas 1993 Birth Cohort Study, with an area under the curve in ROC analyses of 0.74 (95% CI 0.68–0.81) (Anselmi, Fleitlich-Bilyk, Menezes, Araújo, & Rohde, 2009).

Self-report has been originally suggested to be a viable proxy measure for cotinine levels among women who smoke during pregnancy, but recent data have challenged this assumption (Shipton et al., 2009). In this sense, assessment of prenatal smoking ideally would have been conducted with objective methods prospectively during pregnancy. Although a potential risk of underreport exists, a recent joint analysis of the Pelotas and Avon Longitudinal Study of Parents and Children cohorts indicated that maternal prenatal smoking in the Brazilian city was twice as frequent as in the

British cohort (Brion et al., 2010). The fact that information on maltreatment was retrospectively collected at the same time as data on adolescent externalizing behavior makes the GxE analysis for conduct problems a cross-sectional one, allowing no inference on causation.

Replication of findings has been continuously recognized as *condicio sine qua non* for the acceptance of GxE hypotheses (Moffitt, Caspi & Rutter, 2005). Although the exact strategy to compare studies (broad versus narrow replications) is still in debate (Caspi et al., 2010), the risk of false positives cast no doubt on the need to further substantiate GxE effects in psychopathology (Asherson & Price, 2012). The relevance of publishing negative findings is also clear since positive GxE results are found in 96% of novel studies but only among 27% of the replication attempts, and because those replications with positive results tend to have smaller average sample sizes in comparison to the negative ones – two evidences of strong publication bias in the GxE literature (Duncan & Keller, 2011).

The fact that isolated nature or nurture effects cannot account for the occurrence of mental disorders makes gene-environment interplay a compelling model to better understand the origins of mental health and illness. The search for specific GxE, however, still represents a complex and unfinished task, as heterogeneity in terms of definition of variables of interest, research designs, and samples assessed have to be taken into account when interpreting results or planning future studies. In this sense, replicating GxE studies in LMIC not only sheds light on the etiology of mental health problems where nine out of ten children and adolescents live, but also provides valuable information on the validity of proposed models.

KEY POINTS

• Measuring GxE has received an increasing attention in the mental health literature. Initial findings, such as *MAOA* x childhood maltreatment in the development of antisocial behavior or *DAT1* x maternal prenatal smoking, have not always been replicated.

• The literature on GxE has predominantly originated in HIC, and there is a possible publication bias, with fewer negative findings than expected published.

• In the largest mental health GxE in a LMIC to date, we found associations between environmental risk factors and externalizing problems (maternal smoking for hyperactivity and childhood maltreatment for conduct).

• However, we did not observe any evidence of main genotypic or interaction effects of the *DAT1* and *MAOA* genotype relevant to the occurrence of externalizing problems during adolescence.

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DECLARATION OF INTEREST

CK took part in two meetings on ADHD sponsored by Novartis and Shire. He also took part in a meeting on the promotion of editorial capacity among editors from low-income and middle-income countries sponsored by Deva. LAR was on the speakers' bureau and/or acted as consultant for Eli-Lilly, Janssen-Cilag and Novartis in the last 3 years. Currently, his only industry related activity is taking part in the advisory board/speakers bureau for Eli-Lilly, Novartis and Shire (<USD10,000 per year and reflecting <5% of his gross income per year). The ADHD and Juvenile Bipolar Disorder Outpatient Programs chaired by him received unrestricted educational and research support from the following pharmaceutical companies in the last 3 years: Abbott, Bristol-Myers Squibb, Eli-Lilly, Janssen-Cilag and Novartis.

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Table 1. Sample characteristics according to genotype groups

		DAT1 genotype		*MAOA* genotype	
		other (n=2,066)	10/10 (n=2,027)	low activity (n=742)	high activity (n=1,256)
Male		48.7%	49.0%	100%	100%
European-Brazilian		64.8%	67.5%	62.0%	71.1%
Maternal education	0 to 4	25.0%	23.9%	23.2%	25.6%
(years)	5 to 8	48.3%	48.1%	47.7%	49.8%
	9 or more	26.8%	28.0%	29.1%	24.7%
Maternal alcohol		4.6%	5.8%	4.7%	4.8%
Maternal tobacco		33.2%	33.2%	29.8%	34.6%
Income (minimum wages)		4.3 (5.8)	4.2 (5.5)	4.2 (5.5)	4.3 (5.9)
Maternal psychopathology		30.4%	31.2%	30.5%	32.2%
Childhood maltreatment	No	67.3%	66.6%	74.2%	73.2%
	Probable	18.1%	18.6%	16.6%	16.6%
	Severe	14.6%	14.8%	9.2%	10.2%
SDQ hyperactivity (age 11)		4.3 (3.1)	4.3 (3.1)	4.9 (3.0)	4.8 (3.1)
SDQ hyperactivity (age 15)		3.9 (3.1)	3.8 (3.1)	4.3 (3.2)	4.2 (3.1)
SDQ conduct (age 11)		2.5 (2.4)	2.5 (2.3)	2.7 (2.4)	2.6 (2.3)
SDQ conduct (age 15)		2.3 (2.3)	2.3 (2.2)	2.2 (2.2)	2.2 (2.2)

Categorical data presented as percentages; continuous variables as mean (standard deviation). Associations with genotype for a $p \leq 0.2$ were observed with ethnicity and maternal use of alcohol (*DAT1*) and with ethnicity and maternal smoking (*MAOA*). *DAT1*: dopamine transporter gene; *MAOA*: monoamine oxidase A gene; SDQ: Strengths and Difficulties Questionnaire.

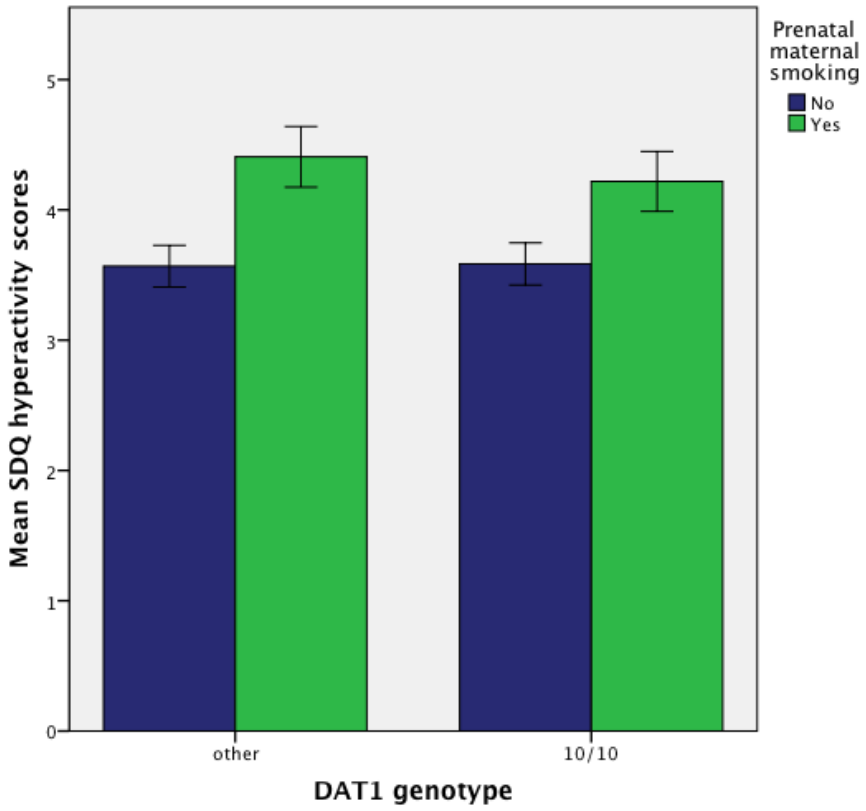

Figure 1. SDQ hyperactivity scores at age 15 according to genotype status and maternal prenatal smoking. Error bars represent 95% confidence intervals. SDQ: Strengths and Difficulties Questionnaire; *DAT1*: dopamine transporter gene.

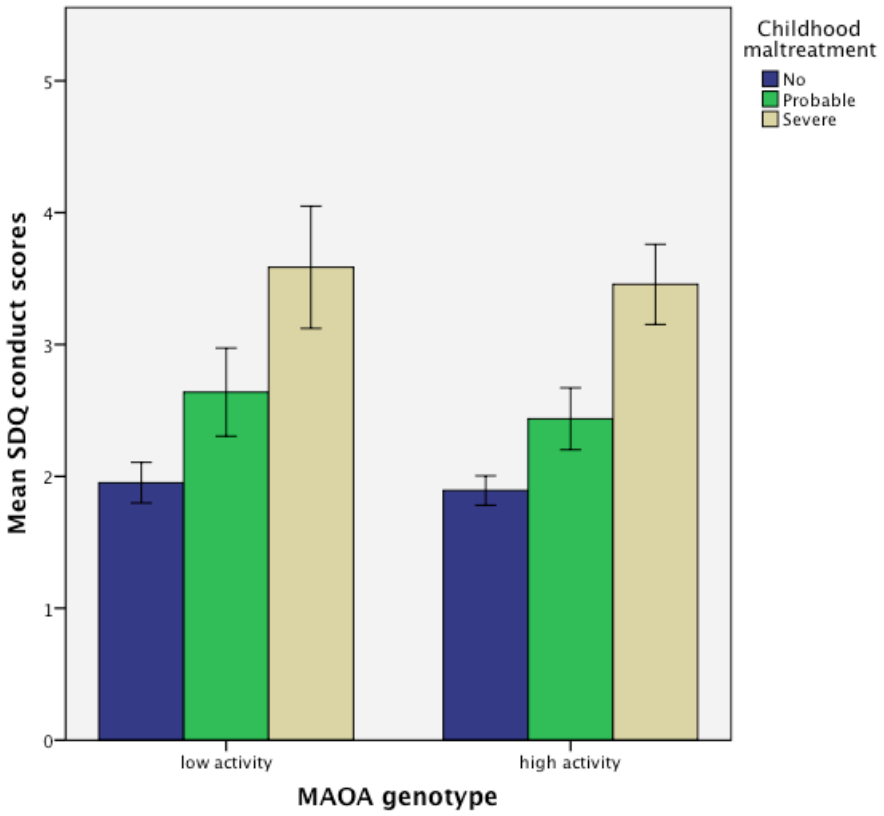

Figure 2. SDQ conduct scores at age 15 according to genotype status and childhood maltreatment status. Error bars represent 95% confidence intervals. SDQ: Strengths and Difficulties Questionnaire; *MAOA*: monoamine oxidase A gene.

8. Considerações finais

A adoção de uma perspectiva global para a compreensão e para a ação no que diz respeito a problemas de saúde tem se consolidado como uma estratégia não apenas promissora, mas também necessária. Uma primeira agenda de saúde global, focada em problemas infecciosos, resultou em um aumento da expectativa de vida. Embora ainda esteja incompleta, sobretudo no que diz respeito à saúde de crianças e adolescentes em países de baixa e média renda, essa primeira agenda fez com que uma segunda agenda se tornasse necessária: as doenças crônicas não-comunicáveis impactam hoje não apenas países de alta renda, mas representam também uma carga substancial de doença em países como o Brasil (Schmidt et al., 2011).

Uma terceira agenda de saúde global surge com o reconhecimento de que transtornos mentais não são construtos restritos à realidade de países ricos e de que seu tratamento não é e nem deve ser encarado como um luxo. Conforme argumenta Vikram Patel, o entendimento de que os transtornos mentais são 'reais' foi acompanhado por quatro elementos-chave para a consolidação do campo da saúde mental global como uma disciplina (Patel et al., 2012). O primeiro foi a demonstração da forte associação entre transtornos mentais e fatores sociais como pobreza, violência, conflitos e desastres naturais. O segundo foi o desenvolvimento da metodologia DALY, uma métrica que permitiu a combinação de dados de morbidade e de mortalidade e facilitou a equiparação dos problemas de saúde mental em relação aos demais problemas de saúde. Além disso, as inter-relações entre transtornos mentais e demais problemas de saúde confirmam a ideia de que não há saúde sem saúde mental.

Em terceiro lugar, a publicação de estudos evidenciando a eficácia e a custo-efetividade de uma gama de intervenções psicofarmacológicas e psicossociais vem demonstrando que o tratamento de transtornos mentais em países de baixa e média renda é possível. Por último, porém não menos importante, a negligência por parte de governos e outras instituições responsáveis pelos cuidados de pacientes com problemas de saúde mental – inclusive ferindo direitos humanos básicos – fazem da promoção da saúde mental global uma obrigação moral.

As origens desenvolvimentais dos transtornos mentais da vida adulta e as consequências em longo-prazo dos transtornos mentais na infância e adolescência não deixam dúvidas de que a saúde mental global deve começar cedo na vida. Tendo em vista que os transtornos neuropsiquiátricos estão entre as principais causas de incapacidade nas primeiras décadas de vida e que 90% dos jovens vivem em países de baixa e média renda, ações dirigidas a essas populações representam uma janela de oportunidades em termos de redução da carga global de doenças.

Entende-se hoje que os grandes avanços conseguidos em termos de aumento da expectativa de vida no mundo foram obtidos a partir da redução dos riscos aos quais as crianças são expostas. De 1960 a 2007, observou-se uma redução de 20 milhões para 9,2 milhões de óbitos infantis por ano (ou, ajustando para o crescimento da população mundial, de 180 para 72 óbitos para cada 1.000 nascidos vivos) (Unicef, 2007). O desafio para a saúde mental global de crianças e adolescentes é identificar fatores-alvo e estratégias que permitam uma conquista semelhante, reduzindo a incidência e as consequências dos transtornos mentais.

De fato, ações complexas serão necessárias para modificar as realidades onde os recursos são escassos. É nesse sentido que investimentos em ciência e tecnologia se

mostram essenciais, com destaque para a pesquisa com inspiração global e de relevância local que possa inovar na oferta e na implementação de serviços de saúde. Novamente, dados acerca da redução da mortalidade infantil em países de baixa e média renda podem ser úteis na medida em que demonstram que, mesmo em períodos de grande crescimento econômico, a difusão de tecnologias e as melhorias educacionais foram mais relevantes do que o acréscimo na renda para explicar a variação nas taxas de mortalidade entre os países (Jamison et al., 2006).

Ações são necessárias para reverter a escassez de pesquisas de qualidade sobre a saúde mental de crianças e adolescentes em países de baixa e média renda. Uma das estratégias para modificar este cenário tem sido a força-tarefa da *World Psychiatric Association* (WPA) para disseminação de pesquisa de países de baixa e média renda. Ao realizar oficinas em reuniões científicas da WPA na Europa, na Ásia e na América do Sul, esta iniciativa tem buscado promover a capacidade editorial em países com reduzida tradição de pesquisa em psiquiatria (ver anexo #3 para detalhes). É fortalecendo toda a cadeia de produção científica – do delineamento de estudos à publicação em periódicos indexados e relevantes – que a mudança no cenário da saúde mental global poderá ocorrer.

A condução de estudos bem delineados para avançar na compreensão dos fenômenos associados aos problemas de saúde mental é possível em países de baixa e média renda. Assim como aqui se demonstrou a viabilidade de pesquisar a interação gene-ambiente em relação a transtornos externalizantes na adolescência, outros exemplos bem sucedidos são cada vez mais frequentes na literatura. Um ensaio clínico randomizado por agrupamento que avaliou o impacto de uma intervenção cognitivo-comportamental conduzida por leigos para mães com depressão no Paquistão

identificou benefícios em termos de menos episódios de diarreia e maiores taxas de imunização entre os filhos (Rahman et al., 2008). De modo relevante, em ambos os casos, a integração com iniciativas de saúde já existentes (uma coorte de nascimentos já na adolescência e um sistema comunitário de saúde receptivo) foi essencial para a realização dos projetos.

Não há dúvidas de que a ideia geral de que inter-relações entre genes e ambientes subjazem os fenômenos de saúde e de doença mental faz todo o sentido. Mesmo com probabilidades *a priori* reduzidas, estudos realizados em países de alta renda sugeriram o envolvimento de fatores genéticos e ambientais específicos para na gênese de transtornos mentais. A ocorrência preferencial de resultados positivos na literatura da última década, entretanto, sugere a ocorrência de um forte viés de publicação na área (Duncan & Keller, 2011).

No caso dos transtornos externalizantes, além das diferenças metodológicas em termos de definição de variáveis, delineamento de estudos e análise de dados, outros fatores também são importantes para a compreensão da heterogeneidade dos achados. Avanços no estudo da psicopatologia desenvolvimental – que, neste caso, pode envolver sintomas de hiperatividade mais precocemente, encadeados a sintomas de oposição e de conduta, com ou sem uso problemático de substâncias associado – nos ajudarão a elucidar os mecanismos associados à ocorrência destes transtornos mentais.

A justificativa para uma perspectiva global em relação à saúde vai além da replicação ou não de estudos em países de baixa e média renda. Os efeitos principais encontrados para os fatores de risco ambientais (tabagismo materno e maus tratos na infância) certamente reforçam a necessidade de políticas públicas na área. Mais do

que isso, contudo, evitando-se a chamada cegueira epidemiológica – como a que ocorreu em relação à vacinação da varíola, praticada na Ásia por muito tempo, mas que sofreu barreiras importantes para ser adotada na Europa – pode-se chegar a uma visão abrangente acerca dos problemas de saúde mental de crianças e adolescentes, o que inclusive pode proporcionar uma compreensão inovadora de tais fenômenos. A tarefa certamente é difícil, porém potencialmente recompensadora, como nos lembra a introdução de um texto recente dirigido àqueles que pretendem se aventurar no campo da saúde global (Bodnar, 2011, p. 227):

> *So you think you want to save the world. Good for you. Here is a bit of advice:*
>
> *Wanting to help is not sufficient. First, you need to get informed. You are not the first to try, and those who came before you left a complex legacy. One efficient person cannot operate efficiently in an inefficient system, and most who quit burn out rather than fade away. Still, there are many low-hanging fruit, and you can make a difference in people's lives. It is far more difficult to make a difference in the system – most never do.*
>
> *Are you still interested? Then make it happen.*

9. Anexos

Anexo #1. Processo de seleção de temas para a edição especial da revista *The Lancet* com foco em saúde mental global

Summary Report:

Lancet Series 2011 – Global Mental Health

Results of the Call for Themes

December 2009

Prepared by:

Lancet MGMH Working Group

Ritz Kakuma, Christian Kieling, Crick Lund and Neerja Chowdhary

THE LANCET

Movement for Global Mental Health

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Introduction

The first Global Mental Health Summit was held in Athens in September 2009, on the second anniversary of the landmark Lancet series on global mental health. The summit drew together a variety of stakeholders (mental health professionals, researchers, decision makers, mental health care users) for a one-day meeting to discuss progress, challenges, and strategies for the future in closing the treatment gap for mental health, neurological and substance use disorders worldwide.

Editors of the Lancet and the Movement of Global Mental Health subsequently announced plans for a series on global mental health to be released at the next Global Mental Health Summit in 2011. The first series had aimed to address the treatment gaps for mental disorders by presenting the evidence on the global burden of mental disorders, the scarcity of mental health resources, effectiveness and cost-effectiveness of treatment interventions, the capacity of health systems to effectively deliver mental health services, and challenges for reform and scaling up of services. The second series provides an opportunity to present evidence for priority themes that were not addressed in the first series (many of which have direct implications for the ability to scale up services), track progress made since 2007, and highlight challenges that still need to be overcome.

In line with the vision of the Movement for Global Mental Health, the innovative approach of this initiative is the involvement of a wide range of stakeholders in the development of the Series. This will be facilitated by providing opportunities for stakeholders to have their say in the themes to be covered, inviting stakeholders to participate in the development of the papers, and keeping the public informed throughout the process.

Methods

In September 2009, the Lancet MGMH Working Group was formed to coordinate the development of the 2011 series on global mental health. The Working Group drafted a Call for Themes to invite the public to submit ideas and suggestions for topics to be included and how it could be developed. The Call was posted on the Movement for Global Mental Health website and in the Lancet in early October and the deadline for submissions was November 30th, 2009 (Appendix 1).

Over the course of 2 months, 80 emails from over 100 individuals (several of whom made joint submissions) were sent to the Movement for Global Mental Health. Proposals were submitted from across the globe[a] and represented a wide range of stakeholders including service users, caregivers, policy makers, researchers, service providers, media personnel, NGOs, international agencies, and funding agencies.

With multiple ideas suggested by many respondents, a total of 170 independent suggestions were made. These suggestions were then reviewed and categorized into 24 themes (Box 1; individual suggestions presented in Appendix 2) by the Working Group members, who then independently rated and ranked the themes in order of priority[b]. Ratings were collated and discussed among the Working Group members to finalize a list of 8 themes for consideration by the Editor of the Lancet. The decision to select 8 themes was based on the format of the first series and the assumption that 4 - 6 papers may be selected.

[a] Afghanistan, Australia, Bangladesh, Belgium, Brazil, Canada, China, Croatia, England, India, Iraq, Ireland, Japan, Nepal, Netherlands, New Zealand, Norway, Pakistan, Peru, Scotland, Singapore, South Africa, Sweden, Switzerland, Uganda, USA

[b] Details available upon request

The criteria used to rate the 24 themes were based on 1) whether or not it was covered in the 2007 series; 2) their importance for inclusion again to track progress; 3) the extent to which the perspectives of all stakeholders can be addressed; and 4) their level of public health importance. This last criterion included consideration of the magnitude of burden and/or the opportunity for large scale impact of an article on that particular topic (Appendix 3).

Box 1. List of the 24 themes suggested by respondents

Numbers of suggestions per theme are provided in brackets

- Burden / Problem identification (3)
- Child and adolescent mental health (11)
- Climate change and mental health (2)
- Cross-border medical tourism (1)
- Diagnosis, treatment and cultural diversity (13)
- Diagnosis - Validity of DSM or ICD across settings (1)
- Elderly mental health (2)
- Funding (2)
- Human rights of persons with mental disorders (10)
- Increasing human resources for mental health /Capacity building (21)
- Mental health and physical health/illness (3)
- Mental health care in humanitarian crisis contexts (10)
- Mental health policy and systems (5)
- Mental health promotion and prevention, including early detection/intervention (9)
- Packages of care or evidence for interventions by disorders (3)
- Packages of care across life continuum (1)
- Recovery / Resilience (4)
- Social determinants of mental health (11)
- Specific interventions (6)
- Stakeholder partnerships/collaboration (12)
- Stigma and mental health (7)
- Update on scaling up services for mental health - Case examples (4)
- Update on scaling up services for mental health - Global review of progress (23)
- User-friendly technologies, tools and scales for LMIC settings (6)

Recommendations

Primary papers for inclusion in the Series

The recommendations of the 8 themes for inclusion in the next Series are presented in this section, in priority sequence, each with the rationale for its importance and a possible outline of the content of the review. In addition to the criteria used in ranking the themes, additional information available amongst the Working Group members of other current and upcoming initiatives related to global mental health were considered in prioritizing the themes.

All 8 themes are critical issues that deserve separate and focused attention. Together, they provide a holistic picture that includes an update on progress and ongoing challenges since the 2007 Series, fills important gaps, and demonstrates the need for an inter-sectoral and inter-disciplinary approach in developing innovative and effective strategies to strengthen mental health systems, provide services, educate communities, and improve the lives of persons living with mental health problems.

1. Update on Scaling Up Services for Mental Health

Rationale

The Lancet 2007 Series on global mental health concluded with a Call to Action for scaling up mental health services worldwide with a particular focus on in low- and middle-income countries (LMICs), for protecting the human rights of persons living with mental disorders, and for more research in LMICs to inform this process.[1] The Series was launched in numerous countries worldwide and the Call to Action has been responded to in many settings. The Movement for Global Mental Health was formed in response to this Series with the specific goal of facilitating the implementation of the Call to Action in LMICs.

An update on efforts to scale up services, progress that has been made, and challenges that have been experienced in various settings will provide some indication of the impact of the 2007 Series (and the Movement) and an opportunity to refine the Call to Action for the future. Furthermore, successful models in the scaling up process such as integration of mental health with primary care, task shifting strategies and/or implementation of monitoring and evaluation indicators could provide a blueprint for those looking to initiate the scaling up process. An example of such an initiative is the World Health Organization mental health Gap Action Program (mhGAP) which outlines ways in which mental health problems can be effectively addressed in LMICs.[2]

Outline

This theme can include the following:

- ❑ Development of mental health policies and systems in LMICs
- ❑ Increased resources for mental health in LMICs
- ❑ Community mental health services including primary health care
- ❑ Specific case examples of successful scaling up models at national and/or regional levels
- ❑ Global initiatives such as the WHO mhGap program
- ❑ Packages of care such as the series of papers published in PLoS medicine this year
- ❑ Research evidence in high priority areas identified in the 2007 Series

2. Human Rights of Persons with Mental Disorders

Rationale

Individuals with mental health, neurological and substance use disorders continue to face appalling violations of their human rights in society including civil, political, economic, social and cultural rights. For over 60 years, there have been international systems in place to protect the human rights of people worldwide and numerous declarations, treaties and principles have been produced. The Universal Declaration of Human Rights (1948) states in Article 25(1) that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control." According to the Constitution of the World Health Organization (1948), "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmty". The Declaration of Alma Ata (1978) proclaimed "the need for urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all the people of the world." Yet the protection of those living with mental disorders remains grossly neglected, even by the Human Rights community.[3]

Despite the wealth of evidence to demonstrate the systematic exclusion of persons living with mental disorders from society, very little progress has been made in addressing this issue. In many parts of the world, people with mental disorders continue to lose their right to liberty and freedom from torture, face inhumane and degrading treatment in society, and lose access to basic services such as education, employment, housing, and health care. Although advances have been made in developing mental health policies and legislations, in most settings, implementation remains challenging and users of mental health services continue to be treated under inhumane conditions.

Inclusion of this theme in the Lancet Series 2011 on GMH would contribute to the field of global mental health in the following ways. First, it would provide the current evidence on the scope and magnitude of human rights violations experienced by persons with mental disorders. Secondly, it can address the implications of the UN Convention of the Rights of Persons with Disabilities (both globally and regionally) and the use of various legislations as tools to enforce human rights. Thirdly, it provides the opportunity to address the need to strengthen collaboration with the Human Rights community and promote active participation of persons living with mental disorders in developing future strategies to close the treatment gap and ensure effective participation and inclusion in society.

Outline

The following components could be included under this theme:

- ❑ Evidence on the scope and magnitude of human rights violations experienced by persons with mental disorders in the community and within the heath care system
- ❑ Review of the human rights declarations, treaties and principles in the context of mental health and review of mental health legislations in the context of human rights
- ❑ Case examples of progress and challenges in addressing human rights in several settings
- ❑ Recommendation of strategies to eliminate human rights violations

3. Social Determinants of Mental Health

Rationale

This theme addresses a crucial predictor of mental health outcomes in low and middle-income countries. Social determinants refer to a range of social and economic factors that have been shown to be associated with mental health status in LMICs. These include poverty, education, housing, socio-economic status, social class, employment and food security.[4-9] Although precise causal mechanisms of the relationship between these social determinants and mental health have not been identified in LMICs, there is reasonable evidence that they interact in a vicious cycle, which increases the risk of mental disorders among poor and marginalised groups in society, and in turn, increases the likelihood that those with mental disorders will slide into, or remain in poverty.[10,11] Dedicating a review article to the social determinants of mental health in the Lancet Series 2011 on GMH would mark a significant contribution to the field in several ways. Firstly, it could provide a hitherto unpublished review of the evidence regarding the strength and consistency of the association between a variety of social determinants and mental health outcomes in LMICs. Secondly, evidence for the link between mental ill-health and poverty would strengthen the case for the inclusion of mental health on international development targets, such as the millennium development goals (MDGs), and other international development targets after 2015. Thirdly, this evidence could lay the platform for interventions that address these social determinants at a population level through health promotion and primary prevention. Finally, such a review article could potentially contribute to further understanding of the causal mechanisms of the relationship between mental health and socio-economic factors in LMICs.

Outline

An article on social determinants of mental health could cover the following aspects:

- A review of the epidemiological literature in LMICs, documenting the associations between a variety of social determinants and mental health outcomes.
- Development of a conceptual framework for understanding the relationship between social determinants and mental health status in LMICs.
- Recommendations to governments and development agencies regarding the steps that need to be taken to address the social determinants of mental health, and include mental health in national and international development targets.

4. Increasing Human Resources for Mental Health / Capacity Building

Rationale

A key challenge in addressing global mental health and responding to the Call to Action, particularly in LMICs, has been the insufficient capacity at all levels of the system to implement such actions. There are shortages in health professionals to provide care, inadequate collaborations with NGOs, CSO and alternative care providers such as traditional healers and community health workers. There is ignorance and discrimination within health systems that have a significant negative impact on the availability, accessibility, and quality of care. Policy makers are often unaware of the negative societal impact of neglecting mental health services, or the benefits in improving both mental and physical health if they provide effective services. Despite recognizing that mental health users and caregivers must participate in all levels of the mental health system, many lack the necessary knowledge and skills to maximize their impact and are often ignorant of their capacity to participate. Epidemiological data on mental disorders, mental health information systems, and monitoring and evaluation of existing services are crucial to track progress, yet there are not enough skilled mental health researchers to produce such evidence.[12] Furthermore, there are very few training programs to gain research skills and to learn competencies for effective knowledge translation and almost non-existent financial support for students interested in enrolling in programs for mental health research. The scarcity of indexed journals with a focus on LMICs also represents an ongoing major obstacle to the enhancement of the international and multicultural aspects of psychiatric research.[13] Though the first Series addressed strategies for scaling up services, there was inadequate attention on the need to focus on capacity building initiatives to increase the human resources among all stakeholders in the mental health care system. There is a gap in the global mental health literature with regards to the need and strategies for strengthening human resources for mental health globally. Given the increasing attention and resources flowing into global mental health (a potential outcome of the first Lancet series?), there must be skilled people on the ground in all components of the mental health system to successfully implement the Call to Action. The Lancet Series 2011 on GMH can play a key role in ensuring that this urgent need is recognized and responded to.

Outline

A paper on increasing human resources for mental health could address the following:

- ❑ A review of the literature on strengthening health systems overall and its application for mental health systems (i.e., UNDP framework[14], Global Forum for Health Research [15], World Health Organization framework,[16] Evaluations framework[17])
- ❑ Overview of stakeholders and their roles and required capacities to scale up services
    - Stakeholders: service providers, policy makers, researchers and academic institutions, users and caregivers, NGOs / CSOs, faith based organizations, funders, journals, media and so on. Frameworks provided by the WHO Guidance Package for organization of services, the UNDP and WHO reports on strengthening research and knowledge translation capacity
    - Capacities: Provision of Services, Monitoring and supervision, Monitoring and Evaluation, Research, Mental Health Information System, Knowledge Translation and Exchange, Partnerships, Policy dialogue, inter-sectoral collaboration
- ❑ Effective methods/models of capacity building with indicators of the effectiveness of capacity building initiatives (short term and long term)
- ❑ A call for a global strategy for capacity building

5. Child and Adolescent Mental Health

Rationale

Mental disorders are conceptualized as "the chronic diseases of youth".[18,19] Most child psychiatric research has focused on risk factors rather than on protective factors which decrease the probability of suffering mental health problems.[20] There is increasing interest in the study of early determinants of mental disorders, as well as in the identification of effective strategies to prevent their incidence among at-risk populations.[21] Developmental psychiatry is an interdisciplinary field that attempts to understand typical and atypical development, as well as the origins of developmental alterations and their expression as mental disorders.

So far, however, the vast majority of research initiatives have been conducted in high-income countries, in contrast with the high proportion of children and adolescents in LMICs. Furthermore, the concentration of risk and the lack of promotive factors in these settings require urgent conceptualization and implementation of effective strategies to enhance psychological well-being among this age group. The Lancet GMH 2007 Series, despite addressing some points related to child and adolescent mental health, did not include a paper specifically focused on the topic, which could benefit from a greater coverage in the 2011 series.

Outline

An article on global child and adolescent mental health could address the following topics:

- Prenatal, neonatal, and child mental health care in LMICs
- Evidence-based strategies for early intervention; strategies to promote resiliency among children and adolescents [22,23]
- Access to child and adolescent mental health services
- Awareness about child and adolescent mental health problems among parents, teachers, and the community
- Initiatives designed to introduce tools and methods that promote the healthy development of children and adolescents by creating a cadre of well trained, committed professionals

6. Diagnosis, Treatment and Cultural Diversity

Rationale

The discussion on the applicability, and accessibility and acceptability of current models of mental health care must be put in the forefront in developing strategies for scaling up services for mental disorders. Psychiatric diagnoses are strongly influenced by cultural determinants as they rely on a variety of informational sources and interpretive mechanisms.[24,25] Nosological systems were designed to provide a common language for the classification of mental disorders across the globe; however, they inevitably reflect the context in which they are formalized. DSM and ICD classification systems revolutionized the field of mental health diagnosis by eschewing theoretical explanations in favor of diagnostic reliability.[26] Among other consequences, this has led to an exponential growth of evidence-based approaches to psychiatry, the establishment of DSM and ICD as the key instruments for diagnosis worldwide, and the gross under-recognition of the culture within which psychiatry and mental health is embedded.

Alternative forms of care are increasingly gaining recognition as effective approaches for treatment and prevention. The cultural diversity within and across countries requires that diagnostic systems and packages of care are tailored to each context in a way that reflects the cultural values and traditional systems of life in these settings. For example, through colonization, indigenous populations within high income countries have been stripped of the power to decide their own fate, have had their sense of identities diminished, and lost ties with their land, communities and ancestry. The need to incorporate indigenous approaches in addressing the resulting high rates of mental health and substance use disorders within the low-resource settings within which these populations live often go unrecognized even by the global mental health community. Discussion on the role culture plays in diagnosis and treatment in these setting must be recognized and incorporated when developing packages of care.

Devoting a paper to this theme could make a significant public health impact in both the global mental health community and global health overall. Despite declarations on the importance of cultural factors in diagnosis, inclusion of cultural formulation in clinical assessment remains scarce, mostly limited to accessory recommendations. As the activities to revise both diagnostic manuals are currently underway (with the release of DSM-V and ICD-11 scheduled for 2013 and 2014, respectively), the momentum favors the discussion of how cultural diversity can be integrated into nosologic systems.[27] A call to action for a parallel process to incorporate cultural diversity in identification, diagnosis, and treatment will have a significant impact on the effectiveness of mental health care systems in closing the treatment gaps.

Outline

An article on diagnosis, treatment and cultural diversity could address the following topics:

- ❑ The impact of cultural diversity (both across and within countries, in both HICs and LMICs) in the description, definition, assessment, and management of mental health conditions
- ❑ How data available from LMICs can inform the revision of diagnostic classification systems and planning of services – and, if not available, what field trials might be necessary
- ❑ Reliability, validity, and utility of diagnostic classification systems across cultures, including urban and rural areas, with special focus on the use by primary care professionals[28]
- ❑ Alternatives forms of care across cultures [29]

7. Mental Health Care in Humanitarian Crisis Contexts

Rationale

Mental health problems are a common consequence of violence and conflict and these frequently persist for a long time after the conflict has ceased. Up to a third of adults and children exposed to conflict can experience chronic psychological problems such as PTSD, depression, anxiety, substance use problems and suicidality.[30,31] Conflict and violence occur more frequently in low income settings and the detrimental societal impacts are greater because of the lack of resources to overcome the challenges. Disadvantaged populations such as refugees, women, children, the elderly, and physically and mentally disabled are especially vulnerable to poor health outcomes after disaster or conflict.

Currently, best practices and guidelines are emerging that can assist governments and organizations in addressing mental health issues in low resource settings affected by conflict or disaster. For example, the Inter-Agency Standing Committee (IASC) Guidelines on Mental Health and Psychosocial Support in Emergency Settings offer practical advice for protecting and promoting mental health and psychosocial well-being, including aspects of coordination, monitoring and evaluation, human rights, human resources, community mobilization, health services, and education.[32] Furthermore, the Working Group on Mental Health and Psychosocial Support was convened as part of the 2009 Harvard Humanitarian Action Summit. This Working Group drafted guidelines to focus on ethical issues in mental health and psychosocial research and programming in humanitarian settings.[33] Organizations such as Médicins sans Frontières are increasingly providing mental health care in the conflict and disaster areas in which they work, and research funds being allocated towards the field of trauma and mental health has begun to grow significantly in many countries.

With this increasing body of literature in the field and the recognition of mental health as a basic right of people in conflict settings, the inclusion of this theme in the forthcoming series is timely.

Outline

An article on mental health care in humanitarian crisis contexts could include the following:

- ❑ Review of the impact of trauma on adult and child mental health
- ❑ Package of care for mental disorders in humanitarian settings including innovative strategies and psychological treatments
- ❑ Experience in implementation of IASC guidelines
- ❑ Turning crisis into opportunity – role of humanitarian NGOs in providing relief as well as mobilizing government initiatives for mental health
- ❑ Integration of mental health care when reconstructing health care systems (in the aftermath of collective violence or disasters)
- ❑ Ethical issues in conduct of research in humanitarian settings

8. Mental Health Promotion and Prevention

Rationale

Global economic growth has not translated into global health and well-being.[34] Instead, neo-liberal political economies in high income countries have been associated with increasing wealth and social differentials which contribute to increasing disparities in health and well-being within countries referred to as the 'modernity paradox'.[35] Many LMICs have adopted neo-liberal economic policies as a means to enter the global economy, which have similarly contributed to increasing wealth and social differentials in these countries. In the face of a backlog of disadvantage and a much lower socio-economic base, the challenges confronting people's health and well-being and implications for human development in LMICs is understandably, much greater.

In the 2007 Lancet series on global mental health, little attention was devoted to mental health promotion, with only one paper in the series reviewing the evidence for treatment and prevention of selected mental disorders in LMICs.[36] Further, while there is an increasing body of literature on the role of mental health promotion interventions in mediating the impact of poverty on developmental outcomes in early childhood, there is a dearth of literature for other age groups.[37] A broad overview of the evidence base for a range of mental health promotion and illness prevention interventions have been developed by WHO [18,38], but this needs to be updated.

Outline

An article on mental health promotion and prevention could cover the following aspects:

- Review the evidence for developmentally timed micro-level mental health promotion interventions as well as community and policy level initiatives across the lifespan which can mediate the negative influences of wealth and social differentials
- Make recommendations for mental health promotion actions across the lifespan in LMICs

Additional Comments for the Series

During the discussions of the objectives of producing another series and the potential challenges that might have been faced in responding to the 2007 Call to Action, the Working Group felt that next series could take a more intentional approach in providing practical tools to support the readers who want to take action. Our recommendation for inclusion in the Series is to have a list of key tools/resources at the end of each article with either links to the source website or a compilation of the resources electronically on the Lancet or MGMH website. Given the challenges in accessing information and resources in many parts of LMICs, facilitating access to such resources may help initiate action in settings that may otherwise not be able to do so.

Suggestions for Commentaries

Any of the above themes that are not considered by the Lancet as full papers could potentially make a significant contribution as commentaries or short papers in the Series. In addition, the Working Group identified the following themes for consideration as commentaries or short papers.

Climate Change and Mental Health. The impact of climate change on health is a priority theme within global health and the November 25th 2009 issue of the Lancet focused on the role of public health in addressing climate change. Although the potential negative impact of climate change on mental health can easily be imagined, the research in this area is still in its infancy. A commentary could address issues such as the impact of natural disasters, competition for resources and propose strategies for implementing environmentally friendly change interventions. This is a topic that should be highlighted in the next Issue as an important emerging topic that will have significant public health impact in the foreseeable future.

User-friendly technologies, tools and scales for LMIC settings. There were some suggestions of addressing the need for tools, scales and technologies that are applicable in LMICs. The aim of this paper would be to present existing innovative and inexpensive technologies and tools that fill the gap or compliment more costly human resources. The emphasis would be on the need for culturally appropriate tools and diagnostic instruments that are user-friendly and sustainable. Examples suggested by the respondents include computational intelligence to utilize low-cost devices for clinical support, CAGE questionnaire for alcohol problems and Humanitarian and Emergency Setting Perceived Needs Scale.

Elderly mental health. The need for strengthening mental health services for the elderly in LMICs is a grossly neglected area. Infectious diseases and maternal and child health conditions and their impact on global burden measures such as life expectancies and DALYs have led to a worldwide neglect of the mental health needs of the elderly population in LMICs. As in higher income countries, use and need for health services in LMICs increase with age and are also greater among persons with mental disorders than those without. The psychological impact of the growing number of HIV orphans on the grandparents also deserves attention. Though perhaps not as one of the main papers, a commentary or short paper highlighting the mental health challenges and service needs of this population would make an important contribution to the Series.

Recovery / Resilience. Recovery and resilience are important themes that deserves emphasis for various reasons. From a stigma and discrimination perspective, the notion of the hope for recovery is fundamental issue that helps persons with mental disorders cope with their condition and counteract the myth that people living with mental disorders will be ill for the rest of their lives

(and therefore rendered worthless). These two concepts also demonstrates the need for a shift in thinking among all stakeholders from only focusing on identifying and changing risk factors to discovering protective factors that prevent or minimize the impact of mental disorders, facilitate recovery, and promote mental health. It also provides a framework for addressing resilience in the context of chronically stressful environments, the notion of 'distress' on the continuum of psychological well-being, as well as disorder and adaptation in challenging environments.

Themes Not Recommended for Inclusion in the Series

Of the 24 themes, 6 were combined with other themes and another 6 were not rendered necessary for inclusion in the Lancet Series 2011 on GMH and brief explanations for these decisions are provided below.

Diagnosis - Validity of DSM or ICD in different settings. The issue of diagnosis of mental disorders and the applicability of DSM and ICD classification systems across different settings is an important discussion that needs to take place in global mental health and one that did not receive adequate attention in the 2007 Series. Though this could be a standalone paper, given that it is strongly rooted in culture and social contexts, this topic has been combined with the theme of *Diagnosis, Treatment and Cultural Diversity,* described above.

Mental health policy and systems. A theme paper on policy and systems with discussion on the need for government commitments and how various policies and systems are structured in various countries would be useful for readers. This could partially be included in the *Update on Scaling Up Services for Mental Health* theme as well as *Increasing Human Resources for Mental Health* themes, both of which would draw on current initiatives such as the development of the Mental Health Atlas 2010 as a resource.

Update on scaling up services - Case examples. It was felt that case examples of success and challenges in scaling up services would be very useful for readers. These examples could be included in the theme paper on *Update on Scaling Up Services for Mental Health*. That said, the Working Group members thought that the main paper would not provide sufficient space to describe the examples in detail and therefore would suggest that one or two case example could be presented as a commentary where sufficient information is provided for readers to gain a better understanding of strategies to take action.

Packages of care across life continuum. The continuity of care across the lifespan is an important issue that should be addressed in the Lancet Series 2011 on GMH but was not considered a priority as a standalone paper relative to the other themes suggested by the respondents. This issue has also been addressed to some extent in a recent issue of PLoS Medicine, which reviews packages of care for 6 key mental health, neurological and substance use disorders. This topic can be embedded in several of the 8 themes proposed above including *Child and Adolescent Mental Health*, *Update on Scaling Up Services for Mental Health*, and *Mental Health Promotion and Prevention*.

Stakeholder partnerships/collaboration. There is increasing acknowledgement for the need for a strong inter-sectoral and inter-disciplinary approach to meet the needs of persons with mental disorders and commitment for collaboration by all stakeholders is necessary to develop the most contextually appropriate, cost-effective, feasible and appropriate system for providing care and promoting mental health. It is a cross-cutting theme across all of the above-mentioned themes and a particular component should be dedicated to present this issue within the *Update on Scaling Up Services for Mental Health* as well as *Increasing Human Resources for Mental Health* themes.

Stigma and mental health. Stigma and discrimination continue to have significant negative impact on persons with mental disorders and urgent action is required worldwide to combat the challenges faced in the community, health care systems and governments to meet treatment needs and stop social exclusion. Though the body of evidence on stigma and mental health is growing rapidly, only a small proportion of this is from LMICs. Rather than a separate theme, the Working Group members suggest this to be included as a cross-cutting issue across the 8 suggested themes, with a particular emphasis within the *Human Rights of Persons with Mental Disorders* theme.

Burden / Problem identification. The evidence on prevalence of mental health problems, associated factors and burdens was a theme that was adequately addressed in the first series and Working Group members did not think it would make a significant additional contribution to recommend it for the Lancet GMH 2011 Series.

Mental health and physical health/illness. Evidence on the association between mental health and physical health was adequately presented in the first series and would not have a significant added value in including this in the Lancet GMH 2011 Series.

Specific Interventions. Some respondents suggested including specific interventions such as community therapy, reality therapy, pharmacotherapy, physical activity and home-based programs for cost-saving or cultural reasons. The evidence base for many key interventions in LMICs was thoroughly addressed in the 2007 Lancet GMH Series, and there are not likely to be substantial additions to this field in the subsequent 4 years. If appropriate, some of these interventions could be addressed in the *Update on Scaling Up Services for Mental Health* paper.

Package of care or evidence for interventions by disorders. Scaling up services for specific disorders was addressed in the 2007 Series and the *Update on Scaling Up Services for Mental Health* theme will address this to a large extent. Furthermore, the Working Group members did not think this was appropriate for the Lancet Series 2011 on GMH because of the recent release of the series of packages of care for specific disorders in the PLoS Medicine journal.

Funding. The need for funding as suggested by respondents was not included because it is a cross-cutting issue that falls within all of the themes and a separate paper focusing on this would not have a significant additional impact. That said, the role of funding agencies, local and international, is a critical issue that should be addressed in the 2011 Series and the Working Group suggests that it be included in the *Increasing Human Resources for Mental Health* and *Update on Scaling Up Services for Mental Health* papers.

Cross-border medical tourism. The issue of access to mental health services in different countries is an interesting topic but not one that the Working Group felt took priority over the other suggestions of the respondents. The potential public health impact of such a topic was also felt to be minimal.

Conclusions

Recommended themes, in order of priority:

1. Update on scaling up services for mental health
2. Human rights of persons with mental disorders
3. Social determinants of mental health
4. Increasing human resources for mental health / Capacity building

5. Child and adolescent mental health
6. Diagnosis, treatment and cultural diversity
7. Mental health care in humanitarian crisis contexts
8. Mental health promotion and prevention

Potential Commentaries:

- Climate change and mental health
- User-friendly technologies, tools and scales for LMIC settings
- Elderly mental health
- Recovery / Resilience
- Case examples of scaling up services

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Appendix 1. Call for Themes

The Lancet has announced plans for a new series on Global Mental Health to be released in 2011, following on from the landmark collection launched in 2007. This new initiative aims to fill the gaps in the last series of papers and track the progress that has been made in closing the treatment gap and protecting the human rights of persons with mental disabilities, particularly in low resource settings.

Do you have any ideas for the themes of the Series? Any thoughts on how it should be developed? Submit your ideas to the dedicated address LancetGMH2011@globalmentalhealth.org **by 30th November, 2009** and please spread the word think may have ideas to contribute in making this a truly collaborative venture.

Appendix 2. List of 24 themes and the corresponding individual suggestions

The individual suggestions that comprise each of the themes are presented below (number of suggestion in brackets; duplicates not included in the lists that follow).

Burden / Problem Identification (3)

- Researches on current mental health problems and associated factors .Take into consideration the developing countries as well as the developed ones
- Prevalence of mental problems in countries
- Cost of mental illness burden at household level

Child and Adolescent Mental Health (11)

- Adolescent mental health
- Child and Adolescent mental health
- Child Mental Health in Iraq
- Child development-informed work
- Developmental psychiatry in developing countries (child and adolescent mental health) (training mental health professionals, med students, teachers, primary health care workers)
- Incarceration of children & Adolescence & Mental health care
- Prenatal, neonatal, & child mental health care in developing countries
- Developmental disorders would benefit re-visiting as to "WHOSE CHILD IT IS AND WHO SHOULD LOOK AFTER IT"
- Mental health of children affected by violence
- Maternal mental health and child development

Climate Change / Environment and Mental Health (2)

- Mental health impacts of climate change
- Environment and mental health - Are there connections between what is happening environmentally and mental health? What is causing fluctuations in mental health conditions such as autism?

Cross-Border Medical Tourism (1)

- Cross-border medical tourism and mental health treatment: choices and challenge

Diagnosis, Treatment and Cultural Diversity (13)

- The different languages we use to discuss mental health issues across cultural contexts
- Culture and mental health (debates between universalism and cultural relativism with implications)
- Role of culture
- Treatment availability and research on mental health among ethnic minorities in low-income countries
- Research methodologies focused at the interface between culture and mental health; increasing knowledge, enhancing diagnostic methods, and improving culturally-sensitive treatments
- Cultural differences and implications in preventing suicide
- Use of non-Western forms of treatment e.g traditional healing practices in Africa
- Exploring conceptual and practical tensions between using a clinical, disorder-focused perspective on mental health and a community oriented, resiliency focused perspective on psychosocial wellbeing
- Mental Health Issues in Indigenous Communities (in middle-high income Countries eg Australia, Canada) - urban residents AND rural and remote residents
- The overall challenges and discoveries of creating indigenous based psychologies

- Research on 'traditional peoples' and mental health
- Mental Health Services in Rural & Remote Settings (in middle-high income Countries eg Australia, Canada)

Diagnosis - Validity of DSM or ICD in Different Settings (1)

- Diagnosis - validity of DSM or ICD in different settings

Elderly Mental Health (2)

- Elderly mental health care in developing countries
- Geriatric mental health, care in nursing homes
- Mental health challenges in later life

Funding (2)

- Finding funding
- Funding/fundraising

Human Rights for Persons with Mental Disorders (10)

- The human rights of people with mental disorders: a global health perspective
- The rights of persons involuntarily detained in mental health facilities and continuing gaps in protecting their rights, especially those who are also intellectually impaired
- The implications of the UN Convention on the Rights of People with Disabilities for national and local efforts to upscale mental health
- Mental Health Law and human rights
- Impact of the UN Convention on the Rights of Persons with Disabilities would be very valuable.
- Human rights
- Human rights and mental health / Legislation
- Human rights and mental health (Development of a Toolkit - ITHACA Toolkit)

Increasing Human Resources for Mental Health / Capacity Building (21)

- Mental health literacy: Ways forward (How to promote knowledge & awareness of mental health issues)
- Movement for mental health: Championing a neglected cause (How to prioritise mental health/lobbying/media advocacy/secure funding)
- Mental health research: Global & regional priorities
- Building relationships in rural resource-poor international communities
- Challenging government
- Capacity strengthening (health professionals and policy)
- Models for training rural mental health workers
- Training and Continuing education for health professionals - updating psychiatrists, collaboration across health professionals
- Engaging in participatory action research in international settings focused on mental health
- Developing mental health training programs for incorporation in rural, resource-poor communities.
- Navigating cultural and language barriers when conducting research in a community that is not one's own.
- Capacity building and support for caregivers
- Track/describe new training programs in GMH that have been initiated since the last series.
- SKILL GAP". skills of psychiatrist and other mental health personnel vary across regions and across centers in a region. in order to provide adequate and appropriate care to patients for varying problems it is essential to address this limitations in skills
- To enhance collaboration, harmonisation and prioritisation of Mental health related activities globally via planned and ongoing mental health research activities and intervention in the different global regions: Africa, Asian, S America, N America

- Increasing human resources for health in all levels of the system (capacity building / indicators for effective strategies)
- UN and mental health
- Bilateral Aid Agencies and mental health
- Health system strengthening and GMH - do global health funding aid development
- Methods of measurement which seek to enable better cross-population comparability
- Research priority setting

Mental Health and Physical Health / Illness (3)

- The relationship between mental health and other health issues can be more emphasized
- Co-morbidity of mental and physical disorders– from common etiological factors to the needs of organizing care in a manner that will ensure that people who suffer from a mental and a physical disorder get care.
- Psychiatric illness and somatic disease

Mental Health Care in Humanitarian Crisis Contexts (10)

- Mental health care in humanitarian crisis contexts - role of key Humanitarian NGOs for addressing conflict and mental health, capacity building, innovative strategies
- Integrating mental health care when **reconstructing** HC systems: how the aftermath of collective violence and disasters has opened in some settings a window of opportunities to design context appropriate mental health care
- PTSD in low income countries
- Best mental health care for war refugees, veterans and persons traumatized by war?
- Conflict and mental health
- Stress on all types of violence
- Impact of trauma on mental health (adult and child)
- Prevention of violence as a risk factor for mental disorders
- Violence and mental health
- Effects of war and its outcomes as imprisonment

Mental Health Policy and Systems (5)

- Development and implementation of mental health policy in LMICs
- Mental health systems: Current & historical dimensions (how different mental health systems developed with current state and implications)
- Access to care
- Commentary on mental hospitals: They are the ancient institutes in field of mental health. They are major resource and important barrier also for any initiative of scaling up
- Pathways to care - Care seeking behaviour of people suffering from mental illness

Mental Health Promotion and Prevention (9)

- Mass gathering medicine (Olympic, Hajj, FIFA) focusing on both prevention and triage at mass events
- Subclinical mentally ill cases will also be interesting and crucial to the stakeholder and policy maker for early detection and prevention in the community
- Strategies for awareness raising
- Positive mental health: Mental health promotion (From the 'well-being' perspective)
- Psychosocial care: Why mental health is everybody's business?(bringing mental health out of the closet and psychiatric jargon to the everyday life of the community)
- Role of media in building public opinion - mental health awareness
- Early intervention for psychosis in LMICs
- Within an ecological systemic framework, reviews the evidence for developmentally timed micro-level mental health promotion interventions as well as community and policy level initiatives across the lifespan which can

mediate these negative influences towards healthy outcomes.

- Makes recommendations for mental health promotion actions across the lifespan in LMICs.

Packages of Care Across Life Continuum (1)

- Scaling up services for mental disorders: packages of care across the continuum of life

Packages of Care or Evidence for Interventions by Disorders (3)

- Common mental disorders for adults
- Severe mental disorders for adults
- Risky use of alcohol in primary care

Recovery / Resilience (4)

- Recovery' from mental disorder - what does recovery really mean? How do we measure it? How do we achieve it?
- Inter-disciplinary review of resilience (shift emphasis from risk factors to resilience)
- Resilience
- Commentary on distress, disorder and adaptation, resilience in chronically or frequently high stress environments

Social Determinants of Mental Health (11)

- Migration & Mental health
- Social determinants of mental health in LMICs
- impact of socio-economic development on psychosocial and mental health problems in China
- Structural factors affecting health, e.g. poverty, transport problems, etc.
- socioeconomic inequalities in maternal mental health outcomes
- Link between child and parental mental health
- A focus on rigorous evidence for contextual determinants of mental disorders, including poverty and structural violence
- Increase the evidence base for treatments (targeted and universal) in contexts of political violence and low resource settings, in particular with regard to promotion of mental health and prevention of mental disorders
- Provides a contextual background of the on the proximal and distal determinants of poor mental health outcomes for people in low to middle income countries.
- Mental health and Development
- Explore mechanisms of and relationships between social connectedness and gender-based violence in conflict-affected and low resource settings

Specific Interventions (6)

- Community Therapy
- Reality Therapy/Choice Theory Focus Groups as a high-quality accessible, affordable community mental health intervention
- The subjective experience of psychotropic medications and how these vary widely trans-nationally in relation to economic resources and cultural orientations. (short piece on culture and medications worldwide)
- Pharmacotherapy related discoveries which can impact the future scenario of mental health
- Physical activity and mental health
- Need for home-based program

Stakeholder Partnerships/Collaboration (12)

- Participation of users of mental health services in initiatives to improve global mental health developments
- Blending traditional healing approaches with other forms of mental health interventions

- Interfacing with NGOs, faith based organizations, medical clinics and government agencies
- Role of NGOs
- Building relationships and working with natural helpers and healers in rural resource-poor international communities
- Building relationships and working with primary health clinics to incorporate mental health
- Building relationships with religious and other community leaders (village chiefs)
- Addressing mental health issues at community level: Fostering linkages between NGOs and Government Sector.
- Broadening the base of the pyramid - how do we develop collaborations among/networks between different role players at community level (e.g. working with and integrating with traditional healers; NGOs/NPOs; etc)
- Family and caregiver involvement in treatment
- Connections between mental health and non-health sectors
- Unity among mental health community

Stigma and Mental Health (7)

- Exploring community perceptions mental illness
- Exploring the differences between perceptions of mental health in rural versus urban resource-poor international communities.
- Role of photojournalism to reduce stigma
- Impact of stigma/lack of awareness in community on treatment seeking / self-management
- Stigma and Depression
- The positive side of having a mental illness - The FUNCTION of bipolar (the positives)
- Rebranding mental health to create a revolution

Update on Scaling Up Services for Mental Health (23)

- Current status and rationale for the recommended interventions for the priority conditions (as separate papers or one overall paper)
- Resources for mental health in developing countries: what progress have we made?
- Negative impact of globalization of the western-style corporate mental health system, without adequate advocacy, information and non-drug alternatives
- Self-care and informal community mental health care. Mental health awareness and mental health education of population in developing countries is of at least the same importance as a development of mental health services.
- Up-to-date core mental health care package which could be implemented at the primary health care level in developing countries
- Functionality and readiness of PHC system for integration of mental health services into primary care, is a major pre-requisite for this integration to be successful.
- Effectiveness of current therapies
- Developing and implementing interventions for mental health concerns in developing and least developed countries
- Exploring the treatment of mental illness in resource-poor settings
- The research and scaling up experiences for high research priority areas identified by Lancet series 2007 eg Severe mental disorders, common mental disorders , substance use disorders and child and adolescent mental health
- No health without mental health: Hope or hype? (lack of significant impact of 2007 series)
- "Ladder of mental health, how far we have gone"
- Detection and treatment of mental health in primary care
- Development, organization and financing of context-appropriate mental health care systems and packages in low resource settings
- Defining primary mental health care with regard to prioritization of intervention strategies
- Contribute to closing the research and practice gap with regard to the development and adaptation of

treatment approaches in low resource settings

- Community mental health services in LMICs
- Community Care for people with Schizophrenia (COPSI study)
- How mental health services are being delivered around the world
- Best practices - what is working? Where is progress being made? Where do we see hope?
- Scaling up mental health services - update on progress (or lack thereof): To publish details of mental health resources within all low and middle income countries, including progress in the last 4 years. WHO can assist in this process since it will be publishing Mental Health Atlas 2010
- Progress made in its mhGAP
- Good practices in closing the treatment gap and what further research is needed

Update on Scaling Up Services for Mental Health - Case Examples (4)

- More examples of so far developed community mental health services in developing countries are needed (not just pilot projects, but on a nationwide level)
- To invite large low and middle income countries (e.g. China, India, Brazil, Indonesia, Bangladesh) to analyse in detail, progress made including overcoming barriers to scaling up services
- Mental Health in Afghanistan
- Scaling up services-a country report

User-Friendly Technologies, Tools and Scales for LMIC Settings (6)

- Innovative technologies for inexpensive diagnosis and tracking of mental disorders (in place or, or to supplement expensive human experts). i.e., computational intelligence to utilize low-cost devices for clinical support
- Need of more user-friendly scales and psychological tests which could be implemented for diagnostic and monitoring purposes of mental problems in developing countries (e.g. like CAGE questionnaire for alcohol problems).
- Developing culturally appropriate assessment tools
- Working with an interpreter to develop surveys that are consistent with the population's understanding and experience of the focus of research.
- Use of technology to deal with lack of professional staff
- Humanitarian and Emergency Settings Perceived Needs Scale

Appendix 3. Criteria used for selection of themes

Criteria used for selection of themes

1. Not covered in 2007 Lancet series

   0=fully covered
   5=partially covered
   10=not at all covered

2. Has been addressed but should be revisited again for progress (something to be tracked over time to gage progress)

   Rating from 0 to 10, where

   0 = Strongly disagree
   5 = Neither agree or disagree
   10 = Strongly agree

3. Opportunity for stakeholders perspective and participation to be covered

   Rating from 0 to 10, where

   0 = Strongly disagree
   5 = Neither agree or disagree
   10 = Strongly agree

4. Public health perspective (should be an important public health issue, i.e., something that presents a serious burden or has an opportunity for large scale impact if interventions are being reviewed for LMICs)

   Rating from 0 to 10, where

   0 = Strongly disagree
   5 = Neither agree or disagree
   10 = Strongly agree

Anexo #2. Material suplementar do artigo #1

THE LANCET

Supplementary webappendix

This webappendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Kieling C, Baker-Henningham H, Belfer M, et al. Child and adolescent mental health worldwide: evidence for action. *Lancet* 2011; published online Oct 17. DOI:10.1016/S0140-6736(11)60827-1.

Webtable 1. Studies on the global prevalence of child and adolescent mental disorders in LMIC

Study	Country	Income	Sample Frame	Diagnostic systems and instruments	Information sources and strategy for combining information	Number of stages	N	Attrition	Age range/ mean (SD)	Prevalence rates (CI/SE)
Mullick & Goodman, 2005	Bangladesh	Low	Regional Community, urban and rural	ICD-10; SDQ & DAWBA	Parents, children (< 11y) and teachers; best estimate	2 stage	922	75	5 -10y	15 (11 – 21)
Anselmi et al., 2010	Brazil	Upper-middle	Regional Community, urban and rural	DSM-IV/ICD-10; SDQ & DAWBA	Parents and adolescents; best estimate	2 stages	4445	84.7	11 & 12 y	10.8 (7.1 – 14.5)
Bilyk & Goodman, 2004	Brazil	Upper-middle	Regional School, urban and rural	DSM-IV; DAWBA	Parents, children (< 11y) and teachers; best estimate	1 stage	519	83	7 – 14y	12.7 (9.8 – 15.5)
Goodman et al., 2005	Brazil	Upper-middle	Regional Community, rural	DSM-IV; SDQ & DAWBA	Parents, children (< 11y) and teachers; best estimate	2 stages	1251	94	5 – 14y	7 (2.3 – 11.8)
Guan et al., 2010	China	Lower-middle	Regional, school, urban and rural	DSM-IV; ISICMD & structured interview designed by authors	Parents	2 stages	9495	NA	5 – 17y	16.22 (15.49 – 16.97)
Fekadu et al., 2006	Ethiopia	Low	Regional, school, urban	DSM-III-R; DICA	Children	1 stage	528	NA	5 – 15y	12.5 for school children; 20.1 for labourer children;[$] 16.5 combined
Hackett et al., 1999	India	Lower-middle	Regional Community, rural	ICD-10; Rutter scales A/B & clinical assessment	Parents	2 stages	1403	95	8 – 12y	9.4 (7.9 – 10.8)
Malhotra et al., 2002	India	Lower-middle	Regional school, urban and rural	ICD-10; CPMS/Rutter B scale & clinical interview	Parents, and teachers; best estimate	3 stage	963	91.7	4 – 11y	6.33
Pillai et al., 2008	India	Lower-middle	Regional Community, urban and	DSM-IV; DAWBA	Adolescent (half sample) and adolescent and parents (half	1 stage	2048	76	12 – 16y	1.81 (1.27 – 2.48)

			rural		sample)					
Srinath et al., 2005	India	Lower-middle	Regional Community, urban and rural	ICD-10; SCL and VSMS/ CBCL & DISC (4-16y) and clinical assessment (0 – 3y)	Parents and children; best estimate	2 stage	2064	90.5	0 – 16y	13.8 (10.6 – 17) for 0 – 3y; 12 (10.3 – 13.6) for 4 – 16y; Combined Prevalence = 12.5
Kasmini et al., 1993 **	Malaysia	Upper-middle	Regional Community, rural	ICD-9; RQC & FIC	Parents; best estimate	2 stages	507	99.6	1 – 15y	6.1
Benjet et al., 2009	Mexico	Upper-middle	Regional Community, urban	DSM-IV; WMH-CIDI	Adolescent	1 stage	3005	71	12 – 17y	39.4 (38 – 40.9)
Abiodun et al., 1993*	Nigeria	Lower-middle	Regional Community, rural	ICD-9; RQC & FIC	Parents	2 stages	200	NA	5 – 15y	15
Goodman et al., 2005	Russia	Upper-middle	Regional School, urban and rural	ICD-10; SDQ & DAWBA	Parents, children (< 11y) and teachers; best estimate	2 stages	448	74	7 – 14y	15.3 (10.4 – 20.1)
Wacharasindhu et al., 2002	Thailand	Lower-middle	Regional, school, urban	DSM-IV	Parent, teacher, child#	2 stages	1480	83	8 – 11 y	37.58
Alyahri & Goodman, 2008	Yemen	Lower-middle	Regional, school, urban and rural	DSM-IV; SDQ & DAWBA	Parents and teachers; best estimate	2 stages	1210	91	7 – 10y	15.7 (11.7 – 20.2)

RQC = Reporting questionnaire for children; FIC = Follow-up interview for children; NA = not assessed or not available; CPMS = Childhood Psychopathology Measurement Scale (Indian adaptation of the CBCL); SCL = Structured Interview Schedule; VSMS = Vineland social maturity scale; ISICMD = Investigation Screening Inventory for Child Mental Disorders; GHQ-12 = General Health Questionnaire – 12 questions version; CDI = child depression inventory

* Although reported as a two stage study, the second stage was not adjusted for the performance of the screening test in the first stage. So, technically it is a one-stage study (second stage = random subsample of the first stage).

** Only screening positives assessed in the second stage.

*** In the first stage, a short version of the KSADS-E with just the screening questions for each disorder was applied.

$ This was a convenience sample.

Not clear how the information from different sources was combined.

When the study reported on prevalence rates from different waves of assessment, we opted for including the prevalence rate of the first wave. When in addition to point prevalence/period prevalence (e.g., 12 month prevalence), lifetime prevalence was also presented, we included point prevalence/period prevalence to make findings comparable since the majority of studies report on this type of rate.

Webtable 2. Descriptions of non-specific preventative interventions in early childhood in LMIC

Reference	Study Design[1]	Sample and Setting	Intervention	Outcomes	Covariates	Findings	Remarks[2]
Cooper et al. 2009 South Africa *Upper-middle income country*	Randomised controlled trial	Mother recruited in late pregnancy from two areas of a peri-urban settlement in South Africa 440 pregnant women randomly assigned to Intervention: n=220 or Control: n=229	Home visiting intervention that provided support for the mother, encouraged sensitive, responsive mother-infant interactions and sensitized the mother to her infant's abilities using the Neonatal Behavioral Assessment Mothers received a total of 16 visits from the antenatal period until the infant was 5 months old	Child attachment Maternal sensitivity Maternal depression	None specified	Significantly more infants in the intervention group were securely attached at 18 months than in the control group. At 6 and 12 months, intervention mothers were more sensitive and less intrusive with their infants (effect sizes = approximately 0·25) Less depressive symptoms among intervention mothers at 6 months.	
Santelices et al. 2011 Chile *Upper-middle income country*	Randomised controlled trial	100 pregnant, first-time mothers (aged 18-40 years) attending urban health centres were randomly assigned to a secure attachment promotion programme or an educational talk group. Secure attachment promotion programme	The secure attachment promotion programme consisted of six 2-hourly weekly group sessions (6 women/group) during pregnancy and four individual sessions lasting 1 hour with each mother-infant dyad at 1, 3, 6 and 12 months focusing on improving maternal sensitivity.	Child attachment between 12-18 months.	None	No significant benefits to child attachment from the secure attachment promotion programme (effect size = 0·17).	Differential attrition with more mother-child dyads lost to follow-up in the control group. Sample was low risk and consisted of middle and lower SES participants.

		(intervention): n=43 and Educational talk (control): n=29 were followed up at post-test	The educational talk consisted of a talk on attachment in the third trimester of pregnancy.				
Walker et al. 2006 Jamaica *Upper-middle income country*	Randomised controlled trial	129 stunted children (< -2z scores Height for Age) age 9-24 months from poor, urban neighbourhoods of Kingston were randomised to 4 groups for 24 months: Supplementation: n = 28 Stimulation: n = 21 supplementation & Stimulation: n = 27 Control: n = 27	Follow up of a randomized trial Supplementation: 1kg milk based formula/week giving 750 kcal, 20g protein daily Control: home visits only Stimulation: Weekly home visits from a trained paraprofessional	At age 17-18 years Anxiety Depression Self-esteem Antisocial behaviour Adolescents were asked about contacts with police, sexual behaviour, use of alcohol and drugs and whether they had been suspended or expelled from school. Parent reports of: Attention deficit Hyperactivity and Oppositional Deviant Disorder.	Hunger Weight for height in regression of antisocial behaviour All other SES and demographic variables not significantly different between groups	No effects of supplementation on any outcome. Stimulation resulted in significant benefits to anxiety, depression, self-esteem and attention deficit with effect sizes of 0.4-0.49 Adolescents who had received stimulation in early childhood were also less likely to be suspended from school ($p = 0.1$) or to be expelled ($p = 0.08$).	
Klein & Rye 2004 Ethiopia *Low*	Quasi-experimental	Families with children aged 1-3 years randomly selected from 2 poor communities in Addis	Intervention involved 'The Mediational Intervention for Sensitizing Caregivers' (MISC). The intervention involves videotaping	Assessed at 3 months, 1 year and 6 years after end of	Not discussed	Benefits reported to: Mother-child interactions (e.g. parent mediation) at all	Limited data is provided so difficult to assess study quality.

income country		Ababa, Ethiopia Each community was allocated to: Intervention: n=49 families or Control: n=47 families	maternal-child interactions and focusing on strengthening the positive aspects of the interaction. Also role plays, presentation of good and bad examples of mediation and promoting generalization. Five home visits (1½ hours each) by paraprofessionals and five group meetings (2-3 hours) were held over a 3 month period.	intervention Mother child interaction at each time point Child behaviour using Preschool Behaviour Questionnare at 6 year follow up		time points At 6 year follow up children in the intervention group were rated by their mothers as: Less hostile and aggressive, Less anxious Less hyperactive and Less distractible than children in the comparison group.	
Walker et al. 2010 Jamaica *Upper-middle income country*	Randomised controlled trial	140 term low birth weight (LBW) infants born in one maternity hospital in Kingston randomly assigned to Intervention: n = 70 or Control: n = 70	Intervention involved weekly home visits for 2 years by community health aides from birth to 8 weeks and from 7 to 24 months of age Play activities were demonstrated to the mother and parenting support and advice was provided. Home made toys, books and household items were used for the play activities Control families were also visited weekly at home and child morbidity data collected	<u>At age 6 years</u> Behaviour using the Strengths and Difficulties Questionnaire	None entered as no variables differed between groups and correlated with outcomes	<u>Behavior:</u> Significant benefits of intervention to total difficulties on the Strengths and Difficulties Questionnaire (effect size=0·4).	

Raine et al. 2003 Mauritius *Upper-middle income country*	Quasi-experimental	All 3-year old children in 2 towns 100 children were allocated to intervention and 355 children matched on key characteristics served as controls. 83 intervention children were followed up.	Intervention involved attendance at specially constructed nursery schools for 2 years. Intervention consisted of 3 main elements: preschool education, nutrition & physical exercise. Control group: attended traditional "petite ecoles".	<u>Age 17 years</u> Schizotypal personality & behaviour problems (both self-report) <u>Age 23 years</u> Schizotypal personality & criminal offending history (both self-report). Court records of property, drug, violence & serious driving offences.	None entered into regressions However, no differences between the groups were found on any of the matching variables	Significant benefits to conduct disorder (effect size = 0·44), psychotic behaviour (effect size = 0·31), motor excess (effect size = 0·38), positive schizotypal personality (effect size = 0·29) and disorganisation (effect size = 0·34) at age 17 years and to self-reported criminal offending (effect size = 0·26) at age 23 years. Malnourished children in the intervention group benefited more for conduct disorder (effect size = 0·63), motor excess (effect size = 0·61) and cognitive disorganization (effect size = 0·71) at age 17 years and on interpersonal deficits at 23 years (effect size = 0·56).	
St-Petersburg-USA Orphanage Research Team. 2008, Russia. *Upper-middle*	Quasi-experimental	Children ages birth- 4 years living in three orphanages. Samples included children with developmental disabilities.	Caregivers in one orphanage given detailed training on early child development and promoting sensitive, responsive, developmentally appropriate interactions, plus the caregiver-child ratio on the wards was increased allowing for more caregiver-child interaction.	Ratings of children's social skills. HOME inventory to assess caregiving behaviors of orphanage	Infant age.	Compared to the training only and control orphanages higher caregiver HOME (Home Observation for Measurement of the Environment) scores, higher infant personal-social scores, higher quality of infant play, more positive affect	Intervention conditions confounded with orphanage. Orphanages selected were the best in St Petersburg and children's health, safety and nutritional needs were adequately

income country			Caregivers in the second orphanage received the same training but there was no change in the caregiver/child ratio. The third orphanage served as untreated controls.	staff. Caregiver-child interactions. Videotaped observations of Infant affect and infant attachment status.		during play, higher quality of dyadic interactions, more differentiated infant affect and significantly lower levels of disorganized infant attachment for the orphanage which had both training and structural changes. The orphanage that had only the training was higher than the control orphanage. in caregiver HOME scores and infant personal-social scores. (effect size differences in 0·35 range).	met. Toys were available to all children. Videotape coders not totally blind to infant group status.
Armecin et al. 2006 Philippines *Lower-middle income country*	Quasi-experimental	6693 children aged 0-4 years on enrollment 4,140 from program areas 2,359 from non-program areas	Comprehensive early child development program integrated using a multi-sectoral approach. Included focus on child health, nutrition and development. Services included centre based services (e.g. day care centers, preschools, health stations) and home-based services (e.g. family day care programs, home visits).	Multiple measures of child development and social-emotional skills		Significant benefits from intervention for cognitive skills (effect size=0·55), expressive language (effect size=1·09), receptive language (effect size=1·43), gross motor skills (effect size=0·79), self-help skills (effect size=0·33) and fine motor skills (effect size=0·65). Significant benefits to social-emotional skills (effect size = 0·55).	

Ozer et al. (2009) Mexico *Upper-middle income country*	Quasi-experimental	Treatment group: 702 children from poor, rural communities that had received conditional cash transfers for 3·5 – 5 years Control group: 243 children from comparable communities who had not received conditional cash transfers.	Intervention involved conditional cash transfers: cash transfers that were contingent on family members complying with requirements to benefit child health and development (e.g. prenatal care, immunization, nutrition & school enrollment) Cash transfers received bimonthly and increased household income by approx 25%	At age 4-6 years: Behaviour problems index Anxiety and depression Aggression/oppositional behaviour	Child age, ethnicity and sex Household SES Demographics of family	Benefits of the conditional cash transfer programme were found for: Aggressive/oppositional symptoms (10% decrease in problems) No benefits were found for anxiety and depressive symptoms or for total symptoms.	Quasi-experimental but care was taken to avoid selection bias. Conducted sensitivity analysis – replicated analysis using propensity score matching and similar results were found.
Fernald et al. (2009) Mexico *Upper-middle income country*	Quasi-experimental	Treatment group: 1093 children from poor rural communities that had received conditional cash transfers immediately = early treatment (in 1st year of life) Control group: 700 children from comparable communities who had received conditional cash transfers 18 months later = late treatment.	Randomised trial Intervention involved conditional cash transfers: cash transfers that were contingent on family members complying with requirements to benefit child health and development (e.g. prenatal care, immunization, nutrition & school enrollment)	Strengths and Difficulties questionnaire at age 8-10 years	Child sex and age. Family demographics and SES.	Fewer maternal reported behavioural problems for children in early treatment group (effect size = 0·14). Amount of cumulative cash transferred associated with fewer behaviour problems.	Large loss to follow up (40%).
Lozoff et al. 2003 Chile	Quasi-	Healthy, full-term, 6-month old infants free of iron-deficiency	Infants who had been randomized to a high or low-iron formula at age 6	At 12 months behaviour rating scale	Demographic variables, SES	Iron supplemented infant showed more positive affect,	

Upper-middle income country	experimental	anemia recruited from 4 working class communities on the outskirts of Santiago. Iron supplemented group: n=1123 No added iron group: n=534	months were compared with infants who received no iron.	and temperament		interacted socially more frequently and used more social referencing. They were more soothable and less tremulous and more likely to resist change.	
Lozoff et al. 2010 Chile *Upper-middle income country*	Randomised controlled trial	Infants with iron-deficiency anaemia and non anaemic infants aged 6 (n= 128) and 12 months (n=149) old from working class communities near Santiago. Intervention: n= 66 at 6 months and n=70 at 12 months.	Intervention involved weekly home visits over 6 months for 1 hour by monitors (professional educators). The intervention focused on improving the mother-child relationship. Iron supplement was also provided. Control group received weekly surveillance visits and iron supplementation.	Behaviour rating scale: object orientation, motor quality, negative affect and positive social responsivenes s.	Sex, birthweight (variables significantly correlated with outcome)	Home based intervention significantly benefited positive social responsiveness among iron-deficient anaemic infants in the 6 and 12 month cohort. No significant benefit of home based intervention on positive social responsiveness among non-anaemic infants.	
Kordas et al. 2005 Mexico *Upper-middle income country*	Double blind randomised controlled trial	602 first grade children attending nine elementary schools in one city Zinc only: n=146 Iron only: n=151 Iron and zinc: n=152 Both: n=153	Intervention involved daily iron supplement (30mg), daily zinc supplement (30mg) or both for 6 months. Supplements were distributed in school by a nurse. In school holidays, tablets were distributed to homes every 2 weeks.	Child behaviour	Child age and sex, SES, and family demographi cs	No significant benefits of supplementation to behaviour.	

[1]Levels of evidence are as follows: Level 1: Systematic reviews and meta-analyses; Level II: Randomised controlled trials; Level III: Non-randomised experiments with concurrent controls (quasi-experimental)

[2]Includes information on limitations of the study reflecting the likelihood that bias, confounding and/or chance have influenced the results (for example, selection bias (e.g. baseline differences between groups), detection bias (e.g. non-blinded assessors), attrition bias (e.g. high and/or differential attrition), inappropriate analyses (e.g. analysis was not intention-to-treat), and/or insufficient details provided in methods to judge study quality).

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Webtable 3. Descriptions of interventions to prevent behavioural disorders in LMIC

Reference	Study Design[1]	Sample and Setting	Intervention	Outcomes	Covariates	Findings	Remarks
Baker-Henningham et al (2009, 2009b) Jamaica *Upper-middle income country*	Cluster randomised controlled trial	5 community preschools in inner-city areas of Kingston with 27 classrooms catering to children aged 3-6 years Children nominated by their teacher as having a behaviour difficulty were evaluated Intervention group: n = 69 Control group: n = 66	Intervention involved teacher training using the Incredible Years Teacher Training programme (7 full-day teacher workshops and monthly classroom consultations) and 14 child lessons on social and emotional skills in each class. Control group received educational materials only	Observations of teacher positives, negatives, commands, promotion of social and emotional skills and teacher warmth. Observations of classwide levels of appropriate behaviour and child interest and enthusiasm. Teacher reported child behavior of high-risk children using the Strengths and Difficulties Questionnaire (conduct problems, hyperactivity, emotional problems, peer problems and prosocial behaviour)	School, classroom, child age	Significant benefits of intervention to teacher positives negatives, promoting social and emotional skills and teacher warmth and classwide levels of appropriate behaviour and child interest and enthusiasm. Significant benefits of intervention were also found for the behaviour of children at high risk including conduct problems (effect size = 0·26), hyperactivity (effect size = 0·36) and peer problems (effect size = 0·71). No significant benefit to prosocial behaviour (p = 0.1) or emotional problems.	Pilot study – small sample size and small number of clusters. Effects of intervention on high risk children's behaviour was by teacher report only.
Mishara & Ystgaard (2006) Lithuania *Upper-middle income country*	Quasi-experimental	Intervention group: 314 kindergarten children (mean age = 6 years at baseline) from 16 classrooms & 11 schools in one city. Control group: 104 kindergarten	24 weekly lessons teaching social and emotional skills to children. Lessons are delivered by class teachers.	Social skills (cooperation, assertion, empathy & self-control) Externalising behaviour Internalising behaviour Hyperactivity Coping strategies	None specified	Benefits of intervention were reported for: Social skills (effect size = 0·17), self control (effect size = 0·57),empathy (effect size = 0·24), coping strategies (effect size = 0·16), externalising behaviour (effect size = 0·44) and	Limited information given on sample selection and limited information on differences between groups at baseline. Measures by teacher and

		children from six classrooms (classrooms chosen from schools with similar socio-economic conditions in same city)				hyperactivity (effect size =0·44). No significant benefits of intervention to internalizing problems.	child report only – no independent observations. Did not control for clustering in analysis. Used one-tail tests for analysis.
Ison (2001) Argentina *Upper-middle income country*	Randomised controlled trial	315 8-12 year old, low SES boys from poor urban areas. 164 with conduct problems and 151 without conduct problems by teacher report. Intervention: 90 boys with conduct problems and 81 boys without conduct problems Control: 74 boys with conduct problems and 70 without conduct problems.	Intervention involved 14 teaching units for 30 mins twice a week.	Child behaviour and self-control rating scale by teacher report. Observations of behavioural scenario.	None specified	Among boys with conduct problems the intervention group significantly benefited on teacher reported outcomes including 5/9 subscales of child behaviour report and the self control rating scale. Intervention group demonstrated improved social skills on behavioural scenario.. Among boys without conduct problems no significant benefits were found for child behavioural scenario or for teacher report outcomes.	Randomisation procedure unclear. Methods used to evaluate child social skills using child behavioural scenario not given. No reliability data provided Duration of intervention unclear (14 units but unclear if one unit was covered / lesson) and process unclear (e.g. group vs individual).
Liu et al. 2009 China *Lower-*	Randomised controlled trial	441 children (aged 7-13 years) with behaviour problems recruited from mental health clinics	Intervention was a social skills training program in groups of 6-10 children for 1 hour each week for	Rutter Parent and Teacher Scale and Child Behaviour Checklist	None specified	Significant benefits to: Neurotic and antisocial behaviour on the Rutter scales by parent and	

middle income country		and primary schools in one city. Intervention n=216 Control: n=225	12 weeks.			teacher report Total problems, somatic complaints and delinquent score on the Child Behaviour Checklist No significant benefits were found to the aggressive behaviour score on the Child Behaviour Checklist.	
Wang et al. 2007 China *Lower-middle income country*	Randomised controlled trial	101 children (aged 7-14 years) with behaviour disorders recruited from a mental health clinic and 2 primary schools in one city. Intervention: n= 50 Control: n=51	Intervention involved 12 weeks of social skills program. Intervention in groups of 6-10 children and was delivered by health education teachers	Rutter Parent and Teacher Scale and Child Behaviour Checklist	None specified	Significant benefits to: Neurotic and antisocial behaviour on the Rutter scales by parent and teacher report Total problems, somatic complaints and oppositional score on the Child Behaviour Checklist.	
Lin et al. 2007 China *Lower-middle income country*	Randomised controlled trial	621 3rd grade children attending 2 elementary schools in one city. Intervention: n= 208 Internal control: n=209 External control n= 204	Intervention involved life-skills education and included 26 hour competence promotion for children and 5 hours parent training	Rutter parent and teacher scale	None specified	Significant benefits of intervention to total problems and antisocial behaviour at home and at school at post-test and 6 month follow up.	
Graeff-Martins et al. 2006 Brazil *Upper-middle income*	Quasi-experimental	2 public schools in an urban city of Brazil with high level of dropout. Intervention was implemented in one	Intervention involved a targeted intervention nested within a universal intervention. Universal intervention involved 1) two full-day	School drop-out rates (absence from school for 8 consecutive weeks) and absenteeism (excluding children who had dropped out)	None specified	Intervention led to reduced drop-out rate (3·85% versus 9·54% in control school) Intervention led to less absenteeism (8·21 days/student versus	No control for clustering. Only 2 schools included. Results were compared with drop out and absenteeism in previous year

country		school. No activities were undertaken in the other school.	workshops with teachers on child development and identification and management of emotional and behavioral disorders, 2) 5 letters sent home over the school year addressing school dropout, 3) Three meetings with parents over the school year, 4) modifications to the school environment (e.g. music context, improving environment), 5) telephone helpline one morning a week and 6) structured cognitive intervention over 1 school day for 7th grade students on the advantages of staying in school. Targeted intervention was for children who were 10 consecutive days or more out of school and involved: 1) mental health assessment and 2) referral for identified problems.			11·12 days/student) (effect size = 0·64)	and the drop out and absenteeism rates for the control group increased (i.e. differences were not due to a decrease in the intervention school).
Wu et al. 2002 China	Cluster randomised controlled	Males aged 15-49	Intervention involved community involvement in	Drug use initiation	Included age, marital status,	Greater reduction in drug use initiation in intervention villages	

Lower-middle income country	trial	years Two communities were matched and randomly allocated to intervention or control. Intervention: n=748 (from 19 villages and 10 schools) Control: n=559 (from 19 villages and 9 schools)	designing intervention strategies. School programmes, workshops and meetings with village leaders and others, literacy classes and agricultural classes were provided. Intervention was based on a prior study of the risk factors associated with initiation of drug use among villagers in China. Intervention relied on existing personnel and resources in the villages (e.g. village health workers, women's groups, schools etc.)		ethnic group and education in analysis	versus control villages. Attributable risk reduction was 0·99%. Reduction was highest among males aged 15-19 years, single men, illiterate men and the Jingo minority.	

[1]Levels of evidence are as follows: Level 1: Systematic reviews and meta-analyses; Level II: Randomised controlled trials; Level III: Non-randomised experiments with concurrent controls (quasi-experimental)

[2]Includes information on limitations of the study reflecting the likelihood that bias, confounding and/or chance have influenced the results (for example, selection bias (e.g. baseline differences between groups), detection bias (e.g. non-blinded assessors), attrition bias (e.g. high and/or differential attrition), inappropriate analyses (e.g. analysis was not intention-to-treat, clustering not controlled for in cluster-randomised trials), and/or insufficient details provided in methods to judge study quality).

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Webtable 4. Descriptions of interventions to prevent emotional disorders in LMIC

Reference	Study Design[1]	Sample and Setting	Intervention	Outcomes	Covariates	Findings	Remarks
Jordans et al. 2009	Systematic review	Identified 12 treatment outcome studies and 54 descriptions of interventions for children affected by war in low and middle income countries. Treatment interventions included 2 RCTs, 3 controlled trials, 6 non-controlled or cohort studies and one case study.	For 66 studies: 18.6% target general well-being 30% target psychosocial distress 18.6% target psychopathology 24.3% target multiple foci	Examined focus of intervention and effect sizes. Also looked for evidence of cultural adaptations and evaluation components		For 12 treatment studies: Mostly involve group interventions and most focus on PTSD symptoms. 11/12 show positive treatment effects (symptom reduction or increased protective factors) and 8 of these show benefits on multiple indicators. Two reported sustained follow up (after 9 and 12 months). 3 studies found no effect of one intervention (an emotion-focused coping, creative workshop approach and group crisis intervention) 3/12 studies identified negative outcomes Effect sizes for controlled studies	Authors conclude: poor quality of studies leads to a lack of empirical evidence for the effectiveness of interventions for children in war. Effect studies are skewed towards targeting PTSD symptoms and most come from countries that were formerly Yugoslavia. Multi-level, community approaches have not been evaluated. Little information on what cultural adaptations are desirable and how to tailor interventions to the cultural context.

						range from 0.27 to 0.54. 68% of publications mention cultural adaptation of treatment and/or outcome measurement but details are minimal	
Dybdahl (2001) Bosnia *Upper-middle income country*	Randomised controlled trial	Internally displaced mother-child dyads. 5-6 year old children (mean = 5·5 years) living in a multiethnic industrial town in Northern Bosnia. Intervention group: n= 42 Control group: n=45	Intervention involved psychosocial intervention program plus medical care. Psychosocial intervention involved weekly group meetings (five mothers/group) for five months and one home visit. Topics covered involved child development, mother-child interaction, trauma and coping strategies. Control group received medical care only.	Mother reported social support, post-traumatic stress disorder, and well-being and mother reports of their child's anxiety/ sadness, withdrawal and psychosomatic symptoms, child concentration problems and description of child. Child reports of depression and well-being. Psychologists' observations of child problems and child strengths.	None specified	Significant benefits of intervention to mothers' social support, mothers' post-traumatic stress disorder symptoms, mothers'well-being and psychologists reports of child problems Trend for improvement ($p<0·1$) for mother report of child anxiety and sadness and description of child. Younger children reduced problem scores more than	One tailed tests were used to compare groups at post-test. Some differences between the group at baseline were not controlled for in the analysis.

						older children. Tendency for girls to reduce mother-reported problem scores more than boys	
Khamis et al. 2004 Palestine *Lower-middle income country*	Quasi-experimental	Children and adolescents aged 6-16 years old. Stratified random sample of 840 children attending schools across the West Bank and Gaza. Intervention: n=244 6-11 year olds; n=136 12-16 year olds Control: n=162 6-11 year olds; n=122 12-16 year olds	Intervention involved a 5- week 15 sessions classroom or camp – based intervention involving structured expressive-behavioural activities. The following themes are covered: 1. Safety and control 2. Stabilization and awareness 3. Trauma narrative around thoughts and reactions during and after danger 4. Resiliency identification 5. Future orientation and resource installation	Prosocial strengths Coping style Sense of hope Behaviour difficulties (Strengths and Difficulties Questionnaire) Anxiety Post-traumatic stress symptoms Causal attribution of events Perception of oneself/attribution of meaning to events Self-esteem	None specified	For 6-11 year old children significant benefits of intervention were found for 1/6 subscales of prosocial strengths (peer strengths) (effect size = 0·23), causal attributions of events (effect size = 0·55), causal attribution and perception scale (effect size = 0·37), sense of hope (effect size = 0·76) and behaviour difficulties (effect size = 0·40) For 12-16 year olds significant benefits of intervention to 1/12 subscales of coping style (effect size = 0·23) and post-traumatic stress disorder symptoms (effect	

						size =0·24). In post-hoc analysis, adolescent boys did not benefit from intervention; benefits were only found for adolescent girls. The intervention had a negative impact on adolescent boys' coping style and post-traumatic stress disorder symptoms.	
Jordans et al. 2010 Nepal *Low income country* .	Cluster randomized controlled trial	325 school-going children aged 11-14 years (mean = 12·7, SD 1·04) attending 8 schools in rural areas. All children in the school were screened for psychosocial distress. Children at high risk were included in the study.	Classroom based intervention: 5-weeks, 15 sessions lasting approx 1 hour each. Topics covered are: 1. Safety and control 2. Stabilization and awareness 3. Trauma narrative around thoughts and reactions during and after danger 4. Appraisal narrative including resource	Child post-traumatic stress symptoms Child Depression Child anxiety Strengths and Difficulties Questionnaire Child functional impairment Sense of hope Concern for others/Prosocial behaviour Child aggression	Controlled for clustering.	No main effect of intervention on any outcome variables. Differential effect of treatment: Significant benefits of intervention: 1 To prosocial behaviour for girls only. 2 To psychological difficulties and aggression for	Non-blinded assessors. Group differences on sex, education, caste/ethnicity, religion and place of residence and these were not controlled for in the analysis.

		Intervention group: n= 164 Control group: n = 161	identification and coping 5. Future orientation and social networks			boys only 3 To hope for older children.	
Tol et al. 2008 Indonesia *Lower-middle income country*	Cluster randomised controlled trial	14 schools situated in violence-affected communities randomly assigned to intervention or control group. Children in grades 4 & 5 screened for exposure to violent events, post-traumatic stress and anxiety. 403 children aged 7-15 years enrolled: 182 in intervention group and 221 in control group	Intervention involved 15 sessions over 5 weeks with groups of about 15 children. Topics included: 1. Information, safety and control 2. Stabilization, awareness and self-esteem 3. Trauma narrative 4. Reconnecting child and group to social context using resiliency based themes and activities.	Child reported post-traumatic stress, depression, anxiety, hope, impairment in functioning and stress related physical symptoms Parent reported aggression and Impairment in functioning	Controlled for clustering	At 6 month follow-up significant benefits of intervention to post-traumatic stress (effect size = 0·87) and hope (effect size = 0·07) Significant benefits of intervention were found for function impairment and post-traumatic stress for girls only.	Non blinded assessors Groups differences on sex, age and displacement and these were not controlled in the analysis. Low internal reliability and test-retest reliability of depression and anxiety scales.
Layne et al. 2001 Bosnia *Upper-middle income country*	Quasi-experimental	87 students from 17 secondary schools throughout Bosnia and Hercegovina took part in study. Compared students in schools where full program was administered (n=5 schools, 28 students) with students in	20 sessions of group psychotherapy lasting 80-100 minutes (preceded by an individual interview), delivered over one school year. Intervention covers the	Post-traumatic stress, depression, grief and child Self Rating Scale: 4 subscales = Rule compliance /acting out, Anxiety/withdrawal, Friend/peer relationships and School interest.	None	Significant reductions to post-traumatic stress symptoms, depression and grief for both groups. 50% showed a reliable improvement in post-traumatic	There was no group that received no intervention and the groups were not randomized. Only 63% of students were followed up and 7 schools were dropped from the

		schools where program was only partially administered (n=5 schools, 27 students). 81% girls, mean age = 16·81. Students in selected classrooms screened for war trauma exposure. Students in clinically distressed range included in study.	following topics: Traumatic experiences Reminders of trauma and loss Posttraumatic adversities Interplay between trauma and grief Resuming developmental progression.			stress and grief and 35% showed a reliable improvement in depressive symptoms. No significant differences between the groups on post-traumatic stress, depression or grief. Reductions in distress were associated with higher levels of psychosocial adaptation.	analysis.
Layne et al. 2008 Bosnia *Upper-middle income country*	Randomised controlled trial	127 war-exposed secondary school students attending 10 schools in central Bosnai. Students were aged 13-18 years with severe symptoms of PTSD, depression or maladaptive grief and significant impairment in school or relationships. Students were randomized to:	Intervention involved 1 school year of classroom based psychoeducation and skills intervention + 17 sessions of group psychotherapy (trauma and grief component therapy TGCT). Groups comprised 6-10 students and lasted 1-1½ hours. Groups were preceded by an individual interview. Comparison group recieved classroom	Child reported post traumatic stress symptoms, depression and maladaptive grief	None	Both groups reported significantly fewer post-traumatic stress symptoms and depressive symptoms post-treatment and at 4 month follow up. Benefits to maladaptive grief were found only in the intervention group.	Only 52% of students completed 4 month follow-up assessments. All measures were by child report. Analysis was not intention to treat.

		Intervention: n=66 or Control: n=61	based psychoeducation and skills intervention only.				
Bolton et al. 2007 Uganda *Low income country*	Randomised controlled trial	314 adolescents (14-17 years) with high levels of depressive symptoms in 2 camps for internally displaced persons Adolescents randomly assigned to group interpersonal psychotherapy (IPT-G): n=105, Creative play (CP): n=105 or Wait list control: n=104	IPT-G involved 1 or 2 individual meetings followed by 16 weekly group meetings (6-8 persons/group) lasting 1.5-2 hours. CP involved 16 weekly group meetings (25-30 persons/group) lasting 1.5-2 hours. Involved age appropriate creative activities followed by discussion to build skills to be used in real-life.	Local symptoms assessment measures were used Two tam, kumu, par = depression like syndromes Ma lwor = anxiety like syndrome Kwo Maroco = maladaptive or socially unacceptable behaviours. Functional impairment	Controlled for clustering	Significant benefits of IPT-G to depressive symptoms (effect size = 0·94) and anxiety symptoms relative to the control group. No significant benefits of CP on any outcome. Number of IPT-G groups attended was associated with great symptom reduction. No relationship between number of CP groups attended and symptom reduction. Post-hoc analyses show that benefits to depressive symptoms were for	Do not know if it was the psychotherapy, the meeting in small groups or the non-specific attention of the facilitator that led to benefits.

						girls only.	
Loughry et al. 2006 West Bank & Gaza *Lower-middle income country*	Quasi experimental study	400 children aged 6-17 years. Compared children from 2 experimental sites with children from 2 non-experimental sites. Intervention: n=300 Control: n=100	Intervention was resilience based and aimed to impact social, behaviour and emotional well-being of children, improve parent-child relationships and increase children's sense of hope about the future. The intervention lasted 12 months and involved participation in recreational, cultural and other non-formal activities.	Parent-rated child behaviour using Child Behaviour Checklist: 3 subscales total problems, internalizing scale and externalizing scale. Child reports of satisfaction with parent support and hopefulness	Child age Location	Significant benefits to child total problem scores on the Child Behaviour Checklist, child internalizing problems and child externalizing problems at both sites. Significant benefits to satisfaction with parental support in one site only. Post-hoc analysis showed benefits of intervention to total problems and externalizing problems was for girls only.	Authors note that there is a wide range of activities targeting children in the study areas and hence it is possible that children's exposure to additional interventions and support across the experimental and control sites differed (i.e. differences cannot be attributed only to the intervention being tested in this study).
Thabet et al. 2005 Gaza *Lower-middle income*	Quasi-experimental (6 camps allocated to one of three conditions).	Children aged 9-15 years with moderate to severe post traumatic stress symptoms living in refugee camps during ongoing war	Crises intervention group: Children attended 7 weekly sessions in which they were encourage to express their experiences and emotions through	Child reports: Post-traumatic stress reaction index	Age, gender and area of residence	No significant benefits of either intervention to child post traumatic stress symptoms or depression.	One camp was dropped from study (teacher education camp). Only girls were included in the teacher education

country		conflict. Crises intervention group: n=47 Teacher education group: n=22 Control group: n=42	storytelling, drawing, free play and role-play. Teacher education group: Teachers conducted 4 sessions with children on impact or trauma and aimed to normalize the child's response.	Depression			group. Analysis was not intention to treat.
Vijayakumar et al. 2006 Sri Lanka *Lower-middle income country*	Quasi experimental	11-14 year old children, living in a coastal village, one year after a tsunami. 340/1120 children who could read and understand questionnaire eligible for study. 150 children completed baseline and follow-up questionnaire. Intervention: 65 children who attended all intervention modules. Control: 70 children who did not participate in intervention sessions	Intervention was delivered over 6 2-hour sessions. Topics included emotions, anxiety management, discussion of negative feelings, problem-solving, interpersonal relationships, smoking and alcohol.	Self-report of behaviour problems using the Child Behaviour Checklist Child reported post-traumatic stress symptoms 16 item questionnaire asking how children would react to different circumstances.	None specified (but report no significant differences between groups)	Children in intervention group changed significantly in hyperactivity but children in control group did not. 2/16 questions showed significant benefits of intervention: children said that they would not smoke in spite of peer pressure and that they would be happier when they give gifts to someone.	Excluded a large proportion of children due to low literacy skills. Excluded all children who did not complete baseline or follow-up questionnaire Children who were compliant with the intervention were compared to those who were not.

Kumakech et al. 2009 Uganda *Low income country*	Cluster randomised controlled trial	326 children aged 10-15 years orphaned by AIDS and attending 20 schools Intervention: 10 schools, 159 children Control: 10 schools, 167 children	Intervention involved Peer Group Support and aimed at improving coping among AIDS orphans by providing social support and sharing concerns, fears and worries about orphanhood. It comprised 16 1-hour psychosocial exercises, implemented over 10 weeks after school by teachers. Intervention children also received monthly health care.	Beck Youth Inventory: self-concept, depression, anxiety, anger and disruptive behaviour	None specified	Significant benefits of intervention to: anxiety (effect size = 0·24), depression (effect size = 0·85) and anger (effect size=0·67).	Intracluster correlations were large and were not adjusted for in the analysis. Intention to treat analysis not conducted. Differential loss to follow-up in intervention and control groups.
Yu & Seligman (2002) China *Lower-middle income country*	Randomised controlled trial	220 children aged 8-15 years old (mean age (SD) = 11·66 (1·6)) attending 2 schools in Peking (both affiliated with Peking University) who were at risk for depression (top 25% of age group on depressive symptoms and family conflict) Intervention: n=104 Control: n=116	Intervention was based on the Penn Optimism Program which aims to enhance participants' resilience in the face of negative life events by training them to challenge pessimistic causal explanations and teaching other coping strategies. Children attended 10 weekly 2-hour sessions in groups of 10-14 children on Saturdays.	Child depression Children's attributional style questionnaire Outcomes measured at post test, 3 month and 6 month follow up	None specified	Significant benefits of intervention at post test (effect size = 0·25) and at 3 month and 6 month follow up (effect size = 0·33 and 0·39 respectively). Significant benefits were found for children's explanatory style at post-test and at 3 and 6 month follow-up. Changes in explanatory style mediated the effect of intervention on depression.	All measures were by child report. Sample was from relatively high SES families.
Bonhauser et	Cluster	Ninth grade students	Intervention involved	Anxiety, depression	Gender,	Significant benefits	Small number of

al. 2005 Chile *Upper-middle income country*	randomised: 4 ninth grade classes in one school were randomly selected and randomly assigned to intervention or control condition.	(aged 15 years) attending one school in a low SES urban area Intervention: n= 98 Control: n=100	three 90-minute physical activity sessions per week over one school year. Control students received a standard 90-minute exercise class / week. The intervention was designed by principals, teachers and students – based on student preferences, teacher expertise and local resources.	and self-esteem.	age, SES, risk behaviours (smoking, use of alcohol or other drugs), out of school physical activity, academic performanc e, body mass index.	of intervention to anxiety and self-esteem.	clusters. Classroom was not adjusted for in analysis.
Rivet-Duval et al. 2010 Mauritius *Upper-middle income country*	Randomised controlled trial	160 adolescents (aged 12-16 years) in grades 7 and 9 from two schools. Intervention: n=80 Control: n=80	Intervention used the Resourceful Adolescent Program- Adolescent version and involved 11 one-hour weekly sessions with groups of 8-12 participants. Cognitive behavioural and interpersonal approaches were used. Groups were facilitated by teachers.	Adolescent reports of: Depressive symptoms Hopelessness Coping Skills Self-esteem	None specified	Significant benefits to depressive symptoms (effect size = 0·32), hopelessness (effect size = 0·42), coping skills (effect size = 0·32) and self-esteem (effect size = 0·67) post intervention. After six months, significant benefits were found to coping skills (effect size = 0·27) and self-esteem (effect size = 0·46). No benefits were found to depressive	Student completion of questionnaires was supervised by teachers administering the intervention.

						symptoms or hopelessness after six months.	

[1]Levels of evidence are as follows: Level 1: Systematic reviews and meta-analyses; Level II: Randomised controlled trials; Level III: Non-randomised experiments with concurrent controls (quasi-experimental)

[2]Includes information on limitations of the study reflecting the likelihood that bias, confounding and/or chance have influenced the results (for example, selection bias (e.g. baseline differences between groups), detection bias (e.g. non-blinded assessors), attrition bias (e.g. high and/or differential attrition), inappropriate analyses (e.g. analysis was not intention-to-treat, clustering not controlled for in cluster-randomised trials), and/or insufficient details provided in methods to judge study quality).

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Webtable 5. Descriptions of targeted interventions for children with intellectual disorders in LMIC

Reference	Study Design[1]	Sample and Setting	Intervention	Outcomes	Covariates	Findings	Remarks[2]
Shin et al. 2009 Vietnam *Lower-middle income country*	Quasi-experimental	30 preschool children (3-6 years) who had been identified as having mild-moderate intellectual disabilities Intervention group: n=16 Control group: n=14	Intervention involved weekly home visits of 1-hour duration. The Portage Program was used and parents were trained to conduct enrichment activities with their children through modeling and coaching.	Pre-post intervention scores on the 4 domains assessed by the Parent Survey Form of the Vineland Adaptive Behavior Scale (VABS), which was adapted for use in Vietnam. Overall score and 4 subscales: motor, communication, daily living and social skills.	Family socioecon-omic status (SES), maternal education for overall score only.	Significant benefits of intervention to: Motor subscale ¼ components of daily living scale (personal care) Maternal education and child sex predicted change in adaptive functioning.	One tailed t-tests were used. Small sample size. Only 30% of families were classified as low SES. All outcome measures based on parental report. More children in control group (9 children) attended kindergarten than in intervention group (3 children).

[1]Levels of evidence are as follows: Level 1: Systematic reviews and meta-analyses; Level II: Randomised controlled trials; Level III: Non-randomised experiments with concurrent controls (quasi-experimental)

[2]Includes information on limitations of the study reflecting the likelihood that bias, confounding and/or chance have influenced the results (for example, selection bias (e.g. baseline differences between groups), detection bias (e.g. non-blinded assessors), attrition bias (e.g. high and/or differential attrition), inappropriate analyses (e.g. inappropriate statistical tests used), and/or insufficient details provided in methods to judge study quality).

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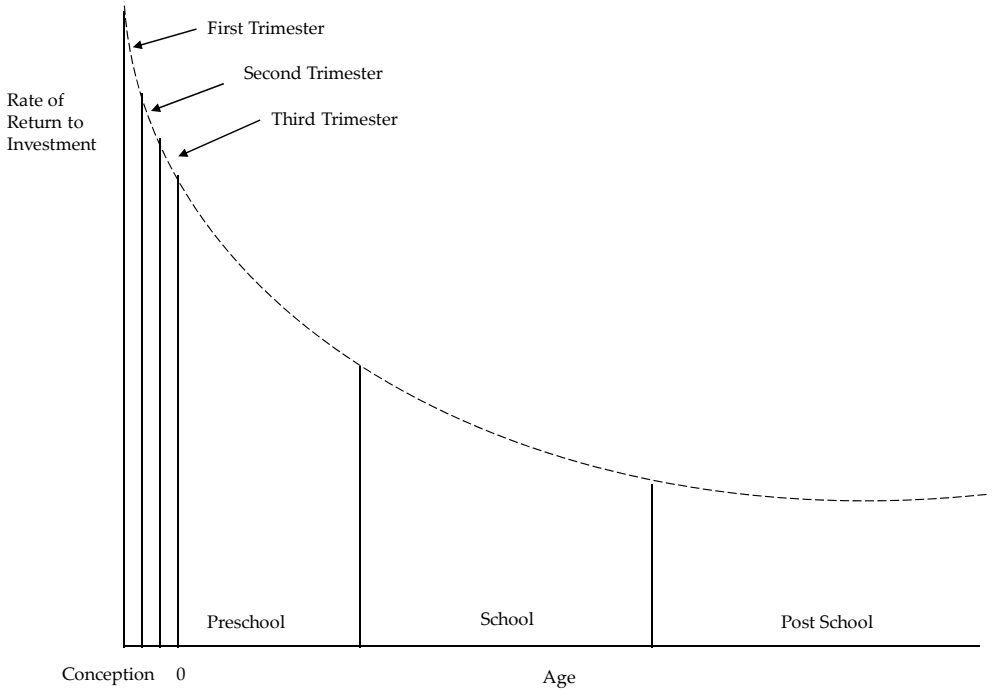
Rates of return to human capital investment initially setting investment to be equal across all ages



The figure is an adaptation from Heckman et al.,[123] and plots the rate of return to investment assuming the same investment is made at each age, starting in the prenatal period. It conveys the idea that investments made in the womb have a higher rate of return than investments made at later ages: the returns to earlier investments can be reaped over longer time periods, and since capabilities (cognition, physical and mental health) exhibit both self- and cross-productivity,[124] an early investment has multiple positive effects.

For prevalence studies, we used the term “prevalence”; for the risk, protective and resilience factors, we used “risk”, “protective” or “resilience”; for the prevention studies, we used the terms prevention/ & intervention/ & family intervention / & early childhood intervention / & school intervention / & nutritional supplementation / & micronutrient supplementation in conjunction with the terms mental health / & mental disorders/ & child psychiatry / & child psychology / & child behaviour /& child temperament / & internalising problems / & externalising problems / & specific mental health problems (conduct problems, conduct disorder, ADHD, depression, anxiety, intellectual disabilities, mental retardation) & social and emotional development / & social skills / & resilience / & emotional skills; to identify studies for children affect by war or natural disasters we also searched for the terms ‘war’, ‘violence’, ‘conflict’, ‘disaster’, ‘refugee’, ‘disaster’, ‘tsunami’, ‘earthquake’, with the terms mental health / & mental disorders/ & child psychiatry / & child psychology / & child behaviour /& child temperament / & internalising problems / & externalising problems / & specific mental health problems (conduct problems, conduct disorder, ADHD, depression, anxiety, intellectual disabilities, mental retardation) & social and emotional development / & social skills / & resilience / & emotional skills; to identify studies targeting important risk factors for child mental health we used the terms ‘child abuse and neglect’, ‘child labour’, ‘street children’, ‘maternal depression’, ‘violence’, ‘poverty’, ‘migration’, ‘disability’ with the terms mental health / & mental disorders/ & child psychiatry / & child psychology / & child behaviour /& child temperament / & internalising problems / & externalising problems / & specific mental health problems (conduct problems, conduct disorder, ADHD, depression, anxiety, intellectual disabilities, mental retardation) & social and emotional development / & social skills / & resilience / & emotional skills; for the treatment studies, we used “randomised controlled trial” (or the PubMed limits tool) and the specific diagnoses as stated later in the text.

Anexo #3. Artigos com foco em saúde mental global publicados durante o curso de doutorado, realizados como consultor do comitê de publicações da *World Psychiatric Association*

RESEARCH REPORT

Indexation of psychiatric journals from low- and middle-income countries: a survey and a case study

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There is a marked underepresentation of low- and middle-income countries (LAMIC) in the psychiatric literature, which may reflect an overall low representation of LAMIC publications in databases of indexed journals. This paper investigates the worldwide distribution of indexed psychiatric journals. A survey in both Medline and ISI Web of Science was performed in order to identify journals in the field of psychiatry according to their country of origin. Two hundred and twenty-two indexed psychiatric journals were found. Of these, 213 originated from high-income countries and only nine (4.1%) from middle-income countries. None were found in low-income countries. We also present the experience of a LAMIC psychiatric journal, the Revista Brasileira de Psiquiatria, in its recent indexation process. This case study may serve as an example for other LAMIC journals to pursue indexation in major databases as a strategy to widen the international foundation of psychiatric research. There is an important need for the inclusion of LAMIC psychiatric publications in the major indexation databases. This process will require multiple agents to partner with journals from LAMIC to improve their quality and strengthen their chances of being indexed.

Key words: Indexed psychiatric journals, low- and middle-income countries, psychiatric research

(World Psychiatry 2009;8:40-44)

Low- and middle-income countries (LAMIC), where over 80% of the global population live, bear the greatest burden of mental disorders. The level of submission from LAMIC in high-impact indexed journals is, however, less than 20% (1), and the proportion of papers published is even lower (2): a search in the Institute of Scientific Information (ISI) Web of Science database from 1992 to 2001 (3) reported that low- and middle-income countries (n=152) contributed only 6% of the international mental health research. A recent review of all original contributions during the 2002-2004 period in the six highest impact factor journals in the field of psychiatry revealed that only 3.7% of the published papers were submitted by authors from LAMIC (4). Moreover, a survey of the editorial and advisory boards of ten leading psychiatry journals showed a low representation of LAMIC (5). A major obstacle to disseminating LAMIC research is the scarcity of indexed journals with a strong LAMIC focus - such as, for example, journals published in LAMIC (3).

Local initiatives to develop information networks between researchers and mental health professionals are evident in some developing countries. An extensive survey published in 1999 identified 977 psychiatry journals being edited worldwide; of these, 413 were not listed in any abstracting or indexing service (6). Retrieving the best information in this scenario has become increasingly difficult and requires researchers to use indexation databases. The use of indexation databases, equally, is now a requirement for any publication that pursues adequate visibility and impact of research published in the journal. Two of the most relevant indexation systems for psychiatric journals are Medline, a bibliographic database developed by the US National Library of Medicine, and the citation indexes of the ISI, now part of Thomson Scientific, available online under the name Web of Science.

This paper aims to describe the worldwide distribution of indexed psychiatric journals, and identify the number published by LAMIC. It also aims to present information from a variety of sources about unindexed journals in the field, and to describe the recent experience of indexation of the Revista Brasileira de Psiquiatria as a case study. We use this study to provide suggestions for editors of journals in LAMIC to achieve better levels of indexations, so as to improve representation of these countries in the global literature databases.

METHODS

We performed a survey in both Medline and ISI databases to identify journals in the field of psychiatry according to their country of origin. The search in Medline was done by entering the expressions "psychiatry" and "substance abuse" in the journals database. Only journals that were currently both indexed and published were included. Psychiatric and substance abuse journals in the ISI were identified through the Journal Citation Reports (JCR). We included all journals listed in both Science and Social Sciences editions of the JCR for the category Psychiatry. For each journal, we collected information on title, ISSN, country of origin, publisher, and publication start year as provided by the databases. For publications indexed in ISI, we also collected citation data (e.g., impact factors, total cites). The assignment of a journal to a country was done based on registries from both databases; in

case of disagreement, priority was given to information obtained in ISI.

We sought information about unindexed journals in two ways. First, we contacted the 18 WPA Zonal Representatives (ZRs). We asked them to identify, with the help of their Member Societies, journals published in the Zone countries, but missing from the list. We also asked them to identify journals published by countries in each Zone and wrongly attributed to another. This may occur for example when a journal published on behalf of a Member Society by an international publisher is attributed to the country where the publisher's head office is located, often in Europe or USA. Second, we obtained permission to use information from a recent initiative of the World Forum for Global Research and the World Bank, a survey conducted to map out the research production in mental health from LAMIC for the period 1993 to 2003, in which researchers from 114 countries of Africa, East and South Asia, and Latin America and the Caribbean were identified through their publications in two databases (Medline and PsycInfo) and from local grey literature (7).

RESULTS

As of July 2007, for the category Psychiatry (including substance abuse), there were 209 journals indexed in Medline and 175 in ISI. Evidently, there is some degree of overlap between these two databases, and the number of journals indexed in any of these two systems is 222.

As shown in Table 1, there is a high concentration of indexed psychiatric journals in high income countries. We observed a significant correlation between per capita income and the number of indexed journals published ($r=0.75$, $p<0.001$). Two hundred and thirteen journals from high-income countries represent 95.9% of the total publications; the remaining nine publications (4.1%) were from upper-middle income countries. No psychiatric journal from any low-income country was identified in Medline or ISI databases.

As shown in Table 2, there is a clear geographical agglomeration of psychiatric journals, with 13 out of the 18 WPA Zones having three or less indexed journals, and six of them

Table 1 Number of journals indexed in Medline and/or the Institute of Scientific Information (ISI) Web of Science according to country of origin

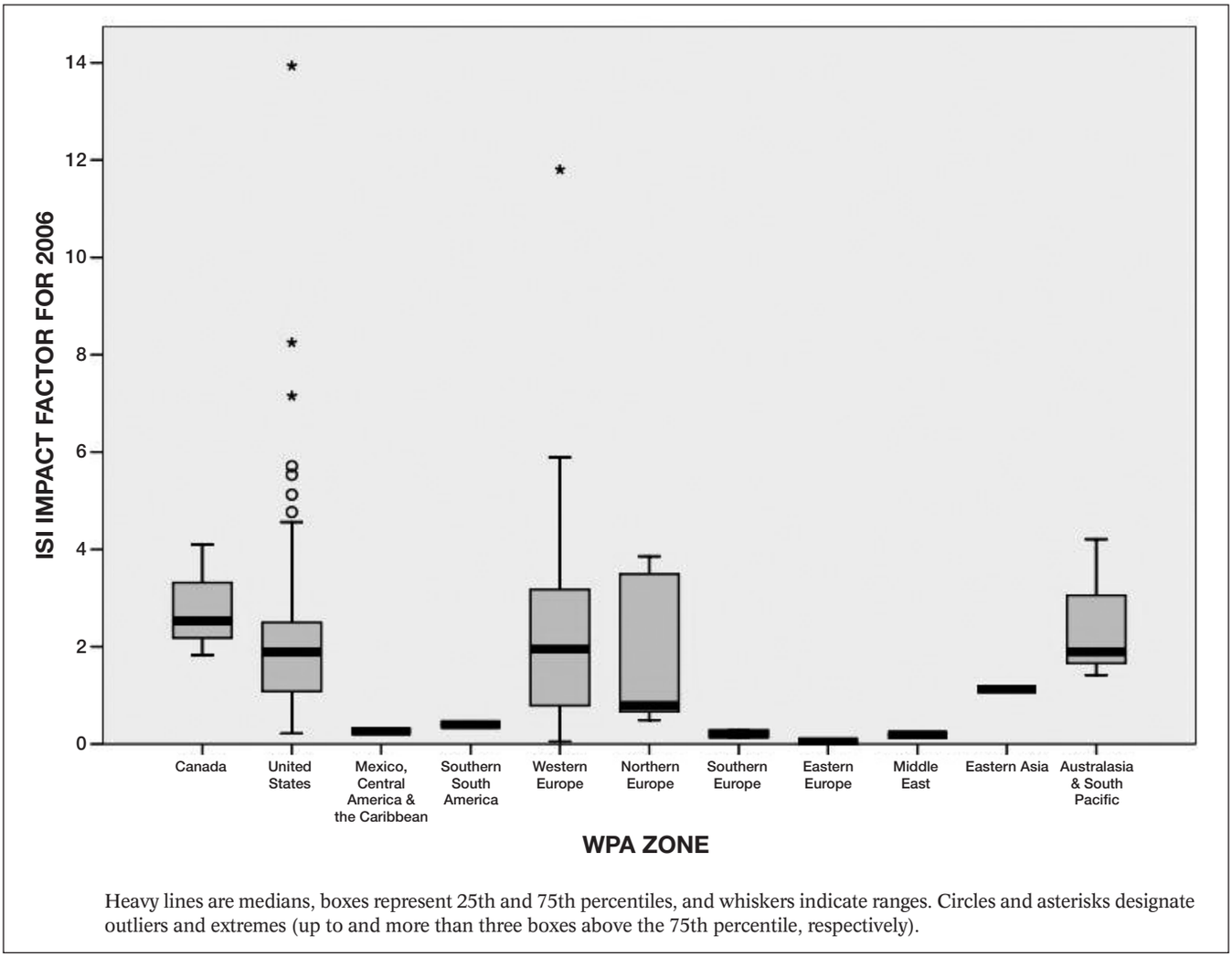
Country	Medline	ISI	Total
Argentina*	1	0	1
Australia	3	2	3
Brazil*	2	2	2
Canada	4	3	4
Croatia*	1	0	1
Denmark	2	3	3
England	40	37	44
France	5	3	5
Germany	12	14	15
Hungary*	1	0	1
Israel	1	1	1
Italy	2	2	2
Japan	3	1	3
Netherlands	8	7	9
New Zealand	1	1	1
Norway	1	2	2
Mexico*	0	1	1
Poland*	1	0	1
Russia*	1	1	1
Spain	2	2	3
Switzerland	10	10	11
Turkey*	1	0	1
United States	107	83	107

* Middle-income countries

Table 2 Number of journals indexed in Medline and/or the Institute of Scientific Information (ISI) Web of Science according to the WPA Zone distribution and of unindexed psychiatric publications from LAMIC

WPA Zone	Medline	ISI	Total indexed	Unindexed LAMIC journals
Canada	4	3	4	NA
United States	107	83	107	NA
Mexico, Central America and the Caribbean	0	1	1	6
Northern South America	0	0	0	13
Southern South America	3	2	3	56
Western Europe	75	71	84	NA
Northern Europe	3	5	5	NA
Southern Europe	5	4	6	2
Central Europe	3	0	3	11
Eastern Europe	1	1	1	NA
Northern Africa	0	0	0	2
Middle East	1	1	1	NA
Western and Central Africa	0	0	0	1
Southern and Eastern Africa	0	0	0	3
Western and Central Asia	0	0	0	1
Southern Asia	0	0	0	7
Eastern Asia	3	1	3	16
Australasia and South Pacific	4	3	4	NA

NA - not available and/or not applicable



Heavy lines are medians, boxes represent 25th and 75th percentiles, and whiskers indicate ranges. Circles and asterisks designate outliers and extremes (up to and more than three boxes above the 75th percentile, respectively).

Figure 1 Median impact factors for psychiatric journals indexed in the Institute of Scientific Information (ISI) Web of Science according to the WPA Zone distribution

having no journals at all (Northern South America, Northern Africa, Western and Central Africa, Southern and Eastern Africa, Western and Central Asia, and Southern Asia). Information obtained from ten WPA ZRs indicated the existence of another 46 unindexed psychiatric publications from LAMIC, while the Global Forum survey led to the identification of additional 87 LAMIC journals. Together, 118 LAMIC psychiatric journals not indexed in Medline or ISI were identified (Table 2).

Based on impact factors released in 2007 (regarding the year 2006), the 167 journals indexed in ISI had a median impact factor of 1.85 (ranging from 0.05 to 13.94). Only three of these publications were from middle-income countries (Brazil, Mexico, and Russia - ranked 154th, 161st and 166th in the final list, respectively).

Figure 1 shows the median impact factor for psychiatric journals according to WPA Zones. Of note, only two regions, namely United States and Western Europe, present outlier publications, with an impact factor higher than five.

A case study: the indexation of the Revista Brasileira de Psiquiatria

The Revista Brasileira de Psiquiatria has been published since 1966 as the official journal of the Brazilian Psychiatric Association (ABP). In 1984, the ABP and the Latin American Psychiatric Association (APAL) conducted a joint venture to publish the journal Revista da Associação Brasileira de Psiquiatria/APAL, with the acronym Revista ABP-APAL. In 1998, two new editors received the mission to re-structure the journal by the presidents of the Brazilian Psychiatric Association.

The first steps of the new editors were to invite two associate editors, to set up the missions of the journal, and to recover the original label Revista Brasileira de Psiquiatria. The missions of the journal were to give visibility to the scientific production of Latin American and Caribbean countries in the field of mental health and related sciences, and to provide continued medical education in the context of

evidence based information for mental health professionals in these countries. The journal was published quarterly, and two yearly supplements enhanced its educational role.

The editorial board was completely reformulated, increasing the representation of international investigators. To deal with political pressures, scientific productivity was included as a criterion to select participants in the board. The first major operational achievement was to include the journal in the Scientific Electronic Library Online (SciELO). This database is sponsored by Brazilian public funding agencies and aggregates the best available publications in Latin America and Caribbean countries, providing free online access to journals. The system is now also allowing for the electronic submission of manuscripts and for the bibliometric evaluation of journals.

To reach a wider audience and to promote the dialogue with other publications, the editorial board decided that it was essential for the journal to be indexed in the major scientific databases. In 2001, its first application to the ISI was refused on the grounds of a very low citation activity, from both authors and most editorial board members, and because "the journal would have low impact and less relevance for coverage in [Thompson Scientific's] products compared to other journals in this very competitive category".

Continuing the process of indexation, the journal was included in Medline in 2003 (8). At this time, all original research in the journal started to be published in English, with most of the review and special articles (which have a very important role in continuing education) being published in Portuguese or English, depending on the language in which they were submitted. This editorial decision found a degree of resistance among some readers, but this was an essential step for increasing the visibility of original articles in the journal and subsequently attracting high-quality research from authors from Brazil and many other countries.

A second application for the inclusion in ISI was attempted on the following grounds: the strengthening of the quality of the editorial board, attested by the number of their citations in the literature; the previous evaluation by the US National Library of Medicine and inclusion of the journal in Medline; and the growing presence of Brazil in health and mental health research (9,10), with each Brazilian article receiving a mean of 4.5 citations according to the ISI JCR (11). Another argument was that the inclusion of the journal in ISI would *per se* augment its citability. In 2005, the journal was finally indexed in ISI (8).

The Revista Brasileira de Psiquiatria is now a quarterly publication with two additional supplements dealing with topics of clinical practice and directed to update clinicians and mental health professionals. Supplements are printed in Portuguese only and published electronically in both English and Portuguese. The journal can be accessed online at SciELO (www.scielo.br/rbp), and at its own website (www.rbpbrasil.org.br), where free full-text articles can be downloaded. The number of article requests via SciELO has been 230,919 in 2004; 487,508 in 2005; and 762,794 in 2006. The first impact factor for the journal is going to be released in 2008, but projections reveal a steady growth in its citation rate, with an unofficial impact factor of 0.512 for the year 2006 (12). The journal costs around US$ 200,000 yearly, and 90% of these costs are covered by the pharmaceutical industry (the remaining comes from the Brazilian Research Council). By the end of 2006, the editorial board comprised 71 members: 37 from Brazil, 12 from United States, nine from England, and four from other Latin American countries. By comparison, the leading national psychiatric journal of United States has no international members on its editorial board, while a quarter of the editorial board of the leading journal of the UK is international.

DISCUSSION

Despite the rapid growth of global mental health research and the profile of global mental health, there is a marked underepresentation of LAMIC in the psychiatric literature. This underepresentation is also reflected in the proportion of psychiatric journals from LAMIC which are indexed in major international databases; we report that of all psychiatric journals indexed in either Medline or the ISI Web of Science just 4% are from middle-income countries. No indexed psychiatric journals from low-income countries were found. In addition, several WPA zones presented with no indexed journal (Northern South America, Northern Africa, Western and Central Africa, Southern and Eastern Africa, Western and Central Asia, and Southern Asia).

A joint statement by psychiatric journal editors and the World Health Organization in 2004 recognized the pivotal role of scientific journals in production and dissemination of research, as well as in the establishment and expansion of clinical services and in the education of investigators in research skills (13). By addressing the mental health needs of LAMIC and enhancing the international and multicultural aspects of psychiatric research, LAMIC journals emerge as a crucial vehicle for the promotion of mental health. Major difficulties met by these publications include limited visibility to the scientific community and consequent limited submission of high quality research.

Journal editors from LAMIC can ideally aspire to have their journals among the highest quality publications. The example of the Revista Brasileira de Psiquiatria demonstrates that such an ambition demands considerable local initiative to restructure the journal, sometimes in the face of opposition from vested interests. The main modifications implemented in this journal to achieve indexation in major databases were: a) an uncompromising criterion to include members in the editorial board based on scientific productivity in the last five years; b) an international board consisting of recognized investigators truly related to the journal activities; c) a rigid publishing timetable supported by a reliable income and stable editorial staff including clear succession plans; d) publishing original articles in English with free

electronic access, and e) publishing educational and review articles in the original language. Another important procedure was to invest in training current staff as well as future members of editorial teams. Since 2004, the journal created three junior editor positions for young investigators. Each of them works together with two senior editors learning the skills of scientific and peer review editing.

The number of unindexed journals identified in several regions attests to the activity and aspirations of researchers and readers across the world. The figures presented were derived from only two information sources and do not intend to be exhaustive – future work is necessary to identify additional psychiatric journals around the globe. We also acknowledge that the absence of psychiatric journals does not mean lack of scientific productivity in the field of mental health. Many countries not mentioned here may have indexed general medical journals in which mental health research may be published. However, it also likely that only a fraction of mental health research carried out in a LAMIC will be published in general journals, as they compete for space with all other medical specialties – thus, a substantial amount of research will never be disseminated. Apart from the overall low representation of LAMIC journals, we also acknowledge the marked intraregional and intranational disparities, which we have not investigated. In the case of South America, for example, only Argentina, Brazil and Mexico, out of 12 countries, have indexed journals. A recent survey that included only LAMIC mental health investigators revealed that researchers and indexed publications output were concentrated in just 10% of the countries, confirming the heterogeneity among emergent nations (14). Disparities inside countries are also present: in Brazil there is a geographical cluster of funding and scientific productivity, with most research being conducted in the South Eastern and Southern states (15).

In order to close the 10/90 gap in mental health research, LAMIC need not only to improve the quality of research, but also find ways to increase the dissemination of their scientific production. In LAMIC where financial resources are especially limited, the development of dissemination strategies to support evidence based knowledge is critical to influence mental health policies and programs in order to reduce the burden of mental health disorders.

The WPA has 130 Member Societies in 110 countries, and through its ZRs is working to establish a database of journals in all parts of the world as a basis for advocacy and action (16,17). We call on journals with a record in achieving high standards, together with funding agencies, to partner with journals from LAMIC, particularly regions which are not represented in the international scientific databases, to improve their quality and strengthen their chances of being indexed.

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The 5/95 Gap on the dissemination of mental health research: The World Psychiatric Association (WPA) task force report on project with editors of low and middle income (LAMI) countries

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Abstract

The World Psychiatric Association (WPA) Task Force and a small group previously convened by the WPA publications committee initiated three activities between 2006-2008 that aimed to respond to the need for greater support for psychiatry journals in LAMI countries. In a joint venture with participants from the Global Mental Health Movement the Task Force editors from LAMI countries in Africa, Asia, Eastern Europe and Latin America were contacted to identify potential journals to target for indexation (Medline and ISI). The committee analyzed the editors' applications on the following criteria: a) geographical representativeness; b) affiliation to a professional mental health society; c) regular publication of at least 4 issues per year over the past few years; d) comprehensive national and international editorial boards; e) publication of original articles, or at least abstracts, in English; f) some level of current indexation; g) evidence of a good balance between original and review articles in publications; and h) a friendly access website. The committee received 26 applications (11 from Latin America, 7 from Central Europe, 4 from Asia and 4 from Africa), and selected 8 journals, 2 from each geographical area, on the basis of the overall scores obtained for the items mentioned, to participate in an editors meeting held in Prague in September 2008. The aims of the committee are twofold: a) to concentrate support for those selected journals; and b) to assist all LAMI mental health editors in improving the quality of their journals and fulfilling the requirements for full indexation. This report summarizes the procedures conducted by the committee, the assessment of the current non-indexed journals, and offers suggestions for further action.

Introduction

The existing level of mental health services and the resources devoted to mental health in low- and middle-income (LAMI) countries is far from that required. It is advisable that policymakers base their decisions on the best available local evidence to scale up effective and cost-effective treatments and preventive interventions for mental disorders. Therefore, region- or country-specific information can only be generated by local research. The dissemination of local research information by regional scientific journals is an important step towards influencing and guiding policies at both regional and national levels. Thus there was a need to have current information on mental health scientific journals around the globe.

The first step of the committee was to conduct a survey in both Medline and ISI Web of Science in order to identify journals in the field of psychiatry according to their country of origin. Two hundred and twenty-two indexed psychiatric journals were found. Of these, 213 originated from high-income countries and only nine (4.1%) were from

middle-income countries; a) 5 from the European region, where there were two existing psychiatric journals indexed in both ISI/Medline databases (Psychiatria Danubina from Croatia and the Zhurnal Nevrologii i Psikhiatrii from Russia), and three others indexed in Medline (the Psychiatria Hungarica, the Psychiatria Polska, and the Turkish Journal of Psychiatry); and b) 4 from Latin America, (2 from Brazil, The Arquivos de Neurospiquiatria, and The Revista Brasileira de Psiquiatria, the Vertex from Argentina indexed in the Medline, and the Mexican Salud Mental, indexed in the ISI). It was striking that none of the indexed journals found came either from the Asia or African regions. This confirmed the marked underrepresentation of low- and middle- income countries (LAMIC) in the psychiatric literature, which may reflect an overall low representation of LAMIC publications in databases of indexed journals.

A joint venture between a WPA task force and the participants from the Global Mental Health Movement contacted editors from low and middle income (LAMI) countries (Africa, Asia, Eastern Europe and Latin America) to identify potential journals to target for indexation (Medline and ISI). A questionnaire was designed for the task (Appendix I), and the committee analyzed the editors' applications on the following criteria: a) Geographical representativeness; b) Affiliation with a professional mental health society; c) Publication frequency i.e. to have published regularly approximately 4 issues per year in recent years; d) Editorial board i.e. to have a credible national and international editorial board; e) Language i.e. to have original articles in English, or at least abstracts in English; f) The level of regional and the present indexation in the main databases; g) The balance between original and review articles in recent publications; and h) To have a user friendly and free access of articles on their website. The aim of this report is to summarize the process undertaken by the committee, the quality assessment of the current non-indexed journals, and the suggestions made for further action.

1. The Latin American Region

There are four journals indexed in one of the Medline/ISI database: a) two from Brazil indexed in ISI/Medline (The Arquivos de Neurospiquiatria, and The Revista Brasileira de Psiquiatria); b) the Vertex from Argentina indexed in the Medline; and the Mexican Salud Mental, indexed in the ISI.

As it can be seen in Table I, there were 11 applications from Latin America (four from Brazil, three from Argentina, two from Uruguay, one from Chile and one from Peru), and the committee decided to select two journals for the Prague meeting: a) the Jornal Brasileiro de Psiquiatria; and b) the Revista Chilena de Neuro-Psiquiatría. The Revista Chilena de Neuro- Psiquiatria was not able to attend the meeting.

The Jornal Brasileiro de Psiquiatria

The Jornal Brasileiro de Psiquiatria (JBP) is the most established Brazilian scientific journal in the fields of Psychiatry and Mental Health. The JBP was founded in 1938, as the scientific journal of the Institute of Psychiatry of the Universidade Federal do Rio de Janeiro, which owns the copyright. The JBP has two editors-in-chief (Drs. Márcio Versiani and José Carlos Appolinario) and three assistant editors (Dr. Jérson Laks, Alexandre M Valença, and Mauro V Mendlowicz), each one with his own field of specialty in Psychiatry. Assistant editors are dedicated to specific sections of the journal. The editorial boards of the JBP were modified five years ago to become more representative of modern trends in Psychiatry. It now features 12 members on the international editorial board and 32 on the national board. Both editorial boards comprise renowned researchers with a wide range of expertise in Psychiatry. The JBP publishes 4 regular issues every year (plus supplements). The articles may be written in Portuguese, English or Spanish. The abstracts are structured and are published in Portuguese and in English. The reference format adopted in JBP is the Vancouver system. In 2007, the rejection rate of the JBP was 30% and the average length of time for publication was 6 months. The JBP is indexed in the following databases: Scientific Electronic Library Online (SciELO), Instituto Brasileiro de Informação em Ciência e Tecnologia (IBICT), Index Medicus Latino-Americano (LILACS), American Psychological Association (PsychoINFO), British Library Document Supply Center (BLDSC), Institute de l'Information Scientifique et Technique (INIST), Library of the Royal Netherlands Academy of Arts and Sciences (KNAW), Ulrich's International Periodicals Association (UIPA), and Excerpta Medica (Embase).

Table I: The distribution of journals from Latin America

Name	*Country*	*Region*	*Issues/year*	*since*
Foundation for the Investigation Interdisciplinary of Comunication-FINTECO	Argentina	Arg	2/4	2004
Archivos de Neurología, Neurocirugía y Neuropsiquiatría	Argentina	LA	4	1996
SINOPSIS	Argntina	Arg.	4	1984
Jornal Brasileiro de Psiquiatria	Brazil	Br	4	1930
Revista de Psiquiatria do Rio Grande do Sul	Brazil	South America	3	1979
Revista Brasileira de Psicoterapia	Brazil	South America	3	1999
Revista Chilena de Neuro-psiquiatría	Chile	South America	4	1947
REVISTA DE PSIQUIATRIA Y SALUD MENTAL "HERMILIO VALDIZAN"	Peru	South America	1/2	2001
Itinerario	Uruguay	South America	3	2004
REVISTA DE PSIQIATRIA	Uruguay	South America	2	1935/2000
SMAD REVISTA ELETRÔNICA SAÚDE MENTAL ÁLCOOL E DrogaS	Brazil	Brazil	2	2005

The mission of the JBP can be summarized as follows: ''The Brazilian Journal of Psychiatry is part of continuous medical education and updating programs aiming at the promotion of results of research in the field of psychiatry, from national and international institutions, with potential interest for investigation and clinical practice''. The audience of the JBP is composed of mental health professionals (psychiatrists, psychologists, social workers, psychiatric nurses, and occupational therapists), residents, and graduate and undergraduate students. The journal is financed through advertising, paid subscriptions, sponsored supplements, and sales of reprints. There is also an in-kind funding through the use of the physical and administrative infrastructure of Institute of Psychiatry of the Universidade Federal do Rio de Janeiro (e.g. office space, institutional website). Prospective authors are requested to declare that the study was conducted in accordance to the principles of the Declaration of Helsinki and its amendments, including informed consent approved by a properly qualified ethics committee. They are also requested to disclose all possible sources of conflict of interest.

The JBP accepts advertisements from the pharmaceutical industry in the regular issues. Supplements can be sponsored by pharmaceutical companies under specific editorial guidelines. Electronic submission of manuscripts using the SciELO online submission system is now being implemented and is expected to be in full use by the Spring of 2009. Information for readers and authors and free access to abstracts and full articles are provided on the websites of the Institute of Psychiatry of the Universidade Federal do Rio de Janeiro and of the SciELO.

In summary, the journal has a fair number of good level original articles but still publishes some articles in the local language. It has a broad and active international board, and a good periodicity, with 4 issues per year. The journal might reconsider its mission and should look for a role different from the Revista Brasileira de Psiquiatria. It is the view of the committee that a few amendments would make the journal ready for Pubmed and ISI submissions.

In Brazil, there are two other journals which in addition to the Jornal Brasileiro de Psiquiatria, have achieved standards leading to improved levels of indexation (Revista de Psiquiatria do Rio Grande do Sul, and Revista de Psiquiatria Clinica). Indeed, the Revista de Psiquiatria Clinica, whose editor is Prof. Wagner Gattaz, from the Institute of Psychiatry, University of São Paulo, has recently been incorporated by the Thomson/ISI database. The next candidate in Brazil is the Revista de Psiquiatria do Rio Grande do Sul. There are two further journals in Latin America, which have been incorporated by Scielo, showing they have certain minimum standards and the potential for improving indexation, the Revista Chilena de Neuro-Psiquiatria and the Revista Colombiana de Psiquiatria.

Further Actions of the Committee in Brazil

Helen Herrman and Jair Mari met with the editors of the main journals, in Brasilia during the Brazilian Congress of Psychiatry in October 2008 (Revista Brasileira de Psiquiatria, Revista de Psiquiatria Clinica, Revista de Psiquiatria do Rio Grande do Sul, and Jornal Brasileiro de Psiquiatria). The focus of the discussion was to suggest that for a continental country like Brazil, it might be more appropriate to diversify the scope of the publications (as pointed out by Peter Tyrer in the Prague meeting).

The actual situation is still oriented to more regional accomplishments, where all journals target the same audience, comprising similar content of articles. By following this path, the country is missing out an opportunity for a better placement in the international scenario, for instance, by investing in different areas of knowledge, such as Dementia, Developmental Disorders, and Psychosis. Although it is not the intention of the committee to be prescriptive, the meeting went very well and proved to be a brain storm for future developments of mental health publications in the country.

2. The Central European Region

In this European regional there are two psychiatric journals indexed in both ISI/Medline databases (Psychiatria Danubina from Croatia and the Zhurnal Nevrologii i Psikhiatrii from Russia), and three others are indexed in Medline: the Psychiatria Hungarica, the Psychiatria Polska, and the Turkish Journal of Psychiatry. As it can be seen in Table II, there were seven applications from Central Europe (two from Serbia, two from Turkey, one from Bulgaria, one from Czech and Slovak Republic, and one from Croatia). The committee decided to select two journals for the meeting: a) the Journal of Czech

Table II: The distribution of journals from Central Europe

Name	*Country*	*Region*	*Issues/year*	*since*
Journal of Czech and Slovak Psychiatry	Czech Republic + Slovak Republic	Czech Republic + Slovak Republic	8 8	1904 2000
PSYCHIATRY TODAY	SERBIA	CENTRAL EUROPE	2	1969
Bulgarian Journal of Psychiatry "Receptor"	Bulgaria	Central Europe	6	2004
ENGRAMI	Serbia	Europe	4	1979
Klinik Psikofarmakoloji Bulteni (Bulletin of Clinical Psychopharmacology)	Turkey	Europe	4	1990
Psychiatria Danubina	Croatia	Danube Region Albania Bosnia Moldova Roumania	4	1989
Yeni Symposium (New Symposium)	Turkey	Europe	4	1962

and Slovak Psychiatry; and b) the Turkish Klinik Psikofarmakoloji Bulteni (Bulletin of Clinical Psychopharmacology).

The Turkish Klinik Psikofarmakoloji Bulteni (Bulletin of Clinical Psychopharmacology)

This is an Istanbul-Turkey based Open Access Psychiatry, Psychopharmacology journal, regularly published since 1990. The Editor in Chief, is based in an office in Istanbul (same person since 1996), and there is a web based communication among the members of the editorial board. The Vancouver style reference system is adopted for articles published either in Turkish or English. Abstracts are both in Turkish and in English. A web site, including full text of articles, has been available since 2000.

The current status of indexation is as follows: a) Indexed and abstracted in Thomson Master list; b) SCI-E, International Pharmaceutical Abstracts; c) JCR/Science (2008); d) EMBASE; e) Scopus; f) CABS; g) Elsevier BIOBASE (2002); h) PsycINFO; i) PsycSCAN/Psychopharmacology (2002); j) EBSCOhost databases (2004); k) ProQuest databases (2004); l) British Library Direct (2004); m) DOAJ; n) Index Copernicus; o) Turkish Medical Index, and p) Turkish Psychiatry Index. Psychiatry and psychopharmacology journal.

The Primary focus of the journal is psychopharmacology and biological psychiatry. The major audience comprises psychiatrists, pharmacologists and other mental health professionals. It is a quarterly journal, including 10-12 articles per issue, 50-60% (5 to 7 per issue) being original research articles, 80-85% of articles are in Turkish. Submission is made via e-mail to the editor, though classic submission via postage is available. Online first system will be introduced in 2009 to avoid delays in publication.

Research articles on biological psychiatry and psychopharmacology are given priority, and review articles can be commissioned. The length for publishing the article is near 3 months for original research, and 6 to 9 months for case reports and review articles. The rejection rate was around 10% for the year 2007.

Pharmaceutical industry and revenues from society's congresses finance the cost of the journal. A circulation of 3000 printed issues is posted to all psychiatrists, neurologists, libraries in Turkey, and major libraries in the world.

An online web edition is available for free to all. There have been no delays in publication whatsoever (including financing) for the last 10 years.

Major pharmaceutical companies support the journal with advertisement, but do not interfere with editorial or academic content. The editorial board is composed of academics from different psychiatric departments in Turkey as well as several editorial members from the USA, UK, and Israel. The journal was previously the official journal of Gulhane Medical School Haydarpasa Hospital Psychiatry Clinics, Istanbul. However, since 2004, it became the official journal of Turkish Association for Psychopharmacology. The journal submitted an application to Medline, but it was rejected in the same year that the Turkish Psychiatric Journal was granted its approval.

The journal is heading to Medline and PubMed, and is also pursuing the adoption of the DOI in cross reference system for online first service. In summary, this is a good journal from Turkey, with a very broad representativeness in the international board and a fair number of good original articles. The rejection rate is very low, and the journal would benefit to decrease the number of original articles per issue, improving quality and increasing rejection rates. With a few amendments it is the view of the committee that the journal is ready for Medline submission.

The Journal of Czech and Slovak Psychiatry

The journal is published mainly in the local language with abstracts in English. It publishes 8 issues per year, and it comprises few original articles in English. The journal would benefit from having fewer issues per year, to have more independence from the professional society, to improve international representativeness in the editorial board, and to increase the number of original articles in English. It is the view of the committee that the journal needs further work before being ready for submission to both Pubmed and the ISI. There are other local journals available in the Czech Republic, and a merging might increase the likelihood of having an indexed journal in the country. Psychiatria Danubina is already fully indexed and the committee invited the editor to present the current state of the journal.

3. The Asian Region

The search in Medline and the ISI did not reveal any psychiatric journal indexed from the Asian region in at least one of these two databases. As it can be seen in Table III, the committee received four applications from the Asian region (one from India, one from Malaysia, one from Pakistan and one from China). The committee selected the Indian Journal of Psychiatry and the Hong Kong Journal of Psychiatry.

The Indian Journal of Psychiatry

The journal promotes original research in psychiatry and the behavioural sciences. It has continued to remain in circulation for more than 50 years and the readership has continuously grown. IJP is possibly the oldest psychiatric journal in Asia and is the primary mental health academic journal for 1/6th of humanity. The journal provides immediate free access to all

Table III: The distribution of the journals from the Asian region

Name	*Country*	*Region*	*Issues/year*	*since*
Indian Journal of Psychiatry	India	Asia	4 + suppl's	1949
Malaysian Journal of Psychiatry	Malaysia	Asia	2	1996
Journal of Pakistan Psychiatric Society (JPPS).	Pakistan	Asia	2	2004
The Hong Kong Journal of Psychiatry	China	East Asia	4	2000

the published articles. It does not charge the authors for submission, processing or publication of the articles. The Journal is in the forefront of the Mental Health Movement of India. The IJP is a journal comprising good quality articles, and a broad international board. The number of issues is 4 per year, and the number of original articles around 5 per issue. The rejection rate is 23% and the length of time for publication is 162 days. The journal is currently indexed in the following databases: a) SCOPUS; b) DOAJ; c) Index Copernicus; d) Health & Wellness Research Center; e) Health Reference Center Academic; f) InfoTrac One File; g) Expanded Academic ASAP; h) Genamics Journal Seek; i) Ulrich's International Periodical Directory; j) EBSCO Publishing's Electronic Databases; and k) Google Scholar. The journal needs to pursue a stable relationship with its professional society. In terms of content quality, it is the view of the committee that the journal is ready for submissions in both Pubmed and ISI.

The Hong Kong Journal of Psychiatry

The Mission of the HKJPsych is to promote communication for presentation of original psychiatric research, and knowledge transfer for the advancement of psychiatry in Hong Kong SAR and the region. The Journal is an official publication of the Hong Kong College of Psychiatrists. It is circulated among fellows, member's inceptors, and affiliates of the College, mental health professionals and other fields of medicine, both locally and abroad. The Journal is indexed in EMBASE, Excerpta Medica, PsyINFO, Index Copernicus, EBSCO, Thomson Gale and ProQuest. Full text is available online at: www.hkjpsych.com. The publisher is the Hong Kong Academy Press.

The journal publishes original articles, review papers, case reports, book reviews, letters to the editor and first person accounts. The Journal circulates quarterly (4 issues/year) with full text in English and Chinese with English abstracts. Submission of articles is available at admin@hkjpsych.com. There are three to four original articles per issue and rejection rate is around 28%. The aim is to shorten the period from submission to publication to a length of between 6 and 9 months. The editorial assistant will be responsible for monitoring this process. All submissions will be peer reviewed by 2 independent reviewers. Accepted manuscripts will be sent to the publisher after transfer of copyright is completed.

To improve indexation, the editorial board aims to pursue the following steps: a) to encourage submission by expanding mailing lists; b) to establish a group of experienced reviewers to give constructive comments; and c) to actively solicit submission from different platforms. Moreover, the editorial board is committed to streamline the publication logistics by speedy review and revision cycle, optimizing language editing and solicit financial support to ensure sustainability.

It is the view of the committee that this journal has a good level editorial board; it is publishing fairly good original articles, and is aware of the obstacles ahead to improve quality. It fulfills all the criteria for being indexed in the Medline/ISI databases.

The Malaysian Journal of Psychiatry and the Journal of Pakistan Psychiatric Society have only 2 issues per year, though with a good number of original articles. A more active role to increase the number of original articles and to accomplish 4 issues per year could be an important step for future indexation of these two promising journals. After the Prague meeting the committee received the application of a South Korean journal, the Psychiatry Investigation. The journal was founded in 2003, and covers the whole range of psychiatry and neuroscience. Both basic and clinical contributions are encouraged from all disciplines and research areas, as well as research related to cross cultural psychiatry and ethnic issues in psychiatry. The journal publishes 4 issues per year and comprises approximately 10 original articles per issue.

4. The African region

The search in Medline and the ISI did not reveal any psychiatric journal indexed from the African region in at least on of these two databases. The committee received four applications from the African region (two from Egypt, one from South Africa, and one from Nigeria), as is shown in Table IV. The committee decided to select the African Journal of Psychiatry, and the Egyptian Current Psychiatry. As the African Journal of Psychiatry declined the invitation (due to the Editor not being available for the meeting), it was replaced by the Nigerian Journal of Psychiatry.

Current Psychiatry (Egypt)

The journal highlights scientific research and mental health services in Egypt and the Middle East. The audience includes psychiatrists and mental health professionals, including all candidates for the degrees of diploma, masters and doctorate in Psychiatry. The journal was founded in 1993 with 2 editions per year. It is currently published 3 times per year, and 80% of the articles are original research. Articles are written in English with an abstract in Arabic though very few articles are written in Arabic. The rejection rate is nearly 40%. Journals are distributed for free in Egypt. The journal receives funds from the pharmaceutical industry through advertising and also receives a grant from the Institute of Psychiatry. The journal has been published regularly for the past 15 years.

Table IV: The distribution of the journal from the African region

Name	*Country*	*Region*	*Issues/year*	*since*
The Egyptian Journal of Psychiatry	Egypt	North Africa	2	1978
Current Psychiatry	Egypt	North Africa	3	1994
Nigerian Journal of Psychiatry	Nigeria	Africa	3/4	1980/2000
African Journal of Psychiatry (Previously "South African Psychiatry Review")	South Africa	Africa	4	2001

This journal is published regularly, though it might decrease the number of articles per edition whilst increasing the number of issues to 4 per year. It needs to develop a website and improve web visibility. It may expand the international board so as to keep improving local and international visibility. It is our view that with a few amendments the journal would be ready for Pubmed submission.

The Nigerian Journal of Psychiatry

The mission of the NJP is to serve as a training tool for psychiatrists and other mental health professional trainees in Nigeria. It also aims to encourage training in research methodology and report writing and to be a means for authors to disseminate their findings. It attempts to capture a wide audience by sending free copies not only to medical libraries but as many university libraries as possible although there are a lot of constraints caused by expensive and unreliable postal services. The journal is still entirely funded by the Association of Psychiatrists APN, and it is having difficulty in getting enough articles for each issue. Circulating each issue within and outside Nigeria is limited. Outright rejection of articles is rare as reviewers are encouraged to strive to make articles as publishable as possible by suggestions and helping with references. Many authors send their papers to journals with better impact factors

This is an incipient journal which has improved in the last year, but needs to take a number of steps: a) to improve geographical representativeness; b) to maintain periodicity and increase the number of original articles; c) to improve local and international representativeness in the editorial board; and d) to increase the number of original articles. Furthermore, it was noted that Nigeria is a country with a relatively small number of mental health professionals, and the journal has infra structure problems in its financing and administration. Networking with psychiatrists of Nigerian origin currently residing in western societies is highly recommended. The conclusion is that much work has to be done before of going to Medline and/or the ISI databases.

The *African Journal of Psychiatry* is well placed, has a broad international board, good original articles written in English, and is awaiting the outcome of a Medline application. It is the view of the committee that the *African Journal of Psychiatry* is ready for the ISI and Medline submissions.

The Website Development

Christian Kieling is developing a directory of all available mental health and psychiatric journals around the globe linked to the WPA website, as a basis for advocacy and action. The database has already been established with the material assembled by a forthcoming paper in World Psychiatry (Kieling et al 2008; in press), and with the cooperation of several WPA zonal representatives. This survey, describes the worldwide distribution of indexed psychiatric journals in both Medline and ISI Web of Science databases. As of mid-2007, 222 indexed psychiatric journals were found: there were 209 journals indexed in Medline and 175 in ISI (there is, of course, some degree of overlap between these two databases). Of these, 213 originated from high-income countries and only nine (4.1%) from middle-income countries. None were found in low-income countries. In the next few months, the complete database will be available at the new WPA website; and the committee is currently working on the plan for its maintenance and periodic update.

Main Conclusions of the Committee:

- There are several journals ready to apply for indexing with Medline and PubMed. An Expert Panel formed from the Task Force (Jair Mari, Peter Tyrer, Christian Kieling) will offer consultation and assistance as requested to encourage successful applications as soon as possible. Other journals will also, according to their interests and requests, be encouraged and assisted to make changes over a longer time period.
- It is important to sustain a WPA website comprising all journals which disseminate research findings in mental health issues.
- The Task Force will carry on its mission to provide continuous supervision to encourage submissions for Medline applications of those journals that accomplished the criteria for quality (see questionnaire attached in the Appendix 1).
- The Task Force will aim to develop courses for training editors and peer reviewers from LAMI countries, during WPA congress and events.

General Recommendations for Editors:

a) Their editorial board should be as international as possible, i.e., by inviting researchers from other countries to serve on review and editorial panels;
b) To select locally those research oriented trained mental health professionals to expand the editorial boards on the basis of research oriented components;
c) To develop twinning or pairing arrangements with established journals;
d) To organize workshops for reviewers and editors;
e) To publish abstracts/summaries/articles in more than one language;
f) To maintain a balance between research papers and review articles for meeting needs of practitioners;
g) At a continental level to achieve diversification of the publications to avoid overlap and competing with the same audience;
h) To promote merging of journals where local publications prevail;
i) To participate in developing a curriculum for editors and people interested in preparing to be editors, and working on editorial staff;
j) To involve junior doctors in the editorial process of the journal;
k) To provide on-line submission, now perceived as advantage;
l) To adopt the Vancouver system of referencing, now becoming universal;
m) To generate research links with researchers in the HIC settings and thereby improve quality of research papers;
n) To promote South-South collaboration to a much greater degree (along the lines of the WPA initiative).

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Appendix I: Checklist Questionnaire for Assessing Quality of Scientific Journals

0= No 1 = Yes

Scoring System

- Did the editor publish more than 5 publications in the Pubmed in the last 5 years?
- Do regional participants of the editorial board achieve at least one publication per year in the Pubmed in the last three years? (Select randomly 5 participants and Rate 1 if percentage above 80%)
- Does the editorial board comprise more than five international participants?
- Do the international participants have more than three pubmed papers in the last three years? (Select randomly 5 participants and Rate 1 if percentage above 80%)
- Does the journal publish more than 4 issues per year?
- Does the journal have more than 5 original papers per issue?
- In the last three issues of the journal, are more than 50% papers published in English?
- Do more than 50% of the articles belong to an institution outside the hosted journal?
- Are the articles peer reviewed per at least two referees?
- Is the journal currently indexed in PsycINFO, Embase or Scopus? (Rate 1 if at least one indexed database).

Qualitative Assessment:

Administration and Infrastructure:

- Does the journal handle ethics in a fair way?
- Does the journal have a sustainable financial mechanism to bring stability?
- Does the format comply with the Vancouver system?
- Is the journal available on-line free of charge?
- Is the submission handled on-line?
- Is the rejection rate for the previous year above 30%?
- Is there an own administration for the journal?
- Is there a surveillance system to monitor trends in the citing of the journal?

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ACTA PSYCHIATRICA SCANDINAVICA

Brief communication

The 5/95 gap in the indexation of psychiatric journals of low- and middle-income countries

Mari JJ, Patel V, Kieling C, Razzouk D, Tyrer P, Herrman H. The 5/95 gap in the indexation of psychiatric journals of low- and middle-income countries.

Objective: To investigate the relationship between science production and the indexation level of low- and middle-income countries (LAMIC) journals in international databases.
Method: Indicators of productivity in research were based on the number of articles produced over the 1994–2004 period. A survey in both Medline and ISI/Thomson was conducted to identify journals according to their country of origin. A WPA Task Force designed a collaborative process to assess distribution and quality of non-indexed LAMIC journals.
Results: Twenty LAMIC were found to present more than 100 publications and a total of 222 indexed psychiatric journals were found, but only nine were from LAMIC. The Task Force received 26 questionnaires from editors of non-indexed journals, and concluded that five journals would meet criteria for indexation.
Conclusion: Barriers to indexation of journals contribute to the difficulties in achieving fair representation in the main literature databases for the scientific production in these countries.

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Key words: indexed psychiatric journals; low- and middle-income countries; psychiatric research; dissemination

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Significant outcomes

- At the time of the search, there were 222 mental health journals indexed in the Medline and/or ISI/Thomson, but only nine (4.1%) were from low- and middle-income countries (LAMIC).
- Not a single low-income country journal was indexed.
- None of the LAMIC in Asia and Africa has a journal indexed in the main international databases despite indications of a good level of scientific production in at least five of these countries, and even though several mental health journals in Africa and Asia apparently meet criteria for indexation.

Limitations

- The scientific production of LAMIC was based on the ISI count from the Psychiatry/Psychology section; criteria used by ISI/Thomson are not clearly defined, and there is a small chance of misclassification of subjects, and/or countries of origin.
- It is possible that mental health articles published in non-psychiatric journals, such as journals of public health and general medicine, were missed in the counting. Also, it is likely that the list of non-indexed journals is incomplete; there may be many other LAMIC journals to be added to the list.
- The replies to the questionnaires sent to editors may not be representative of the non-indexed journals, although the idea here was to identify the best available journals, a task most likely to have been achieved in our study.

Introduction

Mental health publications from low- and middle-income countries (LAMIC) constitute a small proportion of the total research output in internationally accessible literature (1). Publications from LAMIC are poorly represented in mainstream psychiatric journals (2), and whenever available they are mostly led by authors from high-income countries (3), and fail to address public health needs (4). LAMIC are even more under-represented in high-impact psychiatric journals than they are in all international scientific journals (5). This systematic bias in the medical and psychiatric literature (6), where the health priorities of the developed world are taken for granted by editors of international journals, has been labeled institutional racism (7). Nonetheless, studies conducted in LAMIC are essential to cover the full spectrum of psychiatric disorders (6). In addition, locally driven research provides relevant information to guide policymakers in the expansion of cost effective and culturally adapted health services (8).

A major obstacle to disseminating LAMIC research is the scarcity of indexed journals with a strong LAMIC focus. The two most extensively recognized international databases of the medical and biomedical literature are the Medline/Pubmed and the Institute for Scientific Information ISI/Thomson Reuters (9).

Aims of the study

A WPA task force was established in 2008 (including the authors JJM, VP, CK, PT and HH) to promote dissemination of mental health research in LAMIC. The task force began with studies aiming to: i) appraise the quality of the non-indexed LAMIC psychiatric journals to find potential candidates for indexation in the main databases; ii) assess the barriers to indexation of these journals; iii) identify the most productive LAMIC in Africa, Asia, Eastern Europe and Latin America and iv) investigate the relationship between research capacity and the indexation of LAMIC journals in the main databases.

Material and methods

The ISI essential indicators

The indicator of research productivity used to compare the development of mental health research among countries was the total number of papers for each LAMIC appearing in the Psychiatry/Psychology section of the ISI Essential Science Indicators database of Thomson Reuters from 1994 to 2004, ranked by countries. The study should include at least one author with an address from a LAMIC country, and the presence of two LAMIC authors in the same paper would be counted for both countries. All LAMIC were investigated and those presenting more than 100 publications in the period, an arbitrary operational criterion of scientific productivity, were selected for further scrutiny (from 1 January 1994 to 18 May 2004).

Economic and health service indicators

Indicators – including gross domestic product (GDP), research and development expenditures and health expenditures – were extracted from the World Fact Book (10), the Human Development Indicators (11) and the Mental Health Atlas Project (12).

The journals search

A survey in both Medline and ISI/Thomson databases was conducted to identify journals in the field of psychiatry according to their country of origin. The search in Medline was done by entering the expressions 'psychiatry' and 'substance abuse' in the journals database. All journals listed in Science and Social Sciences editions of the JCR for the category Psychiatry were included. Further details of the methodology can be seen elsewhere (13).

A preliminary list of non-indexed journals was derived from a report commissioned by WHO and the Global forum for Health Research (GFHR), on the basis of a hand search of the gray literature from those countries without publications either in Medline or PsycInfo (14). This list was then submitted to the 18 WPA Zonal Representatives, who were asked to identify, with the help of their Member Societies, journals published in the Zone countries, but missing from the list.

Assessing the quality of non-indexed LAMIC psychiatric journals

Editors of non-indexed journals from LAMIC in Africa, Asia, Eastern Europe and Latin America, were invited to complete a specific questionnaire to provide information on the following points: i) the geographical representation of the journal; ii) the affiliation to a professional mental health society; iii) periodicity; iv) the composition of national and international editorial boards; v) the number of original and review articles in publications; vi) the language of publication for original articles and

abstracts; vii) the level of current indexation; and viii) the availability of a friendly access website.

Results

Twenty LAMIC countries (Table 1) were found to present more than 100 counted publications in the ISI Essential Science Indicators: one from Africa, seven from Asia, nine from Eastern Europe and three from Latin America. There are at least 78 non-indexed journals published in these countries, including three in South Africa, 16 in Asia, 11 in Central and Eastern Europe and 48 in Latin America. The smaller number of indexed journals includes five in Central and Eastern Europe and four in Latin America.

Table 1 also shows that the highest health expenditures as a proportion of the GDP are found for Argentina (9.5%), Croatia (9.0%) and South Africa (8.6%). The highest proportions of psychiatrists per 100 000 populations are shown for Argentina (13.6), Russia (13.3), the Czech Republic (12.1), and Hungary (9.0), and the lowest for India (0.2). The application of funding for research is shown as most substantial for the Czech Republic, Hungary, Poland and South Korea. The highest GDP per capita is shown for Kuwait, Singapore and United Arab Emirates. The highest number of publication per million inhabitants was found for Estonia (82.63) and Slovakia (80.66).

Of the 222 indexed psychiatric journals found in the 2007 survey of Medline and ISI/Thomson databases, only nine (4%) were published in middle-income countries, as shown in Table 1. No psychiatric journal from any low-income country was identified in Medline or ISI databases. The LAMIC journals presented in at least one of the two main databases are described in Table 2. Of the five journals from Central and Eastern Europe, two are indexed in both ISI/Medline databases (one from Croatia and one from Russia), and three others indexed in Medline (Hungary, Poland and Turkey). The four indexed journals published in Latin America include two from Brazil, indexed in both

Table 1. The distribution of publications for 20 selected low- and middle-income countries (LAMIC), the number of indexed and non-indexed journals, and the LAMIC social and economical characteristics

	Number of publications in ISI per million inhabitants (psychiatry) 1994–2004†	Number of indexed journals‡ (non-indexed journals)	GDP/per capita U$ dollars§	GERD/GDP¶	Health research expenditure as % total health expenditure††	Health expenditure as % of GDP‡‡	Number of psychiatrists per 100 000‡‡
Africa							
South Africa	21.6	0 (3)	13 000	0.7	1.0	8.6	1.2
Asia							
China	0.78	0 (14)	7600	1.2	1.0	5.5	1.3
India	0.43	0 (1)	3700	0.8	0.8	5.1	0.2
Taiwan	0.02	0 (1)	27 720	2.3	NA	6.2	NA
Republic of Korea	7.55	0 (0)	24 200	2.7	2.0	6.0	3.5
Singapore	64.7	0 (0)	49 900	2.3	NA	3.9	2.3
Kuwait	40.45	0 (0)	55 900	0.4	NA	3.9	3.1
United Arab Emirates	21.86	0 (0)	37 000	NA	NA	3.5	2.0
East-Central – Europe							
Russia	10.27	1 (0)	14 800	1.3	0.3	5.4	13.3
Turkey	7.13	1 (2)	12 000	0.64	1.0	5.0	1.0
Czech Republic	47.06	0 (1)	24 500	1.3	1.6	7.4	12.1
Greece	44.68	0 (0)	30 600	0.64	0.7	4.5	2.1
Slovakia	80.66	0 (0)	20 200	0.65	0.8	5.7	10
Hungary	25.07	1 (3)	19 300	0.95	2.0	6.8	9.0
Poland	6.75	1 (1)	16 200	0.67	1.6	6.1	6.0
Croatia	31.17	1 (4)	15 500	1.0	NA	9.0	8.7
Estonia	82.63	0 (0)	21 800	NA	NA	4.5	2.1
Latin America							
Mexico	7.83	1 (4)	10 600	0.4	1.3	6.1	2.8
Brazil	2.57	2 (18)	8600	1.0	1.5	7.6	4.8
Argentina	3.90	1 (1)	15 000	0.4	0.7	9.5	13.6

ISI, Institute for Scientific Information; GDP, gross domestic product; GERD, gross domestic expenditure on research and development; GERD/GDP, GERD as percentage of GDP; NA, not available.

†ISI Essential Science Indicators database (accessed 18 May 2004).

‡World Psychiatric Association Task Force (13).

§World Factbook (10).

¶UNESCO Science Report (11).

††Global Forum for Health Research (14).

‡‡Atlas Mental Health Project (12).

Table 2. The psychiatric indexed journals from low- and middle-income countries in the two main databases

Title	Country	World Psychiatric Association Zone	Medline	Web of science
Vertex	Argentina	Southern South America	X	
Arquivos de Neuropsiquiatria	Brazil	Southern South America	X	X
Revista Brasileira de Psiquiatria	Brazil	Southern South America	X	X
Psychiatria Danubina	Croatia	Central Europe	X	
Psychiatria Hungarica	Hungary	Central Europe	X	
Salud Mental	Mexico	Mexico, Central America		X
Psychiatria Polska	Poland	Central Europe	X	
Zhurnal Nevrologii i Psikhiatrii	Russia	Eastern Europe	X	X
Turkish Journal of Psychiatry	Turkey	Southern Europe	X	

databases, one from Argentina indexed in the Medline, and the Mexican Salud Mental, indexed in ISI. Except for Latin America where three of the most productive countries (Argentina, Brazil and Mexico) present at least one journal indexed in the main databases, for Asia and Africa there was no clear relationship between indexation and the selected parameters displayed in Table 1, particularly the number of publications.

The WPA task force received 26 questionnaires from editors of LAMIC non-indexed journals (11 from Latin America, seven from Central Europe, four from Asia and four from Africa). The journals were then assessed by members of the committee applying similar criteria as those adopted by the Medline/Pubmed and ISI/Thomson databases. It was concluded by consensus of the Task Force that at least five might be ready for submissions in the two databases: i) three from the Asian region (China, India and South Korea); ii) one from Africa (South Africa); and iii) one from Brazil.

The WPA Task Force qualitative appraisal of the non-indexed LAMIC mental health journals revealed the following main reasons impeding journals to achieve indexation: i) insufficient number and/or quality of articles to meet periodicity (more than four issues per year); ii) a focus on local language; iii) lack of international representation in the editorial board and iv) focusing on quantity rather than quality, i.e. by working with low levels of rejection rates.

Discussion

The search for indexed psychiatric journals in the two international databases found that nine journals out of 222 were from LAMIC, none of which were from a low-income country, or from Asia or Africa. However, the WPA Task Force which reviewed 26 non-indexed LAMIC journals concluded that five journals would likely meet criteria for indexation by Medline and/or ISI/Thomson database (three from the Asian region, one from Africa and one from Latin America). For Asia and Africa, there is no clear relationship between indexation and scientific productivity or selected social and economic characteristics in the countries. Taking into consideration the research capacity of these countries, if the five journals identified by the WPA task force were incorporated in the two international databases there would be more coherence in the distribution of indexed journals across the regions and across these countries.

There are several limitations to address in the findings of this paper. The criteria used by the ISI/Thomson are not clearly defined, and there is a small chance of misclassification of subjects, and/or countries of origin. It is also possible that mental health articles published in non-psychiatric journals, such as journals of public health and general medicine, were missed in the counting. The criterion of 100 counted publications by country over a 10-year period, for establishing scientific productivity was arbitrary, and may be regarded as a low threshold particularly for populous countries like India and China. It is likely that the list of non-indexed journals is incomplete; there may be many other LAMIC journals to be added to the list. However, it is demonstrated that despite a significant level of scientific activity shown by China, India, South Africa and South Korea, none of these countries, and indeed, no LAMIC in the African and Asian regions, is so far represented by a psychiatric journal in the main international databases. This is a further action to be added to the recommendations identified in a recent editorial (15), which pointed out some important steps to decrease the 10/90 divide in global mental health.

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Declaration of interests

None declared.

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a prospective, randomised controlled trial would be most welcome to assist with the choice of bridging anticoagulation.

Andrea Colli correctly points out that the Mitroflow pericardial valve is available in Canada and has recently become available in the USA. Although the Carpentier-Edwards Perimount valve and its variants still account for most pericardial valves implanted in North America, a broader array of bioprosthetic valves has now entered the marketplace.

We adapted the antithrombotic management algorithm presented in figure 2 from the ACC/AHA and ACCP guidelines for patients with prosthetic heart valves. Colli highlights areas of disagreement between the ACC/AHA and ACCP guideline recommendations regarding aspirin dosing. The algorithm presented is based on our own critical review of the evidence.

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A global perspective on the dissemination of mental health research

As the Movement for Global Mental Health gains momentum (Aug 22, p 587),[1] the striking under-representation of low-income and middle-income countries in published psychiatric research becomes evident.

In 2007, we did a survey in Medline and Web of Science to identify journals in psychiatry and their country of origin.[2] We found 222 indexed publications; of these, 213 originated from high-income countries and only nine (4%) from middle-income countries. None was from a low-income country. Information obtained from the World Psychiatric Association (WPA) and the Global Forum for Health Research indicated the existence of another 118 unindexed psychiatric publications from low-income or middle-income countries. A WPA taskforce was appointed in 2008 to promote the dissemination of research from low-income and middle-income countries and is working together with journal editors[3] to improve the quality of such publications and to strengthen their chances of being indexed.[4]

This year, we repeated the survey using the same strategy, paying particular interest to a follow-up of the unindexed publications from low-income and middle-income countries. We found that, in addition to the nine pre-existing indexed journals, four new publications were included in the databases: one from Brazil, two from South Africa, and one from Turkey. Also, three other journals that were indexed only in Medline 2 years ago are now part of the Web of Science database: one each from Croatia, Poland, and Turkey. However, despite these inclusions, the proportion of journals from low-income and middle-income countries remains virtually unchanged (13 of 235 [5·5%]). The scarcity of indexed journals with a strong focus on low-income or middle-income countries still represents a major obstacle[5] to the enhancement of the international and multicultural aspects of psychiatric research.

All authors are members of the World Psychiatric Association Publications Task Force for Research Dissemination.

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1 The Lancet. Movement for global mental health gains momentum. *Lancet* 2009; **374:** 587.
2 Kieling C, Herrman H, Patel V, Mari JJ. Indexation of psychiatric journals from low- and middle-income countries: a survey and a case study. *World Psychiatry* 2009; **8:** 40–44.
3 Mari JJ, Patel V, Kieling C, et al. The 5/95 gap on the dissemination of mental health research: the World Psychiatric Association (WPA) task force report on project with editors of low and middle income (LAMI) countries. *Afr J Psychiatry* 2009; **12:** 33–39.
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5 Razzouk D, Gallo C, Olifson S, et al. Challenges to reduce the '1090 gap': mental health research in Latin American and Caribbean countries. *Acta Psychiatr Scand* 2008; **6:** 490–98.

The state of health in South Africa: quo vadis?

The Lancet's Series on health in South Africa is most timely and welcome. Indeed, it serves as a beacon of hope amid a background of health-care system failures.

The South African constitution, launched in 1996, was lauded for being progressive and visionary: for enshrining the rights of citizens, ensuring access to "health care services, including reproductive health", "sufficient food and water", and "social security, including, if they are unable to support themselves and their dependants, appropriate social support".

However, the South African reality has been that, despite increased investments and improved social policies, the country has failed to resolve its health disparities. Such has been the paradox of the health system in South Africa that, against the backdrop of many examples of brilliant stewardship and service excellence, there is a flagrant, undeniable, and widespread smog of mismanagement, neglect and abuse

For ***The Lancet* Series on health in South Africa** see http://www.thelancet.com/series/health-in-south-africa

Working with the World Psychiatric Association to promote dissemination of mental health research worldwide

Trabalhando com a Associação Mundial de Psiquiatria para promover a disseminação da pesquisa em saúde mental em nível mundial

The dissemination of research findings is important to improving mental health in all countries.[1] Publishing local research information in local scientific journals can influence policy and practice at national and regional levels and encourage the expansion of cost-effective and culturally appropriate health services. International and multicultural psychiatric research is also required to understand the determinants of mental health and the options for prevention and treatment of illnesses.[2,3]

Where the need to improve mental health is greatest, however, the least research is available. There is a striking under-representation of low- and middle-income countries (LAMIC) in published psychiatric research.[2-4] Barriers to the indexation of journals appear to contribute to inequitable representation of the science produced in LAMIC in the main literature databases.[2]

The World Psychiatric Association (WPA) decided to investigate this under-representation and considered support for improved research dissemination, building on the work from the World Health Organization (WHO)[1] and others. The Revista Brasileira de Psiquiatria (RBP) was one of the first LAMIC publications to be indexed in the major databases. Its achievement demonstrates the possibility for LAMIC journals to be included in the major databases as well as the peer support needed by journal editors in many countries.

The WPA's publications committee conducted a survey in the two most extensively recognised international databases of the medical and biomedical literature, Medline and ISI Web of Science (Medline/Pubmed, and the Institute for Scientific Information/ Thomson Reuters). It found 222 indexed psychiatric journals. Of these, 213 originated from high-income countries and only nine (4.1%) were from middle-income countries: five from the European region; and four from Latin America (including RBP). None came from low-income countries and none were identified in the Asian or African regions. At the same time, the WPA zonal representatives and a project of the World Forum for Global Research and the World Bank together identified 118 LAMIC psychiatric journals not indexed in Medline or ISI.[4]

The committee led by CK established a directory of mental health and psychiatric journals worldwide to be linked to the WPA website. The WPA has 130 member societies in 110 countries, and with the generous help of its zonal representatives will maintain and develop the directory as a basis for advocacy and action.

A WPA publications taskforce was appointed in 2008 to promote the dissemination of research from LAMIC. The taskforce began to work together with journal editors to improve the quality of their publications and strengthen their chances of being indexed in international databases.[5] Colleagues from the WPA and the Global Mental Health Movement led by JJM helped to contact editors from LAMIC in Africa, Asia, Eastern Europe, and Latin America to identify potential journals to target for indexation (Medline and ISI). The task force appraised the quality of 26 non-indexed journals whose editors were interested to participate and invited eight editors, two from each region, to attend a workshop at the World Congress of Psychiatry in 2008. The quality criteria included: affiliation to a professional mental health society; regular publication of at least 4 issues per year; comprehensive national and international editorial boards; publication of original articles, or at least abstracts, in English; some level of current indexation; evidence of a good balance between original and review articles in publications; and a friendly-access website. Two of the authors (JJM, former editor of RBP and CK, current associate editor) described the experience of RBP in improving the journal on each of these criteria, and the other editors described the work of their journals. Discussion established an atmosphere of peer support. Support continues with the taskforce offering continued advice through email and other forms of contact.

The taskforce aims now to offer concentrated support for those selected journals, and to assist all LAMIC mental health editors. Several journals including some whose editors have worked with the WPA project have achieved indexation in the past two years.

The survey was repeated in 2009. Four publications were added to the databases: one from Brazil, two from South Africa, and one from Turkey. Three other journals that were indexed only in Medline two years ago are now part of the ISI database: one each from Croatia, Poland, and Turkey. Despite these inclusions, the proportion of journals from LAMIC is almost unchanged (13 of 235 [5.5%]).[3] Subsequently, the Indian Journal of Psychiatry achieved indexing in Medline.

The next step is to scale up the support for journal editors in LAMIC. The WPA taskforce provides a framework for this. The work can be monitored through the database and the network of editors. The taskforce will continue its efforts with workshops at major WPA meetings to include new editors as well as those who can describe their successful stories. It will pilot the establishment of editorial fellowships for junior editors in the office of high-quality LAMIC journals. Journals with a record in achieving high standards can join RBP, and together with funding agencies, partner with journals from LAMIC to improve their quality and strengthen their chances of being indexed.

The WPA exists to promote the advancement of psychiatry and mental health for all peoples of the world (www.wpanet.org). As part of its work plan, it continues to encourage efforts to offer support to psychiatric journals in LAMIC.

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Disclosures

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Helen Herrman	University of Malbourne	-	-	-	-	-	-
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Jair de Jesus Mari	UNIFESP	FAPESP CNPq CAPES	-	AstraZeneca Eli Lilly Janssen	-	-	-

** Modest*
*** Significant*
**** Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.*
Note: CNPq = Conselho Nacional de Desenvolvimento Científico e Tecnológico; FIPE-HCPA = Fundo de Incentivo à Pesquisa do Hospital de Clínicas de Porto Alegre; FAPESP = Fundação de Amparo à Pesquisa do Estado de São Paulo; CAPES = Coordenação de Aperfeiçoamento de Pessoal de Nível Superior.

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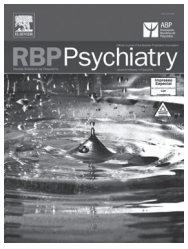

EDITORIAL

The role of the World Psychiatric Association in facilitating development of psychiatric publications from low- and middle-income countries

A major issue for the discipline of Psychiatry is the paucity of credible psychiatric publications from low- and middle-income countries (LAMIC). The vast majority of psychiatry publications emanate from developed countries. This renders the developing world underserviced and potentially subordinate to the developed world's agenda and priorities. This has been recognized and subjected to formal study, which established the so called 5/95 gap,[1] whereby 95% of indexed journals emanate from the developed world. Such research arose from a task force appointed by the Publications program within the World Psychiatric Association (WPA), itself inspired by research from the World Health Organization (led by Shekhar Saxena) that established the "10/90 divide" in publication of research articles.[1] Subsequent to this research, a decision was taken to actively facilitate development of psychiatric journals from low and middle income countries with the intention of enhancing their potential for indexation in major databases.[2] To this end, a series of workshops were held at various WPA meetings.[3,4] At the 15th World Congress of Psychiatry held in Buenos Aires (September 2011), the third workshop in this series was hosted by the WPA Publications program[3,4] with the purpose – in this instance – of evaluating and providing guidance to South American psychiatric journals with potential for indexing in databases, such as Medline and the Web of Science℠ (formerly the Institute for Scientific Information®). Previous workshops involved journals from Europe, Africa and Asia[3,4] – several of which subsequently achieved indexation in either Medline or WoS or both (*African Journal of Psychiatry* – South Africa; *Indian Journal of Psychiatry* – India; *The East Asian Archives of Psychiatry* – Hong Kong; *Klinik Pskofarmakoloji Bulteni* – Turkey).

Most recent research has established the existence of some 235 publications related to psychiatry, which are indexed in either Medline or the WoS.[2] The number of indexed psychiatry journals from low- and middle-income countries (LAMIC) has certainly increased (e.g., from 9 of 222 in 2007 to 13 of 235 in 2009),[2] with a number of these publications having participated in the WPA facilitated workshops. However, despite the increase in number, the percentage of LAMIC indexed publications relative to the total number of indexed publications has not changed significantly and remains at just over 5%.[2] Indexation would appear to be a proxy for quality, and there is an existing hegemony of databases that confer this. However, the emergence of developing world scientific databases such as SciElO (www.scielo.br/rbp) – which whilst Brazilian in origin increasingly extends beyond Brazil into South America together with potential partnerships in Africa (specifically South Africa) – portends the creation of databases that without sacrificing quality will be more orientated towards the developing world. The fact that only about 20% of all psychiatric publications appear in the major databases[5] with approximately only 5% originating from the developing world[2] does not diminish the significance of the non-indexed publications. These publications have undoubtedly the potential to contribute to the discipline at a local level. Whether if such contribution can be meaningful without indexation remains to be understood. Intuitively, one may not surmise and if indeed so – this would require remediation, not simply to attain indexation, but ultimately to meet the minimum standards required for credibility and thus utility. In this regard, the workshops facilitated by the WPA Publications program task force have demonstrated a measure of success, not only to the participant journals that have subsequently achieved indexation, but also in providing a forum for supporting editors who have a true passion and commitment to support the dissemination of local content – usually with very limited resources and without formal training or assistance. With a global agenda for the discipline of Psychiatry, the WPA and other international organisations have an important role to play in actively facilitating a process that appears to represent a relatively inexpensive way of enhancing patient outcomes – healthy, vibrant and credible local publications. A start has been made, and one would hope that what has been achieved to date will serve as a basis for further development of the initiative.

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*** Significant: Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.

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Anexo #4. Instrumentos utilizados na coleta de dados do artigo #3

CENTRO DE PESQUISAS EPIDEMIOLÓGICAS - UFPEL
ESTUDO LONGITUDINAL MATERNO-INFANTIL - 1993
QUESTIONÁRIO PERINATAL

Nº _ _ _ _

1. Hospital: (1) Benef. Portuguesa (2) Santa Casa (3) Hosp. Clínicas (4) FAU (5) Piltcher (6) Outro _____ — HOSP _

2. Dia do nascimento: _ _/_ _/_ _ — DATNASC _ _/_ _/_ _

3. Dia da semana: (1) Seg (2) Ter (3) Qua (4) Qui (5) Sex (6) Sáb (7) Dom — DIASEM _

4. Hora do nascimento: _ _ ._ _ h — HORNASC _ _._ _

5. Nome da Mãe: _____

6. Nome do RN: _____

Vamos começar conversando sobre o seu parto

7. Quantos filhos a senhora teve neste parto? — PARTO _
(1) único (2) múltiplo2 (3) múltiplo3

8. Seu filho nasceu vivo? — NASCEU _
(1) Sim (2) Não

SE NASCEU VIVO NÃO FAZER AS PERGUNTAS DO QUADRO

Se nasceu morto, isto aconteceu antes do trabalho de parto ou durante o trabalho de parto? — NASMORT _
(1) Antes (2) Durante (9) Não sabe (8) NSA

A senhora tem alguma idéia de qual foi o problema ou o que possa ter causado a morte do nenê? — MORTIDEA _
(1) Sim (2) Não (8) NSA

SE SIM: Qual é a sua idéia? _____ — QUALIDEA _ _

_____

_____

_____ (88) NSA

Agora vamos conversar um pouco como foi seu trabalho de parto.

9. Quando o médico ou a enfermeira lhe examinaram no hospital, estava tudo bem com o seu nenê? NENEBEM __
(1) sim (2) não (9) ignorado

SE NÃO: A senhora sabe nos dizer o que havia de errado?

( ) Sim _____ ERRADO __
(0) Não (8) NSA (9) Ignorado

10. O médico ou a enfermeira ouviram o coração do nenê batendo, dentro da sua barriga? BCF __
(1) sim (2)não (9)ignorado

11. Depois que internou quem do hospital acompanhou a senhora durante o trabalho de parto até ganhar o nenê? ACOMP __
(1) médico (9) não sabe quem foi
(2) enfermeira ou parteira (4) ninguem acompanhou
(3) estudante

12. Quem fez o seu parto? QUEMPAR __
(1) médico (3) estudante
(2) parteira, auxiliar de enfermagem ( ) outro _____

13. Na hora do nascimento, quem atendeu o nenê na sala de parto? NASC __
(1) pediatra (4) estudante
(2) enfermeira ou parteira ( ) outro _____
(3) obstetra (9) Ignorado

14. O parto foi normal ou cesariana? PARTIP __
(1) normal (2) cesariana

SE O PARTO FOI NORMAL

15. Fez episiotomia (foi cortada)? FEZEPIS __
(1) Sim (2) Não (9) Não sabe (8) NSA

16. Foi usado fórceps (ferros)? FORCEPS __
(1) Sim (2) Não (9) Não sabe (8) NSA

17. Foi feito analgesia (anestesia)? ANALG __
(1) Sim (2) Não (9) Não sabe (8) NSA

18. SE FEZ CESARIANA: Qual foi o motivo para fazer cesariana? MOTCESAR __
(1) sofrimento fetal (11) diabete materna
(2) desproporção feto-pélvica (12) repetição
(3) distócia de apresentação (13) para ligar trompas
(4) hemorragia materna (14) mãe pediu
(5) parada de progressão (15) médico quis
(6) eclâmpsia, pré-eclâmpsia ( ) outra _____
(7) pós-maturidade (88) NSA
(10) morte fetal (99) Ignorado

19. O médico rompeu a bolsa ou lhe colocou soro para começar o trabalho de parto? INDUZ __
(1) Rompeu bolsa (2) Soro (3) Ambos (4) Não

20. SE PARTO FOI INDUZIDO (soro): Qual foi a razão para induzir? — PARTINDU __
(1) pós-maturidade (6) médico quis
(2) pré-eclâmpsia (7) parada de progressão
(3) bolsa rota ( ) outra: _____
(4) iso-imunização Rh (88) NSA
(5) morte fetal (99) Não sabe

21. <Criança> apresentou ou esta apresentando algum problema durante estada no hospital que a obrigou a ir para o berçário ou UTI: — PROBRN __
(1) sim, berçário (2) sim, UTI (3) alojamento conjunto (8) NSA

SIM: Qual foi o problema?

22. Prob. 1 : _____ (8) NSA — PROBRN1 __

23. Prob. 2 : _____ (8) NSA — PROBRN2 __

24. Prob. 3 : _____ (8) NSA — PROBRN3 __

Agora nós vamos conversar sobre a sua gravidez:

25. Qual foi a data da sua última menstruação? __ __/__ __/__ __ — DUM __ __/__ __/__ __

26. A senhora fez alguma consulta de pré-natal durante a gravidez? — CONSPRE __
(1) Sim (2) Não

SE NÃO FEZ CONSULTA PULE PARA A PERGUNTA 39

27. Quantas consultas de pré-natal a senhora fez ? __ __ (88=não fez pré-natal) — NUMCONS __ __

28. Em que mês da gravidez a senhora fez a primeira consulta de pré-natal? — MESCONS __ __
__ __ (00 = primeiro mês; 88 = NSA; 99 = ignorado)

Durante as consultas de pré-natal o médico (ou a enfermeira) alguma vez?

29. Perguntou data da última menstruação?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI1 __
30. Verificou o seu peso?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI2 __
31. Mediu a sua barriga?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI3 __
32. Mediu a sua pressão?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI4 __
33. Fez exame ginecológico (por baixo)?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI5 __
34. Receitou remédio p/anemia (ferro)?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI6 __
35. Receitou vitaminas?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI7 __
36. Orientou sobre a amamentação?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI8 __
37. Examinou seus seios?	(1) sim	(2) não	(9) ignorado	(8) NSA	QUALI9 __

38. Mandou fazer vacina contra o tétano? (1) sim (2) não (9) ignorado (8) NSA — QUALI10 __

39. SE FEZ VACINA ANTITETÂNICA: Quantas doses recebeu? — DOSES __
__ doses (0 = não recebeu; 9 = ignorado; 7 = já imunizada)

A senhora teve algum dos seguintes problemas durante esta gravidez?

40. pressão alta (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — HIPERT __

41. diabete(açúcar no sangue) (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — DIABET __

42. ameaça de aborto (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — AMABORT __

43. inf. urinária (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — INFECURI __

44. outra infecção (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — OUTINF __

45. Qual? _____ (8) NSA (9) Ignorado — QUALINF __

46. anemia (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — ANEMIA __

47. outro (1) sim, tratado (2) sim, não tratado (3) não (9) não sabe — OUTRPROB __

48. Qual? _____ (8) NSA (9) Ignorado — PROBLEM __

49. A senhora esteve internada alguma vez durante esta gravidez? — INTERN __
(1) Sim (2) Não

50. SE SIM: Quantas internações? __ __ internações (00 = nenhuma) — NUMINT __ __

Qual foi o problema?

51. Prob. 1: _____ (8) NSA — INTPROB1 __

52. Prob. 2: _____ (8) NSA — INTPROB2 __

DADOS ANTROPOMÉTRICOS DA MÃE:

53. Quanto a senhora estava pesando logo antes de engravidar ou na primeira consulta do pré-natal? __ __ __, __ kg — PESOMAE __ __ __, __

54. Peso antes do parto: __ __ __ , __ kg — PESOMAE2 __ __ __, __

55. Altura: __ __ __ ,__ cm — ALTMAE __ __ __, __

Agora vamos conversar sobre outras vezes que a senhora pode ter engravidado:

56. Quantas vezes a senhora já engravidou, contando com esta gravidez? Quero que conte todas as gravidezes, até as que não chegaram ao final. — NUMGRAV __ __
__ __ vezes

SE ESTA É A PRIMEIRA GRAVIDEZ, PULAR PARA A PERGUNTA 80

57. Quantos filhos a senhora tem? __ __ filhos — NUMFILHO __ __

Quero que a senhora me informe a data de nascimento, o sexo de seus filhos e se o parto foi normal ou cesariana

58. Filho 1 data de nascimento __ __/ __ __/ __ __ (01/01/01) NSA — sexo __ (1) M (2) F (8) NSA — DATANAS1 __ __/ __ __/ __ __
59. Parto (1) Normal (2) Cesariana — SEXO1 __ PARTFI1 __

60. Filho 2 data de nascimento __ __/ __ __/ __ __ (01/01/01) NSA — sexo __ (1) M (2) F (8) NSA — DATANAS2 __ __/ __ __/ __ __
61. Parto (1) Normal (2) Cesariana — SEXO2 __ PARTFI2 __

62. Filho 3 data de nascimento __ __/ __ __/ __ __ (01/01/01) NSA — sexo __ (1) M (2) F (8) NSA — DATANAS3 __ __/ __ __/ __ __
63. Parto (1) Normal (2) Cesariana — SEXO3 __ PARTFI3 __

64. Filho 4 data de nascimento __ __/ __ __/ __ __ (01/01/01) NSA — sexo __ (1) M (2) F (8) NSA — DATANAS4 __ __/ __ __/ __ __
65. Parto (1) Normal (2) Cesariana — SEXO4 __ PARTFI4 __

66. Filho 5 data de nascimento __ __/ __ __/ __ __ (01/01/01) NSA — sexo __ (1) M (2) F (8) NSA — DATANAS5 __ __/ __ __/ __ __
67. Parto (1) Normal (2) Cesariana — SEXO5 __ PARTFI45 __

68. Qual a data de nascimento, tipo de parto e sexo de seu último filho antes desta gravidez? Data de nascimento: __ __/ __ __/ __ __ (01/01/01) NSA — Sexo __ (1) M (2) F (8) NSA — DATAUL __ __/ __ __/ __ __ SEXULT __
69. Parto (1) Normal (2) Cesariana — PARTULT __

70. A senhora foi cortada (episiotomia) em algum parto anterior? Quantas? __ __ episiotomias (nenhum = 00) (88) NSA (99) Ignorado — EPISIO __ __

71. A senhora teve algum aborto? Quantos? __ __ abortos (00=nenhum; 99=IGN 88=NSA) — ABORTO __ __

72. A senhora teve algum filho que nasceu morto com sete meses ou mais de gravidez? Quantos? __ __ natimortos (00 = nenhum; 99 = ignorado 88 = NSA) — NATMORT __ __

73. A senhora teve algum filho que nasceu com menos de dois quilos e meio? Quantos? __ __ baixo peso (00 = nenhum; 99 = ignorado 88 = NSA) — BAIPESO __ __

74. A senhora teve algum filho que nasceu antes do tempo com vida? SE SIM __ __ prematuros (00 = nenhum; 99 = ignorado 88 = NSA) — PREMATI __ __

SE SIM: Por que foi que ele(s) nasceu (nasceram) antes do tempo?

(1) começou com contrações uterinas e entrou em trabalho de parto
(2) rompeu a bolsa antes do tempo (quebrou água)
(3) médicos tiveram que fazer cesariana ou tirar a criança porque apresentou problema de saúde
( ) outro _____ (8) NSA (9) Ignorado

75. Prematuro 1: ___ CAUSPRE1 __

76. Prematuro 2: ___ CAUSPRE2 __

77. Prematuro 3: ___ CAUSPRE3 __

78. A senhora teve algum filho antes desta gravidez que nasceu vivo mas faleceu antes de completar 1 ano de idade? MORTINF __
__ morte infantil (0) Nenhum (8) NSA

79. SE SIM: Que idade tinha(m) quando faleceu (faleceram)?
__ __ meses __ __ dias (88,88 = não se aplica) IDAMES1 __ __ IDADIA1 __ __
__ __ meses __ __ dias (88,88 = não se aplica) IDAMES2 __ __ IDADIA2 __ __
__ __ meses __ __ dias (88,88 = não se aplica) IDAMES3 __ __ IDADIA3 __ __

Agora nós vamos conversar sobre como a senhora se sentiu durante esta gravidez:

80. A senhora planejou ter este filho ou engravidou sem querer? PLANEJ __
(1) planejou (2) sem querer (3) mais ou menos

81. Como foi a reação do pai do nenê quando soube da gravidez? REACPAI __
(1) ficou contente (2) indiferente (3) não gostou

82. Como a senhora sentiu que foi o apoio que recebeu do pai do nenê durante a gravidez? APOPAI __
(1) muito apoio (3) nenhum apoio (4) mais ou menos
(2) pouco apoio (8) NSA (9) ignorado

83. Como a senhora sentiu que foi o apoio que recebeu dos seus familiares durante a gravidez? APOFAM __
(1) muito apoio (3) nenhum apoio (4) Mais ou menos
(2) pouco apoio (8) NSA (9) ignorado

84. Como a senhora sentiu que foi o apoio que recebeu dos seus amigos ou vizinhos durante a gravidez? APOAMIG __
(1) muito apoio (3) nenhum apoio (4) Mais ou menos
(2) pouco apoio (8) NSA (9) ignorado

85. Durante o trabalho de parto já no hospital a senhora teve ao seu lado alguma pessoa da sua família ou algum amigo? TRABPESS __
(1) Sim (2) Não

86. SE SIM: Quem foi esta pessoa? _____ QUEMPESS __

Agora vou lhe fazer algumas perguntas sobre seu trabalho durante a gravidez

87. A senhora trabalhou fora de casa durante a gravidez? TRABFOR __
(1) Sim (2) Não (3) Estudante
(4) sim, em casa, para fora ( ) Outra _____

SE NÃO TRABALHOU, PULAR PARA PERGUNTA 97

88. Quantos meses durante a gravidez trabalhou fora? __ meses (0) NSA TRABMES __

89. Quantos dias por semana trabalhou fora? __ dias (8) NSA — TRABSEM __

90. Quantas horas por dia trabalhou fora? __ __ horas (88) NSA — TRABHORS __ __

91. Que tipo de trabalho a senhora fez? _____ — TRABTIP __ __ __

92. Durante o seu trabalho a senhora tinha que ficar a maior parte do tempo em pé? — TRABPE __
(1) Sim (2) Não (8) NSA

93. Durante o seu trabalho a senhora tinha que levantar coisas pesadas? — TRABPES __
(1) Sim (2) Não (8) NSA

94. Durante o seu trabalho a senhora tinha que ficar em lugar barulhento? — TRABARU __
(1) Sim (2) Não (8) NSA

95. Durante o seu trabalho a senhora usava máquinas que vibram? — TRABVIBR __
(1) Sim (2) Não (8) NSA

Agora eu gostaria de saber se no teu trabalho as pessoas fumavam ou não.

96. Durante a gravidez outras pessoas costumavam fumar na mesma sala em que tu estavas trabalhando? — FUMTRAB __
(1) Sim, a maior parte do tempo (2) Nunca (3) às vezes (8) NSA

Agora vamos conversar sobre seu trabalho de casa durante a gravidez:

97. Quem é que fez o trabalho de casa para sua família? — TRABCAS __
(1) mãe mesma
(2) mãe fez parte do trabalho
(3) outra pessoa

Agora vou lhe fazer algumas perguntas sobre seu trabalho em casa e gostaria que a senhora me respondesse se faz esse tipo de trabalho todos os dias, de vez em quando ou nunca

SE FEZ O TRABALHO DOMÉSTICO:

Que atividades realizava em casa durante a gravidez?

98. Cozinhar	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	COZIN __
99. Lavar louça	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	LAVLOU __
100. Secar louça	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	SECLOU __
101. Estender roupa	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	ESTROUP __
102. Lavar roupa	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	LAVROUP __
103. Passar roupa	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	PASROUP __
104. Arrumar a casa (camas, pó, varrer)	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	ARRCASA __
105. Faxina da casa (encerar, lavar)	(1) sim, todos os dias	(2) sim, alguns dias/semana	(3) não	FAXCASA __

106. A senhora considera que o seu trabalho em casa era: (*Ler as opções*) TRABCAS2 __
(1) muito pesado (3) leve (8) NSA
(2) pesado (4) muito leve

Agora eu fazer algumas perguntas sobre seus hábitos. Eu gostaria que a senhora pensasse em sua gravidez como se ela fosse dividida em três partes: do começo aos 3 meses, dos 4 aos 6 meses e dos 7 meses até o fim.

107. A senhora fumou durante a gravidez? (1) sim (2) não FUMOU __

SE NÃO FUMOU PULAR PARA A PERGUNTA 123

108. A senhora costumava fumar nos primeiros 3 meses desta gravidez? FUMAVA1 __
(1) Sim (2) Não, pular para a pergunta 113 (8) NSA

109. SE SIM: Fumava todos os dias? FUMTODO1 __
(1) Sim (2) Não (8) NSA

110. SE SIM: Quantos cigarros fumava por dia: __ __ cigarros (88) NSA CIGDIA1 __ __

111. SE NÃO: Quantos dias por semana fumava? __ dias (8) NSA DIASEM1 __

112. Quantos cigarros fumava por dia? __ __ cigarros (88) NSA CIGDIS1 __ __

113. A senhora costumava fumar dos 4 aos 6 meses desta gravidez? FUMAVA2 __
(1) Sim (2) Não, pular para a pergunta 118 (8) NSA

114. SE SIM: Fumava todos os dias? FUMTODO2 __
(1) Sim (2) Não (8) NSA

115. SE SIM: Quantos cigarros fumava por dia: __ __ cigarros (88) NSA CIGDIA2 __ __

116. SE NÃO: Quantos dias por semana fumava? __ dias (8) NSA DIASEM2 __

117. Quantos cigarros fumava por dia? __ __ cigarros (88) NSA CIGDIS2 __ __

118. A senhora costumava fumar dos 7 meses até o fim da gravidez? FUMAVA3 __
(1) Sim (2) Não, pular para a pergunta 123 (8) NSA

119. SE SIM: Fumava todos os dias? FUMTODO3 __
(1) Sim (2) Não (8) NSA

120. SE SIM: Quantos cigarros fumava por dia: __ __ cigarros (88) NSA CIGDIA3 __ __

121. SE NÃO: Quantos dias por semana fumava? __ dias (8) NSA DIASEM3 __

122. Quantos cigarros fumava por dia? __ __ cigarros (88) NSA CIGDIS3 __ __

123. O seu marido/companheiro fumou durante esta gravidez? COMPFUMO __
(1) sim (2) não (8) Não tem marido/companheiro

124. SE SIM: Quantos cigarros ele fumava por dia? __ __ cigarros (00) NSA CIGCOMP __ __

Agora vou lhe fazer algumas perguntas sobre chimarrão.

125. A senhora costumava tomar chimarrão durante a gravidez? CHIMA1 __
(1) Sim, (2) Não, pular para a pergunta 128

126. SEM SIM: Quantos dias por semana: __ dias/semana (7) Todos (8) NSA MCHIMA1 __

127. Com quantas pessoas a senhora costumava repartir o mate? __ __ pessoas REPAMATE __ __
(00 = nenhuma; 99 = não lembra; 88 = não se aplica)

Agora vou lhe fazer algumas perguntas sobre bebidas de álcool.

128. A senhora costumava beber bebida de álcool durante a gravidez? BEBALC __
(1) Sim (2) Não, pular para a pergunta 130

SE RESPONDEU SIM:

Para o quadro a seguir, formular as perguntas na seguinte ordem:

- Que bebida a senhora tomou?
- Em que tipo de vasilha a senhora costumava tomar (citar o nome da bebida)?
  - (1) Copo comun (200ml)
  - (2) Taça (cálice)
  - (3) Martelo (100ml)
  - (4) Lata (350, 355ml)
  - (5) Garrafa pequena (300ml)
  - (6) Garrafa (600, 720ml)
  - (7) Outro: _____
- Quantos (nome do recipiente) a senhora costumava tomar por dia?

	Recipiente	N°/dia/sem	N°/dia
Vinho (1) Sim (2) Não			
Cerveja (1) Sim (2) Não			
Bebidas destiladas (uísque, vodca, rum, cachaça...) (1) Sim (2) Não			
Outra: _____ (1) Sim (2) Não			

(8888 = NSA)

VINHO _/ _/ _/ _ _

CERVA _/ _/ _/ _ _

DESTI _/ _/ _/ _ _

OUTBEB _/ _/ _/ _ _

129. Quantos <nome do recipiente> são necessários para que a senhora sinta o efeito da bebida? _ _ recipientes (88 = NSA; 99 = Ignorado) — RECIP _ _

Agora vou lhe fazer algumas perguntas sobre asma ou bronquite.

130. A senhora tem, ou já teve, asma ou bronquite? — TEMASM _
(1) Sim, tem (2) sim, já teve (3) Não

SE NÃO TEVE ASMA OU BRONQUITE PULAR PARA A PERGUNTA 137

131. SE SIM: Sua asma ou bronquite foi confirmada por médico? — ASMCONF _
(1) sim (2) não (8) NSA

132. A senhora teve alguma crise de asma ou bronquite durante esta gravidez? — ASMGRAV _
(1) Sim (2) Não (8) NSA

133. A senhora consultou com médico alguma vez durante a gravidez por problema de asma ou bronquite? — CONSGRAV _
(1) Sim (2) Não (8) NSA

134. A senhora tomou algum remédio para asma ou bronquite durante a gravidez? — REMGRAV _
(1) Sim (2) Não

135. SE SIM: Qual foi o remédio? _____ (8) NSA — NOMREM _

136. Quanto tempo faz desde que a senhora teve a última crise de asma ou bronquite? — TEMPCRI1 _ _
_ _ anos _ _ meses 88, 88 = NSA — TEMCRI2 _ _

Agora gostaria de lhe fazer algumas perguntas a respeito da renda da família

137. No mês passado, quanto receberam as pessoas da casa ?
Pessoa1 Cr$ _ _ _ _ _ _ _ _ por mês _ _, _ salários mínimos — RENDA1 _ _, _
Pessoa2 Cr$ _ _ _ _ _ _ _ _ por mês _ _, _ salários mínimos — RENDA2 _ _, _
Pessoa3 Cr$ _ _ _ _ _ _ _ _ por mês _ _, _ salários mínimos — RENDA3 _ _, _
Pessoa4 Cr$ _ _ _ _ _ _ _ _ por mês _ _, _ salários mínimos — RENDA4 _ _, _
00 = NSA

138. A família tem outra fonte de renda?
Cr$ __ __ __ __ __ __ __ __ por mês __ __, __ salários mínimos
Cr$ __ __ __ __ __ __ __ __ por mês __ __, __ salários mínimos
00 = NSA

RENDAAD1 __ __, __
RENDAAD2 __ __, __

139. Quem teve a maior renda?
(1) Pai (2) Mãe (3) Outro _____

MAIOREND __

Se a maior renda for de outro membro da família que não pai e mãe, fazer a pergunta seguinte

140. Até que série <pessoa> completou na escola?
__ __ série __ grau (00 = sem escolaridade) (88) NSA

SERIEPES __ __
GRAUPES __

Agora vamos conversar sobre o trabalho da pessoa com maior renda na casa

AS PERGUNTAS 141 À 145 REFEREM-SE AO TRABALHO ATUAL, OU AO ÚLTIMO TRABALHO DO CHEFE DA FAMILIA

141. Encontra-se trabalhando no momento?
(1) sim (2) não, desempregado há __ __ meses (3)aposentado
(4) encostado (5) estudante ( ) outro (88) NSA

TRABPAI __
DESEMP __ __

142. Qual o tipo de firma onde ele trabalha? _____

FIRMA __ __

143. Que tipo de trabalho ele faz? _____

OCUPAÇÃO __ __ __

144. Ele é patrão, empregado ou trabalha por conta?
(1) empregado (3) conta própria (5) parceiro ou meeiro
(2) empregador (4) biscateiro

POSIÇÃO __

Fazer a pergunta seguinte somente se o chefe de família for empregador ou trabalha por conta própria

145. O chefe da família emprega ou contrata empregados? Quantos __ __ empregados
(00 = nenhum 88 = NSA; 99 = ignorado)

NUMTRAB __ __

Agora gostaria de saber como a senhora está hospitalizada

146. A senhora está hospitalizada como INPS, particular ou convênio?
(1) INSS (2) INSS + diferença
(3) Particular (4) Seguro Saúde
(5) Convênios ( ) Outro _____

TIPINTER __

147. A senhora está pagando para o médico obstetra?
(1) Sim. (2) Não

PAGOBST __

148. SE SIM: Por quê?
(1) porque ele é particular
(2) para fazer cesariana
(3) para ligar trompas
( ) outro _____ (8) NSA

PORQUE __

Agora vamos conversar um pouco sobre a senhora e o pai da <criança>

149. Qual é a sua idade? __ __ anos — IDADMAE __ __

Com quem a senhora vive?

150. Com marido/companheiro (1) Sim (2) Não — VIVMAR __

151. Com familiares (1) Sim (2) Não — VIVFAM __

152. Com outros (1) Sim (2) Não — VIVOUT __

153. Filhos (1) Sim (2) Não — VIVFIL __

154. Até que série a senhora completou na escola? — SERIEMA __
__ série do __ grau (0 = sem escolaridade) — GRAUMAE __

155. Qual é o nome do Pai da <criança> _____

156. Qual a idade dele? __ __ anos — IDADPAI __ __

157. Até que série ele completou na escola? — SERIEPAI __
__ série do __ grau (0 = sem escolaridade; 9 = ignorado) — GRAUPAI __

158. Qual é a cor do pai da <criança>: (1) branca (2) negra (3) outra — CORPAI __

159. Cor da mãe: (1) branca (2) negra (3) outra — CORMAE __

Agora vamos conversar um pouco sobre bico e amamentação

160. A senhora pretende dar bico ou chupeta para o nenê? — PRETBICO __
(1) Sim (2) Não (9) Não sabe (8) NSA

161. A senhora trouxe bico para o hospital? — TROUBICO __
(1) Sim (2) Não (8) NSA

162. A senhora pretende amamentar seu filho no peito? — PRETAMAM __
(1) Sim (2) Não (9) Não sabe (8) NSA

163. Até que idade pretende dar o peito? __ __ meses — IDADAMAM __ __
(77) Enquanto ele(a) quiser ( ) Outra _____
(99) Não sabe (78) Enquanto tiver leite (88) NSA

Seu filho já recebeu?

164. Leite materno? (1) Sim (2) Não. SE SIM: Com __ __ horas (88) NSA — LM __ HORALM __ __

165. Chá/água/glicose? (1) Sim (2) Não. SE SIM: Com __ __ horas (88) NSA — CHA __ HORACH __ __

166. Bico ou chupeta? (1) Sim (2) Não. SE SIM: Com __ __ horas (88) NSA — BICO __ HORABI __ __

167. Mamadeira (leite)? (1) Sim (2) Não. SE SIM: Com __ __ horas (88) NSA — MAM __ HORAMA __ __

Gostaria de lhe fazer algumas perguntas sobre métodos para evitar filhos

168. A senhora ou o seu marido/companheiro vão usar algum método para evitar filhos? — ANTICON __
(1) Sim (2) Não (9) Não sabe
(3) Fez histerectomia (4) Ligadura de trompa (5) Vasectomia

SE SIM: Quais dos métodos a senhora vai usar?

169. Pílula	(1) Sim	(2) Não	PILULA __
170. Tabelinha	(1) Sim	(2) Não	TABELA __
171. Coito interrompido (ele se cuida)	(1) Sim	(2) Não	COITO __
172. Camisinha	(1) Sim	(2) Não	CONDOM __
173. DIU	(1) Sim	(2) Não	DIU __
174. Diafragma	(1) Sim	(2) Não	DIAFR __
175. Geléia espermaticida	(1) Sim	(2) Não	GEL __
176. ( ) outro:_____		(8) NSA	OUTR __

Gostaríamos saber da senhora seu endereço completo, porque pretendemos visitá-la, quando seu nenê estiver maior.

177. A senhora mora em Pelotas? MORAPEL __
(1) Sim (2) Não _____

178. SE SIM: (1) Pelotas urbana (2) Pelotas rural PROV __
(3) Jardim América (4) Laranjal (8) NSA

179. Qual é o seu endereço completo? _____

_____

_____

_____

180. Tem algum ponto de referência que nos ajude a encontrar sua casa?

_____

_____

_____

181. Tem telefone em casa? _ _ _ _ _ _ _ TELCASA _ _ _ _ _ _ _

182. Tem algum telefone para contato? _ _ _ _ _ _ _ TELCONT _ _ _ _ _ _ _

183. A senhora pretende ficar morando nesta casa nos próximos meses ou vai morar noutra casa?
(1) vai morar na mesma casa (2) vai morar noutro lugar

184. SE VAI MUDAR: Qual vai ser seu novo endereço? _____

_____

_____

185. Existe alguma outra forma de entrar em contato com a senhora, como através do emprego do marido ou outra forma?
(1) Sim (2) Não
SE SIM: De que maneira? _____

_____

186. A senhora poderia nos fornecer o endereço de um outro parente, para o caso em que nós precisarmos lhe encontrar?

_____

_____

187. Entrevistador: _____ ENTREV __

188. Hora da entrevista: __ __, __ __ HORAENT __ __, __ __

189. Data da entrevista: __ __/ __ __/ __ __ DATAENT __ __/ __ __/ __ __

A criança foi abandonada no hospital? (1) Sim (2) Não

EXAME FÍSICO DO RECÉM-NASCIDO:

Sexo: (1) masculino (2) feminino SEXRN __

Peso: __ __ __ __ g PESORN __ __ __ __

Comprimento: __ __ , __ cm COMPR __ __, __

Perímetro cefálico: __ __,__ cm PCRN __ __, __

Perímetro Torácico: __ __, __ cm PERTOR __ __, __

Circunferência abdominal: __ __, __ cm CIRAB __ __, __

APGAR 1° minuto: __ __ (99 = ignorado) APGAR1 __ __

APGAR 5° minuto: __ __ (99 = ignorado) APGAR5 __ __

Idade gestacional segundo método de Dubowitz: __ __ escore ESCORE __ __

Idade gestacional: __ __ semanas

PARA OS RN VIVOS QUE APRESENTAREM PESO DE NASCIMENTO < 2500 GRAMAS OU TIVEREM IDADE GESTACIONAL ABAIXO DE 37 SEMANAS, OBTER AS INFORMAÇÕES SEGUINTES COM A MÃE, NO PRONTUÁRIO E COM O MÉDICO QUE ATENDEU O PARTO:

Perguntar para a mãe se a <criança> nasceu antes do tempo

190. Por quê seu nenê nasceu antes do tempo? (ver na ficha, conversar com médico e mãe)? CAUSPREN __
(1) começou com contrações uterinas e entrou em trabalho de parto
(2) rompeu a bolsa antes do tempo (quebrou água)
(3) médicos tiveram que fazer cesariana ou tirar a criança porque apresentou problema de saúde: _____
(8) NSA (9) Ignorado ( ) outro _____

191. Descolamento prematuro de placenta	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	DESCPLA __
192. Prolapso de cordão	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	PROLAP __
193. Trabalho de parto prematuro espontâneo	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	ESPONT __
194. Apresentação pélvica/podálica	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	PELVIC __
195. Placenta prévia	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	PLAPRE __
196. Eclâmpsia	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	ECLAM __
197. Pré-eclâmpsia	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	PRECLAM __
198. Incompetência de colo uterino	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	INCOMP __
199. Ruptura uterina	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	RUPTUR __
200. Sofrimento fetal	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	SOFET __
201. Oligohidramnios	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	OLIGOH __
202. Doenças infecciosas pélvicas	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	DIP __
203. SE SIM: Qual? _____ (9) Ignorado (8) NSA					DIPSIM __
204. Outras infecções	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	INFGES __
205. SE SIM: Qual? _____ (9) Ignorado (8) NSA					INFSIM __
206. Hipertensão devido a problemas renais	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	RENAL __
207. Hemorragia por problema de coagulação	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	HEMORR __
208. Outros:	(1) Sim	(2) Não	(9) Ignorado	(8) NSA	DOENC __
209. SE SIM: Qual? _____ (9) Ignorado (8) NSA					DOENCSIM __

A informação foi obtida:

210. Mãe	(1) Sim	(2) Não	(8) NSA	INFMAE _
211. Médico	(1) Sim	(2) Não	(8) NSA	INFMED _
212. Prontuário	(1) Sim	(2) Não	(8) NSA	INFPRONT _

UNIVERSIDADE FEDERAL DE PELOTAS
FACULDADE DE MEDICINA

ESTUDO LONGITUDINAL DOS NASCIDOS EM 1993

Visita aos 15 anos - 2008

QUESTIONÁRIO DO/A ADOLESCENTE

Número do questionário __ __ __ __

Nome do/a adolescente _____

AGORA VOU PEDIR QUE, POR FAVOR, A SENHORA ME DEIXE SOZINHA COM O <NOME> PARA FAZER A ENTREVISTA COM ELE/A

PARA COMEÇAR VOU TE PERGUNTAR SOBRE OS TEUS ESTUDOS

1. **Qual foi a última série que tu foste aprovado?** ____série do ensino _____ (fundamental ou médio)
   (SE NUNCA ESTUDOU MARQUE 00 E VÁ PARA A PERGUNTA 12)

2. **Tu estudaste em 2007?** (0) Não → *VÁ PARA A PERGUNTA 5* (1) Sim

3. *SE ESTUDOU EM 2007:* **Tu estudaste...** *(Ler opções)*
   (1) de manhã **(2) de tarde** **(3) de noite** **(4) manhã/tarde**

4. *SE ESTUDOU EM 2007:* **Em qual colégio tu estudaste em 2007?**
   _____
   → *VÁ PARA A PERGUNTA 6*

5. *SE NÃO ESTUDOU EM 2007:* **Por que não continuaste a estudar?**
   (1) Dificuldade para aprender (2) Doença (3) Trabalho
   (4) Falta de escola ou de vagas (5) Não achou importante
   ( ) Outro. Qual?_____

6. **Tu repetiste de ano alguma vez?** (0) Não → *VÁ PARA A PERGUNTA 9* (1) Sim

7. *SE REPETIU ALGUMA VEZ:* **Quantas vezes?** __ __ vezes

8. *SE REPETIU ALGUMA VEZ:* **Qual o principal motivo que te fez repetir de ano?** *(anotar somente um, o principal)*
   (01) Dificuldade para aprender (02) Professor não sabia ensinar bem
   (03) Problema de disciplina (04) Falta de tempo (ajudar em casa)
   (05) Não gosta de estudar (06) Falta de ajuda para os estudos
   (07) Problemas de casa (08) Porque começou a trabalhar
   ( ) Outro Qual? _____

9. **Em quantos colégios tu já estudaste?** ___ ___ colégios

10. **Como tu costumas ir e voltar do colégio: a pé, de ônibus, de carro, bicicleta?**
    (01) carro ou moto (02) ônibus (03) a pé (04) bicicleta ( ) outro _____Cód.: __ __

11. **Quanto tempo tu demoras entre a ida e a volta para o colégio?** __ __ __ minutos	
12. **Tu assistes televisão?**	(0) Não (1) Sim
13. *SE SIM:* **Quantas horas tu assistes televisão nos domingos?**	__ __ horas __ __ minutos
14. *SE SIM:* **Quantas horas tu assistes televisão em um dia de semana sem ser sábado e domingo?**	__ __ horas __ __ minutos
15. **Tu tens televisão no teu quarto?**	(0) Não (1) Sim
16. **Tu jogas videogame?**	(0) Não (1) Sim
17. *SE SIM:* **Quantas horas tu jogas videogame nos domingos?**	__ __ horas __ __ minutos
18. *SE SIM:* **Quantas horas tu jogas videogame em um dia de semana sem ser sábado e domingo?**	__ __ horas __ __ minutos
19. **Tu usas computador?**	(0) Não (1) Sim
20. *SE SIM:* **Quantas horas tu ficas no computador nos domingos?**	__ __ horas __ __ minutos
21. *SE SIM:* **Quantas horas tu ficas no computador em um dia de semana sem ser sábado e domingo?**	__ __ horas __ __ minutos

AGORA VAMOS FALAR SOBRE TRABALHO. CONSIDERAMOS COMO TRABALHO QUALQUER ATIVIDADE QUE TU FAZES GANHANDO ALGUM DINHEIRO OU OUTRA COISA EM TROCA.

22. **Desde <***mês do ano passado***>, tu trabalhaste?**

(0) Não → *VÁ PARA A INSTRUÇÃO ACIMA DA PERGUNTA 33* (1) Sim

23. *SE SIM:* **Tu trabalhaste ou trabalhas fora de casa?** (0) Não (1) Sim

24. *SE SIM:* **Tu trabalhaste ou trabalhas com os pais ou outro parente?** (0) Não (1) Sim

25. *SE SIM:* **Com que idade tu começaste a trabalhar?** __ __ anos

26. *SE SIM:* **Por que tu começaste a trabalhar?**

(1) Ajudar em casa (2) Interesse próprio (3) Porque deixou de estudar

( ) Outro. Qual? _____

27. *SE SIM:* **Que tipo de trabalho tu fazes ou fazias?**

(01) Atendimento em bar, mini-mercado, venda (02) Cata, recicla lixo ou sucata

(03) Capina, pinta (04) Cuida de crianças

(05) Trabalha na lavoura

( ) outro, qual? _____

28. *SE SIM:* **Quanto tu recebes ou recebias?**

R$ ___ __ __ __ __ por mês ____, __ salários mínimos

(1) alimentos (2) roupa (3) alimentos ou roupas ( ) outro ?_____

29. *SE SIM:* **Quantos meses por ano tu trabalhas ou trabalhaste?** __ __ meses *(00 < 1 mês)*

30. *SE SIM:* **Quantos dias por semana tu trabalhas ou trabalhaste?** __ dias

31. *SE SIM:* **Quantas horas por dia tu trabalhas ou trabalhaste?** __ __ horas

32. *SE SIM:* **Quando tu começaste a trabalhar, tu assinaste algum contrato ou te assinaram carteira de trabalho?** (0) Não (1) Sim

AGORA VAMOS CONVERSAR SOBRE COISAS QUE TU FAZES QUANDO TU NÃO ESTÁS NA ESCOLA OU NO TRABALHO

33. **Tu costumas encontrar os amigos para conversar, jogar ou fazer outras coisas?**

(0) Não ( ) Sim → *SE SIM:* **Quantos dias por semana?** ___ dias *(anote1para 1 vez por semana ou menos)*

34. **Tu costumas ouvir música?**

(0) Não ( ) Sim → *SE SIM:* **Quantos dias por semana?** ___ dias *(anote1para 1 vez por semana ou menos)*

35. **Tu costumas assistir filmes (DVD) ou ir ao cinema?**

(0) Não ( ) Sim → *SE SIM:* **Quantos dias por semana?** ___ dias *(anote1para 1 vez por semana ou menos)*

36. **Tu costumas ir a festas, discotecas, boates, bailes, baladas ou avenida?**

(0) Não ( ) Sim → *SE SIM:* **Quantos dias por semana?** ___ dias *(anote1para 1 vez por semana ou menos)*

37. **Tu costumas namorar ou ficar?**

(0) Não ( ) Sim → *SE SIM:* **Quantos dias por semana?** ___ dias *(anote1para 1 vez por semana ou menos)*

38. **Tu já freqüentaste curso de línguas, tipo curso de inglês, espanhol, francês?** (0) Não (1) Sim

39. **Tu praticas alguma das religiões que eu vou te dizer?** (*Ler as opções de pergunta)*

a. **Católica?** (0) Não (1) Sim

b. **Espírita?** (0) Não (1) Sim

c. **Umbanda?** (0) Não (1) Sim

d. **Evangélica?** (0) Não (1) Sim

e. **Protestante?** (0) Não (1) Sim

f. **Outra?** (0) Não ( ) Sim, Qual? _____

40. **Desde <***mês passado***>, tu foste a algum culto, missa, igreja?** (0) Não (1) Sim (9) Não lembro

AGORA EU GOSTARIA DE TE PERGUNTAR SOBRE NAMORO. LEMBRA QUE TENS TODA A LIBERDADE PARA RESPONDER E QUE TUA SINCERIDADE É O MAIS IMPORTANTE.

41. **Tu já tiveste namorado/a?** (0) Não → *VÁ PARA A INSTRUÇÃO ACIMA DA QUESTÃO 45*
(1) Sim

42. *SE SIM:* **Quantos namorados/as tu tiveste?** __ __ namorados/as

43. *SE SIM:* **Tu estás namorando alguém agora?** (0) Não (1) Sim

44. *SE SIM:* **Tu já moraste com algum/a namorado/a?** (0) Não (1) Sim

AGORA FALAREMOS UM POUCO SOBRE AS ATIVIDADES FÍSICAS QUE TU PODES TER PRATICADO NA ÚLTIMA SEMANA, SEM CONTAR AS AULAS DE EDUCAÇÃO FÍSICA NO COLÉGIO.

Atividades físicas	**A. Desde <*dia*> da semana passada, tu praticaste...**	**B. Quantos dias na semana?**	**C. Quanto tempo cada dia?**
45. **Futebol de sete, rua ou campo?**	(0) Não (1) Sim	__	__ h __ __ min
46. **Futsal?**	(0) Não (1) Sim	__	__ h __ __ min
47. **Atletismo?**	(0) Não (1) Sim	__	__ h __ __ min
48. **Basquete?**	(0) Não (1) Sim	__	__ h __ __ min
49. **Jazz, ballet, outras danças**?	(0) Não (1) Sim	__	__ h __ __ min
50. **Ginástica olímpica, rítmica ou GRD?**	(0) Não (1) Sim	__	__ h __ __ min

Atividades físicas	**A. Desde <*dia*> da semana passada, tu praticaste...**	**B. Quantos dias na semana?**	**C. Quanto tempo cada dia?**
51. **Judô, karatê, capoeira, outras lutas?**	(0) Não (1) Sim	__	__ h __ __ min
52. **Natação?**	(0) Não (1) Sim	__	__ h __ __ min
53. **Vôlei?**	(0) Não (1) Sim	__	__ h __ __ min
54. **Tênis, pádel?**	(0) Não (1) Sim	__	__ h __ __ min
55. **Caminhada?**	(0) Não (1) Sim	__	__ h __ __ min
56. **Musculação?**	(0) Não (1) Sim	__	__ h __ __ min
57. **Academia?**	(0) Não (1) Sim	__	__ h __ __ min
58. **Outro1?** _____	(0) Não (1) Sim	__	__ h __ __ min
59. **Outro2?** _____	(0) Não (1) Sim	__	__ h __ __ min
60. **Outro3?** _____	(0) Não (1) Sim	__	__ h __ __ min

AGORA VAMOS FALAR SOBRE ALIMENTAÇÃO. O QUE NOS INTERESSA É SABER COMO TEM SIDO TUA ALIMENTAÇÃO DESDE <MÊS DO ANO PASSADO>. VOU LISTAR OS NOMES DE ALGUNS ALIMENTOS E PEÇO QUE ME DIGAS SE COMESTE ESSES ALIMENTOS E QUANTAS VEZES.
POR EXEMPLO: COMESTE ARROZ? QUANTAS VEZES?

Alimentos	**A. Desde <*mês do ano passado*>, comeste alguma vez?**	**B. Quantas vezes e com que freqüência?**													
61. **Arroz**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
62. **Feijão**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
63. **Macarrão**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
64. **Farinha de mandioca**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
65. **Pão branco**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
66. **Pão feito em casa**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
67. **Pão integral**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
68. **Bolacha doce ou recheada**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
69. **Bolacha salgada**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
70. **Bolo**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
71. **Polenta**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
72. **Chips, salgadinhos**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
73. **Batata frita ou batata chips**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
74. **Batata cozida**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
75. **Aipim**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
76. **Pipoca**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
77. **Lentilha, ervilha, grão de bico**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
78. **Alface**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
79. **Couve**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
80. **Repolho**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
81. **Laranja ou bergamota** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
82. **Banana**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
83. **Mamão ou Papaia**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A

Alimentos	**A. Desde <***mês do ano passado***>, comeste alguma vez?**	**B. Quantas vezes e com que freqüência?**													
84. **Maçã**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
85. **Melancia ou melão** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
86. **Abacaxi** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
87. **Abacate** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
88. **Manga** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
89. **Morango** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
90. **Uva** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
91. **Pêssego** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
92. **Goiaba** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
93. **Pêra** ( )	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A

94. **Desde <***mês do ano passado***>, tu fizeste algum tipo de regime?** *(Ler opções)*

(0) Não → *VÁ PARA A PERGUNTA 96*

(1) Sim, por conta própria **(2) Sim, com orientação de médico ou nutricionista**

95. SE FAZ REGIME: **Por quê?** _____ *Cód*: __ __

96. **Desde <***mês do ano passado***>, tu tomaste algum remédio para emagrecer?** (0) Não (1) Sim

97. **Depois que o teu prato já está servido, tu costumas colocar mais sal na comida?** (0) Não (1) Sim

98. **Quando tomas refrigerante, qual tipo tomas?** *(Ler opções)*

(1) Diet/Light/Zero **(2) Normal** **(3) Os dois** **(4) Não toma refrigerante**

AGORA VAMOS FALAR SOBRE TEUS DENTES

99. **Tu escovas os dentes todos os dias?** (0) Não → *VÁ PARA A PERGUNTA 101* (1) Sim

100. *SE SIM:* **Quantas vezes por dia tu escovas os dentes?** __ __ vezes por dia

101. **Como tu achas que está a saúde dos teus dentes hoje?** *(Ler opções)*

(1) Muito boa **(2) Boa** **(3) Ruim** **(4) Muito ruim**

102. *SE SIM:* **Tu usas algum tipo de aparelho nos dentes?** (0) Não (1) Sim

GOSTARIA DE TE FAZER UMA PERGUNTA SOBRE O TEU BAIRRO

103. **Tu já sentiste medo de morar no teu bairro?** (0) Não (1) Sim

AGORA, OLHA OS DESENHOS DE DIFERENTES TAMANHOS DE CORPO. CADA UM TEM UM NÚMERO QUE VAI DE 1 A 9. POR FAVOR, RESPONDE AS QUESTÕES SEGUINTES E ME DIZ O NÚMERO DO DESENHO QUE MELHOR RESPONDE AS PERGUNTAS. *(MOSTRAR FIGURAS)*

104. **Qual desenho se parece mais contigo?** Número __

105. **Com qual desenho tu mais gostarias de te parecer?** Número __

AGORA EU VOU TE MOSTRAR UNS ROSTOS QUE VARIAM DE UMA PESSOA QUE ESTÁ MUITO FELIZ *(MOSTRAR FIGURA 1)* **ATÉ UMA PESSOA MUITO TRISTE** *(MOSTRAR FIGURA 7).*

106. **Qual desses rostos mostra melhor como tu te sentiste na maior parte do tempo no último ano?**

Número __

AGORA VAMOS FALAR SOBRE TUA SAÚDE

107. **Alguma vez na vida tu já tiveste chiado no peito?**

(0) Não → *VÁ PARA A PERGUNTA 113* (1) Sim

108. **Desde <*mês*> do ano passado, tiveste chiado no peito?**

(0) Não → *VÁ PARA A PERGUNTA 113* (1) Sim

109. *SE SIM:* **Desde <*mês*> do ano passado, quantas crises de chiado no peito tiveste?** __ __ crises

110. *SE SIM:* **Desde <*mês*> do ano passado, quantas noites deixaste de dormir bem por causa do chiado no peito?**

(0) Nenhuma (1) Menos de 1 vez por semana (2) 1 vez ou mais por semana

111. *SE SIM:* **Desde <*mês*> do ano passado, tiveste algum chiado durante ou depois de fazer exercício?**

(0) Não (1) Sim

112. *SE SIM:* **Desde <*mês*> do ano passado, o teu chiado no peito foi tão forte que não conseguiste dizer mais de 2 palavras entre cada respiração?**

(0) Não (1) Sim

113. **Desde <*mês*> do ano passado, tu tiveste tosse seca à noite, sem estar gripado?**

(0) Não (1) Sim

114. **Desde <*mês*> do ano passado, tu tiveste queimação no peito ou azia?**

(0) Não → *VÁ PARA A INSTRUÇÃO ACIMA DA QUESTÃO 116* (1) Sim

115. *SE SIM:* **Quantos dias isso costuma acontecer por semana?** __ dias

AGORA VOU TE PERGUNTAR SOBRE MAIS ALGUNS ALIMENTOS.

Alimentos	**A. Desde <*mês do ano passado*>, alguma vez comeste?**	**B. Quantas vezes e com que freqüência?**													
116. **Tomate**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
117. **Chuchu**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
118. **Abóbora**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
119. **Pepino ao natural**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
120. **Vagem ( )**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
121. **Cenoura**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
122. **Beterraba**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
123. **Couve-flor**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
124. **Ovos**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
125. **Leite integral**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
126. **Leite desnatado**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
127. **Iogurte**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
128. **Queijo**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
129. **Carne sem osso, tipo bife, carne assada, guisado, etc**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A

Alimentos	**A. Desde <***mês do ano passado***>, alguma vez comeste?**	**B. Quantas vezes e com que freqüência?**													
130. **Carne com osso, tipo costela, paleta, agulha, etc**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
131. **Carne de porco**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
132. **Frango**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
133. **Peixe fresco**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
134. **Camarão**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
135. **Bauru ou Cheesburguer**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
136. **Presunto ou mortadela**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
137. **Salsicha ou lingüiça**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
138. **Cachorro quente**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
139. **Pizza**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
140. **Maionese**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
141. **Salgados como quibe, pastel, empada, etc.**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A

AGORA VAMOS FALAR SOBRE FILHOS

142. **Tu tens ou já tiveste filho(s)?** (0) Não → *VÁ PARA A PERGUNTA150* (1) Sim

RESPONDA AS PRÓXIMAS PERGUNTAS SOBRE O TEU ÚLTIMO FILHO:

143. *SE SIM:* **Qual a data de nascimento deste filho**? _____/_____/ 2 0 __ __

144. *SE SIM:* **Qual foi o peso dele/a ao nascer?** __ __ __ __ gramas

145. *SE SIM:* **Qual foi o comprimento dele/a ao nascer?** __ __. __ cm

146. *SE SIM:* **Até que idade ele/a mamou?** __ __ meses __ __ dias *(77meses 77dias = ainda mama)*

147. *SE SIM:* **Tu tens outro filho?** (0) Não → *VÁ PARA A PERGUNTA 149* (1) Sim

148. *SE TEM OUTRO FILHO*: **Quantos?** ___ ___ filhos

149. *SE TEM FILHO(S):* **Tu moras com o pai/mãe deste(s) filho(s)?** (0) Não (1) Sim

150. **Tua cor ou raça é...** *(Ler opções)*

(1) Branca (2) Preta/Negra (3) Mulata/Parda (4) Amarela (5) Indígena

151. **Tu escreves com a mão direita ou esquerda?** (1) Direita (2) Esquerda (3) Ambas

152. **Tu chutas com o pé direito ou esquerdo?** (1) Direito (2) Esquerdo (3) Ambos

E PARA TERMINAR, GOSTARIA DE TE PERGUNTAR SOBRE MAIS ALGUNS ALIMENTOS.

Alimentos	**A. Desde <***mês do ano passado***>, alguma vez comeste?**	**B. Quantas vezes e com que freqüência?**													
153. **Sorvete/picolé ( )**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
154. **Açúcar**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
155. **Balas**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A

Alimentos	**A. Desde <***mês do ano passado***>, alguma vez comeste?**	**B. Quantas vezes e com que freqüência?**													
156. **Chocolate em pó ou Nescau**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
157. **Chocolate em barra ou bombom**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
158. **Pudim ou doces**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
159. **Refrigerante normal**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
160. **Refrigerante light**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
161. **Café**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
162. **Sucos da fruta ou polpa**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
163. **Sucos artificiais**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
164. **Cerveja**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
165. **Vinho**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
166. **Outras bebidas alcoólicas**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
167. **Alho**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
168. **Cebola**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
169. **Vísceras como rim, fígado, coração, moela, mondongo**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
170. **Peixe enlatado como sardinha, atum**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
171. **Carnes conservadas em sal como carne seca, charque, bacalhau**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
172. **Alimentos enlatados como ervilha, azeitona, palmito**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
173. **Churrasco**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A
174. **Chimarrão**	(0) Não (1) Sim	1	2	3	4	5	6	7	8	9	10	D	S	M	A

175. **Qual dessas coisas tu usas mais seguido no pão, torrada ou bolacha?** *(ler opções)*

(01) manteiga (02) margarina (03) maionese (04) requeijão (05) patê (06) nenhuma
( ) outra_____ cód: __ __

GOSTARIA DE AGRADECER DE NOVO PELA TUA COLABORAÇÃO!!

Nome do entrevistador: _____ Código __ __

Data da entrevista: __ __ / __ __ / 2008.

_____

_____

_____

_____

_____

_____

UNIVERSIDADE FEDERAL DE PELOTAS
FACULDADE DE MEDICINA

ESTUDO LONGITUDINAL DOS NASCIDOS EM 1993

Acompanhamento 15 anos – 2008

Número do questionário __ __ __ __

Este questionário é secreto. Teu nome não aparecerá nele.

Se tiveres alguma dúvida, chama a entrevistadora. Ela irá te ajudar sem olhar as tuas respostas.

Lê as perguntas com atenção e marca um X na resposta que achares melhor. Não há resposta certa ou errada, queremos a tua opinião.

AS PRIMEIRAS PERGUNTAS SÃO SOBRE CIGARROS	
1. **Alguma vez** tu experimentaste fumar cigarros, mesmo uma ou duas fumadas?	( ) sim ( ) não
2. **Quantos anos** tu tinhas quando fumaste teu primeiro cigarro?	( ) 9 anos ou menos ( ) de 10 a 11 anos ( ) de 12 a 15 anos ( ) nunca fumei cigarros
3. **Quantos anos** tu tinhas quando começaste a fumar cigarros todos os dias?	( ) 9 anos ou menos ( ) de 10 a 11 anos ( ) de 12 a 15 anos ( ) nunca fumei todos os dias ( ) nunca fumei cigarros
4. Nos últimos 30 dias, **quantos dias** tu fumaste?	( ) 1 a 5 dias ( ) 6 a 9 dias ( ) 10 ou mais dias ( ) todos os dias do mês ( ) não fumei nos últimos 30 dias ( ) nunca fumei cigarros
5. Nos dias em que tu fumaste, **quantos cigarros** tu geralmente fumaste por dia?	( ) 1 a 5 cigarros por dia ( ) 6 a 10 cigarros por dia ( ) mais de 10 cigarros por dia ( ) nunca fumei cigarros

AS PRÓXIMAS PERGUNTAS SÃO SOBRE BEBIDAS DE ÁLCOOL E DROGAS	
6. **Alguma vez** tu já tomaste bebida de álcool?	( ) sim ( ) não
7. **Quantos anos** tu tinhas quando tomaste bebida de álcool pela primeira vez?	( ) 9 anos ou menos ( ) de 10 a 11 anos ( ) de 12 a 15 anos ( ) nunca tomei bebida de álcool
8. Nos últimos 30 dias, **quantos dias** tu tomaste bebida de álcool?	( ) 1 a 5 dias ( ) 6 a 9 dias ( ) 10 ou mais dias ( ) todos os dias do mês ( ) não tomei bebida de álcool nos últimos 30 dias ( ) nunca tomei bebida de álcool
9. Tu já tomaste **algum porre ou ficaste bêbado**?	( ) sim ( ) não

10. **Os teus amigos ou alguém da tua turma** usam alguma destas coisas?

Bebida de álcool	( ) sim	( ) não
Cigarros	( ) sim	( ) não
Cola de sapateiro	( ) sim	( ) não
Solvente ou tiner	( ) sim	( ) não
Cocaína	( ) sim	( ) não
Maconha	( ) sim	( ) não
Remédio para emagrecer	( ) sim	( ) não
Calmante ou tranqüilizante	( ) sim	( ) não

Outra coisa. Qual? _____

11. **E tu, já experimentaste** alguma destas coisas?

Cola de sapateiro	( ) sim	( ) não
Solvente ou tiner	( ) sim	( ) não
Cocaína	( ) sim	( ) não
Maconha	( ) sim	( ) não
Remédio para emagrecer	( ) sim	( ) não
Calmante ou tranqüilizante	( ) sim	( ) não

Outra coisa. Qual? _____

12. **No último mês,** tu usaste alguma destas coisas?	
Cola de sapateiro	( ) sim ( ) não
Solvente ou tiner	( ) sim ( ) não
Cocaína	( ) sim ( ) não
Maconha	( ) sim ( ) não
Remédio para emagrecer	( ) sim ( ) não
Calmante ou tranqüilizante	( ) sim ( ) não
Outra coisa. Qual? _____	

AS PRÓXIMAS PERGUNTAS SÃO SOBRE BRIGAS E VIOLÊNCIA

13. **No último ano**, tu entraste em alguma briga em que alguém ficou machucado? ( ) sim ( ) não

SE RESPONDESTE SIM PARA A PERGUNTA 13, RESPONDE A PERGUNTA 14. CONSIDERAMOS ARMA QUALQUER OBJETO QUE POSSA SER SIDO NA BRIGA (COMO: PAU, PEDRA, CANIVETE...).

14. Tu ou alguma das outras pessoas que estavam brigando **usaram alguma arma?** ( ) sim ( ) não

SE RESPONDESTE SIM PARA A PERGUNTA 14, RESPONDE A PERGUNTA 15.

15. SE TU PARTICIPASTE DE ALGUMA BRIGA EM QUE FOI USADA ALGUMA ARMA (pau, pedra, canivete), RESPONDE:

Quais as armas que foram usadas?	Arma de fogo (revólver)	( ) sim	( ) não
	Faca ou canivete	( ) sim	( ) não
	Pedra	( ) sim	( ) não
	Corrente	( ) sim	( ) não
	Pedaço de pau ou ferro	( ) sim	( ) não
	Garrafa	( ) sim	( ) não
	Soqueira	( ) sim	( ) não

16. Alguma pessoa costuma te bater?	( ) sim ( ) não
17. SE ALGUMA PESSOA COSTUMA TE BATER, quem? (marca quantas respostas quiseres)	( ) pai ( ) mãe ( ) irmão ( ) avó ou avô ( ) padrasto ou madrasta ( ) amigo/a ( ) outros, QUEM?_____

18. Tu já estiveste em alguma instituição para menores (Juizado, FASE = EX-FEBEM)? ( ) sim ( ) não

19. SE JÁ FICASTE EM ALGUMA INSTITUIÇÃO PARA MENORES:

Qual foi o motivo?

_____

20. Que idade tu tinhas quando estiveste na instituição (Juizado, FASE = Ex-FEBEM)? __ __ anos

21. Por quanto tempo ficaste na instituição (Juizado, FASE = Ex-FEBEM)? __ __ meses __ __ dias

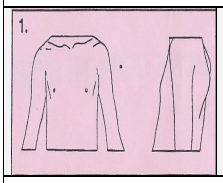
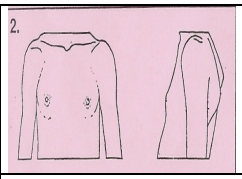
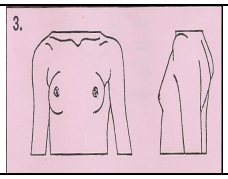
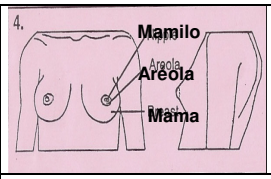
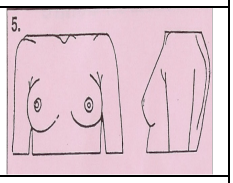
Formatados: Marcadores e numeração

AS PRÓXIMAS PERGUNTAS SÃO SOBRE O QUE TU FAZES E A TUA FAMÍLIA	
22. SE JÁ APANHASTE DOS TEUS PAIS: Quantas vezes tu apanhaste dos teus pais **nos últimos 6 meses**?	( ) nenhuma ( ) 1 ou 2 vezes ( ) 3 a 5 vezes ( ) 6 vezes ou mais
23. Tu já fugiste de casa?	( ) sim ( ) não
24. Tu achas que tua relação com teu pai é?	( ) ótima ( ) muito boa ( ) boa ( ) regular ( ) ruim
25. O teu pai já conversou contigo sobre sexo?	( ) sim ( ) não
26. Tu achas que tua relação com tua mãe é?	( ) ótima ( ) muito boa ( ) boa ( ) regular ( ) ruim
27. A tua mãe já conversou contigo sobre sexo?	( ) sim ( ) não
28. Tu achas que a relação entre o teu pai e a tua mãe é?	( ) ótima ( ) muito boa ( ) boa ( ) regular ( ) ruim
SÓ RESPONDE AS PRÓXIMAS DUAS PERGUNTAS SE OS TEUS PAIS SÃO SEPARADOS	
29. Tu achas que a separação dos teus pais te prejudicou de alguma forma?	( ) sim ( ) não
30. Tu achas que a separação dos teus pais foi boa para ti de alguma forma?	( ) sim ( ) não
AGORA VOU TE PERGUNTAR SOBRE RELACÕES SEXUAIS	
31. Tu já tiveste relação sexual (já transaste)?	( ) sim ( ) não
32. SE JÁ TRANSASTE: Que idade tu tinhas na primeira relação (transa)?	___ ___ anos ( ) nunca transei
33. SE JÁ TRANSASTE: A tua primeira transa foi:	( ) porque eu quis ( ) por ter sido forçada ( ) nunca transei

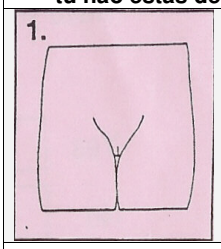
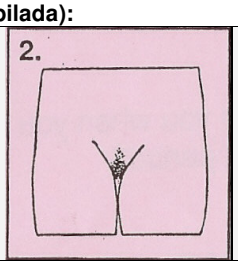
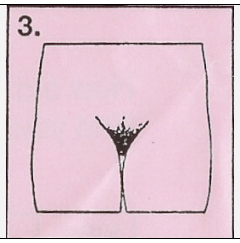
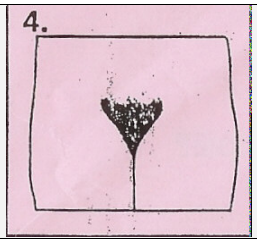
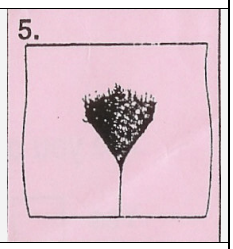
34. SE JÁ TRANSASTE: Com quem foi a tua primeira transa?	( ) namorado ( ) garoto de programa ( ) algum parente ( ) ficante ( ) empregado ( ) outras pessoas ( ) nunca transei
35. SE JÁ TRANSASTE: Quando foi a última vez que tu transaste?	( ) há menos de 1 mês ( ) 1 a 2 meses ( ) 3 a 4 meses ( ) há 5 meses ou mais ( ) nunca transei
36. SE JÁ TRANSASTE: Nesta última relação sexual, tu usaste algum destes métodos para evitar filho ou te proteger?	Camisinha ( ) não ( ) sim Pílula ( ) não ( ) sim Tirar na hora ( ) não ( ) sim Não usei nada ( ) não ( ) sim Outro: Qual? _____ ( ) nunca transei
37. SE JÁ TRANSASTE: Com quantas pessoas tu transaste na vida?	__ __ pessoas ( ) nunca transei
AGORA VOU TE PERGUNTAR SOBRE MENSTRUAÇÃO E GRAVIDEZ	
37a. Tu já menstruaste?	( ) sim ( ) não
37b. SE TU JÁ MENSTRUASTE: Com que idade tu menstruaste pela primeira vez?	__ __ anos e __ __ meses
37c. Tu já consultaste com ginecologista?	( ) sim ( ) não
37d. SE JÁ CONSULTASTE COM GINECOLOGISTA: Por qual motivo? _____	
38. SE JÁ TRANSASTE: Tu estás grávida?	( ) sim ( ) não ( ) nunca transei
39. SE JÁ TRANSASTE: Tu já tiveste algum aborto?	( ) sim ( ) não ( ) nunca transei

AS PRÓXIMAS DUAS PERGUNTAS SÃO SOBRE TEU DESENVOLVIMENTO SEXUAL

40. Por favor, marca com um X no número do quadrinho abaixo que mais se parece contigo agora:

1.	2.	3.	4.	5.
				
Os seios são retos.	Os seios formam pequenos montinhos.	Os seios formam montinhos maiores que na figura 2.	O mamilo (bico do seio) e a porção em volta (aréola) fazem um montinho que se destaca do seio.	Apenas o mamilo (bico do seio) se destaca do seio.

41. Por favor, marca com um X no número do quadrinho abaixo que mais se parece contigo agora (quando tu não estás depilada):

1.	2.	3.	4.	5.
				
Sem pêlos.	Muito poucos pêlos.	Bastantes pêlos.	Os pêlos não se espalharam pelas coxas.	Os pêlos se espalharam pelas coxas.

AS PRÓXIMAS PERGUNTAS SÃO SOBRE COISAS QUE PODEM TER ACONTECIDO CONTIGO

42. Já foste separada dos teus pais para ser cuidada por outra pessoa?	( ) sim	( ) não
43. Já teve brigas com agressão física na tua casa entre adultos ou um adulto que agrediu uma criança ou um adolescente?	( ) sim	( ) não
44. Já aconteceu de não teres comida suficiente em casa ou vestires roupas sujas ou rasgadas porque não tinhas outras?	( ) sim	( ) não
45. Tu já pensaste ou sentiste que o teu pai ou a tua mãe **não queriam** que tu tivesses nascido?	( ) sim	( ) não
46. Tu já pensaste ou sentiste que alguém da tua família te odeia?	( ) sim	( ) não
47. Já aconteceu de um adulto da tua família ou alguém que estava cuidando de ti te bater de um jeito que te deixou machucado ou com marcas?	( ) sim	( ) não
48. Alguém já tentou fazer coisas sexuais contigo contra a tua vontade, te ameaçando ou te machucando?	( ) sim	( ) não

MUITO OBRIGADO POR NOS AJUDAR!

Recusou o confidencial ( )

UNIVERSIDADE FEDERAL DE PELOTAS
FACULDADE DE MEDICINA

ESTUDO LONGITUDINAL DOS NASCIDOS EM 1993

Acompanhamento 15 anos – 2008

Número do questionário __ __ __ _

Este questionário é secreto. Teu nome não aparecerá nele.

Se tiveres alguma dúvida, chama a entrevistadora. Ela irá te ajudar sem olhar as tuas respostas.

Lê as perguntas com atenção e marca um X na resposta que achares melhor. Não há resposta certa ou errada, queremos a tua opinião.

AS PRIMEIRAS PERGUNTAS SÃO SOBRE CIGARROS	
1. **Alguma vez** tu experimentaste fumar cigarros, mesmo uma ou duas fumadas?	( ) sim ( ) não
2. **Quantos anos** tu tinhas quando fumaste teu primeiro cigarro?	( ) 9 anos ou menos ( ) de 10 a 11 anos ( ) de 12 a 15 anos ( ) nunca fumei cigarros
3. **Quantos anos** tu tinhas quando começaste a fumar cigarros todos os dias?	( ) 9 anos ou menos ( ) de 10 a 11 anos ( ) de 12 a 15 anos ( ) nunca fumei todos os dias ( ) nunca fumei cigarros
4. Nos últimos 30 dias, **quantos dias** tu fumaste?	( ) 1 a 5 dias ( ) 6 a 9 dias ( ) 10 ou mais dias ( ) todos os dias do mês ( ) não fumei nos últimos 30 dias ( ) nunca fumei cigarros
5. Nos dias em que tu fumaste, **quantos cigarros** tu geralmente fumaste por dia?	( ) 1 a 5 cigarros por dia ( ) 6 a 10 cigarros por dia ( ) mais de 10 cigarros por dia ( ) nunca fumei cigarros

AS PRÓXIMAS PERGUNTAS SÃO SOBRE BEBIDAS DE ÁLCOOL E DROGAS	
6. **Alguma vez** tu já tomaste bebida de álcool?	( ) sim ( ) não
7. **Quantos anos** tu tinhas quando tomaste bebida de álcool pela primeira vez?	( ) 9 anos ou menos ( ) de 10 a 11 anos ( ) de 12 a 15 anos ( ) nunca tomei bebida de álcool
8. Nos últimos 30 dias, **quantos dias** tu tomaste bebida de álcool?	( ) 1 a 5 dias ( ) 6 a 9 dias ( ) 10 ou mais dias ( ) todos os dias do mês ( ) não tomei bebida de álcool nos últimos 30 dias ( ) nunca tomei bebida de álcool
9. Tu já tomaste **algum porre ou ficaste bêbado**?	( ) sim ( ) não
10. **Os teus amigos ou alguém da tua turma** usam alguma destas coisas?	
Bebida de álcool	( ) sim ( ) não
Cigarros	( ) sim ( ) não
Cola de sapateiro	( ) sim ( ) não
Solvente ou tiner	( ) sim ( ) não
Cocaína	( ) sim ( ) não
Maconha	( ) sim ( ) não
Remédio para emagrecer	( ) sim ( ) não
Calmante ou tranqüilizante	( ) sim ( ) não
Outra coisa. Qual? _____	
11. **E tu, já experimentaste** alguma destas coisas?	
Cola de sapateiro	( ) sim ( ) não
Solvente ou tiner	( ) sim ( ) não
Cocaína	( ) sim ( ) não
Maconha	( ) sim ( ) não
Remédio para emagrecer	( ) sim ( ) não
Calmante ou tranqüilizante	( ) sim ( ) não
Outra coisa. Qual? _____	

12. **No último mês,** tu usaste alguma destas coisas?		
Cola de sapateiro	( ) sim	( ) não
Solvente ou tiner	( ) sim	( ) não
Cocaína	( ) sim	( ) não
Maconha	( ) sim	( ) não
Remédio para emagrecer	( ) sim	( ) não
Calmante ou tranqüilizante	( ) sim	( ) não
Outra coisa: Qual? _____		

AS PRÓXIMAS PERGUNTAS SÃO SOBRE BRIGAS E VIOLÊNCIA

13. **No último ano**, tu entraste em alguma briga em que alguém ficou machucado? ( ) sim ( ) não

SE RESPONDESTE SIM PARA A PERGUNTA 13, RESPONDE A PERGUNTA 14. CONSIDERAMOS ARMA QUALQUER OBJETO QUE POSSA SER SIDO USADO NA BRIGA (COMO: PAU, PEDRA, CANIVETE ...).

14. Tu ou alguma das outras pessoas que estavam brigando **usaram alguma arma?** ( ) sim ( ) não

SE RESPONDESTE SIM PARA A PERGUNTA 14, RESPONDE A PERGUNTA 15.

15. SE TU PARTICIPASTE DE ALGUMA BRIGA EM QUE FOI USADA ALGUMA ARMA (pau, pedra, canivete), RESPONDE:

Quais as armas que foram usadas?	Arma de fogo (revólver)	( ) sim	( ) não
	Faca ou canivete	( ) sim	( ) não
	Pedra	( ) sim	( ) não
	Corrente	( ) sim	( ) não
	Pedaço de pau ou ferro	( ) sim	( ) não
	Garrafa	( ) sim	( ) não
	Soqueira	( ) sim	( ) não

16. Alguma pessoa costuma te bater?	( ) sim	( ) não
17. SE ALGUMA PESSOA COSTUMA TE BATER, quem? (marca quantas respostas tu quiseres)	( ) pai	( ) mãe
	( ) irmão	( ) avó ou avô
	( ) padrasto ou madrasta	
	( ) amigo/a	
	( ) outros, QUEM? _____	

18. Tu já estiveste em alguma instituição para menores (Juizado, FASE = EX-FEBEM)? ( ) sim ( ) não

19. SE JÁ FICASTE EM ALGUMA INSTITUIÇÃO PARA MENORES:

Qual foi o motivo?

_____

20. Que idade tu tinhas quando estiveste na instituição? (Juizado, FASE = EX-FEBEM) __ __ anos

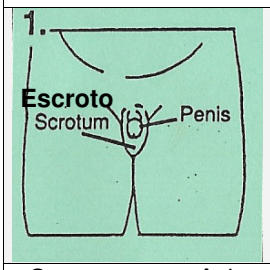
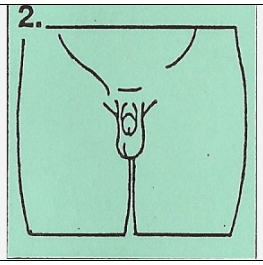
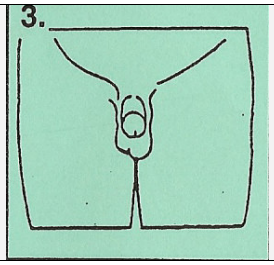
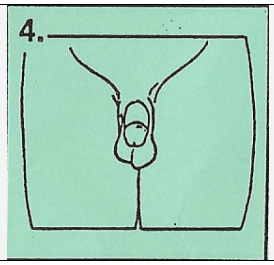
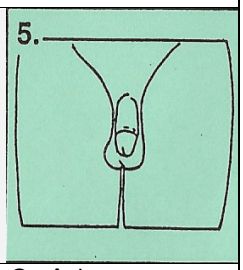
21. Por quanto tempo ficaste na instituição? (Juizado, FASE = EX-FEBEM)	__ __ meses __ __ dias
22. SE JÁ APANHASTE DOS TEUS PAIS: Quantas vezes tu apanhaste dos teus pais **nos últimos 6 meses**?	( ) nenhuma ( ) 1 ou 2 vezes ( ) 3 a 5 vezes ( ) 6 vezes ou mais
23. Tu já fugiste de casa?	( ) sim ( ) não
24. Tu achas que tua relação com teu pai é?	( ) ótima ( ) muito boa ( ) boa ( ) regular ( ) ruim
25. O teu pai já conversou contigo sobre sexo?	( ) sim ( ) não
26. Tu achas que tua relação com tua mãe é?	( ) ótima ( ) muito boa ( ) boa ( ) regular ( ) ruim
27. A tua mãe já conversou contigo sobre sexo?	( ) sim ( ) não
28. Tu achas que a relação entre o teu pai e a tua mãe é?	( ) ótima ( ) muito boa ( ) boa ( ) regular ( ) ruim
SÓ RESPONDE AS PRÓXIMAS DUAS PERGUNTAS SE OS TEUS PAIS SÃO SEPARADOS	
29. Tu achas que a separação dos teus pais te prejudicou de alguma forma?	( ) sim ( ) não
30. Tu achas que a separação dos teus pais foi boa para ti de alguma forma?	( ) sim ( ) não
AGORA VOU TE PERGUNTAR SOBRE RELAÇÕES SEXUAIS.	
31. Tu já tiveste relação sexual (já transaste)?	( ) sim ( ) não
32. SE JÁ TRANSASTE: Que idade tu tinhas na primeira relação (transa)?	___ ___ anos ( ) nunca transei
33. SE JÁ TRANSASTE: A tua primeira transa foi:	( ) porque eu quis ( ) por ter sido forçado ( ) nunca transei

34. SE JÁ TRANSASTE: Com quem foi a tua primeira transa?	( ) namorada ( ) prostituta, garota de programa ( ) algum parente ( ) ficante ( ) empregada ( ) outras pessoas ( ) nunca transei
35. SE JÁ TRANSASTE: Quando foi a última vez que tu transaste?	( ) há menos de 1 mês ( ) 1 a 2 meses ( ) 3 a 4 meses ( ) há 5 meses ou mais ( ) nunca transei
36. SE JÁ TRANSASTE: Nesta última relação sexual, tu usaste algum destes métodos para evitar filho ou te proteger?	Camisinha ( ) não ( ) sim Pílula ( ) não ( ) sim Tirar na hora ( ) não ( ) sim Não usei nada ( ) não ( ) sim Outro: Qual? _____ ( ) nunca transei
37. SE JÁ TRANSASTE: Com quantas pessoas tu transaste na vida?	__ __ pessoas ( ) nunca transei
38. SE JÁ TRANSASTE: Tu já engravidaste alguma menina?	( ) não ( ) sim ( ) nunca transei
39. SE JÁ TRANSASTE E JÁ ENGRAVIDASTE ALGUÉM: Alguma menina que tu engravidaste fez aborto?	( ) não ( ) sim ( ) nunca transei ( ) nunca engravidei alguém

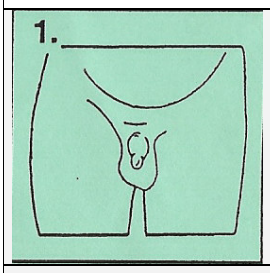
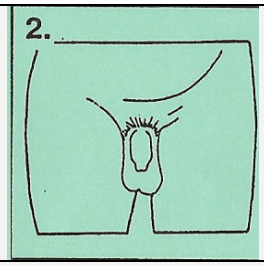
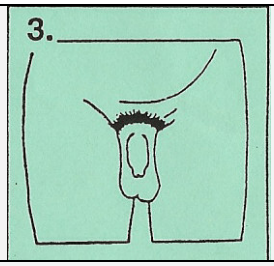
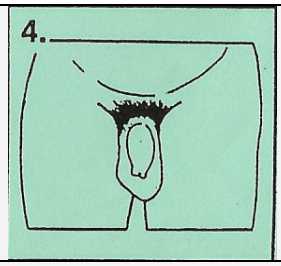
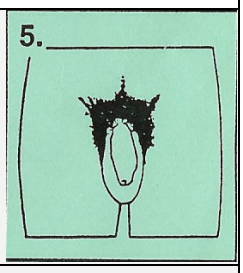
Continua a responder na próxima página

AS PRÓXIMAS DUAS PERGUNTAS SÃO SOBRE TEU DESENVOLVIMENTO SEXUAL

40. Por favor, marca com um X no número do quadrinho abaixo que mais se parece contigo agora:

1.	2.	3.	4.	5.
				
O escroto e o pênis são do mesmo tamanho que quando tu eras mais novo.	O escroto desceu um pouco e o pênis está um pouco mais largo.	O pênis está mais longo e o escroto mais largo.	O pênis está mais longo e o escroto está mais escuro e maior que antes.	O pênis e o escroto têm o tamanho e a forma de um adulto.

41. Por favor, marca com um X no número do quadrinho abaixo que mais se parece contigo agora:

1.	2.	3.	4.	5.
				
Sem pêlos.	Muito poucos pêlos.	Bastantes pêlos.	Os pêlos não se espalharam pelas coxas.	Os pêlos se espalharam pelas coxas.

AS PRÓXIMAS PERGUNTAS SÃO SOBRE COISAS QUE PODEM TER ACONTECIDO CONTIGO

42. Já foste separado dos teus pais para ser cuidado por outra pessoa?	( ) sim	( ) não
43. Já teve brigas com agressão física na tua casa entre adultos ou um adulto que agrediu uma criança ou um adolescente?	( ) sim	( ) não
44. Já aconteceu de não teres comida suficiente em casa ou vestires roupas sujas ou rasgadas porque não tinhas outras?	( ) sim	( ) não
45. Tu já pensaste ou sentiste que o teu pai ou a tua mãe **não queriam** que tu tivesses nascido?	( ) sim	( ) não
46. Tu já pensaste ou sentiste que alguém da tua família te odeia?	( ) sim	( ) não
47. Já aconteceu de um adulto da tua família ou alguém que estava cuidando de ti te bater de um jeito que te deixou machucado ou com marcas?	( ) sim	( ) não
48. Alguém já tentou fazer coisas sexuais contigo contra a tua vontade, te ameaçando ou te machucando?	( ) sim	( ) não

MUITO OBRIGADO POR NOS AJUDAR!

Recusou o confidencial ( )

UNIVERSIDADE FEDERAL DE PELOTAS
FACULDADE DE MEDICINA

ESTUDO LONGITUDINAL DOS NASCIDOS EM 1993

Visita aos 15 anos - 2008

QUESTIONÁRIO DA MÃE

Número do questionário __ __ __ __

Número da criança __ __ __ __

Setor censitário do domicílio __ __ __

Sexo do jovem: (1) Masculino (2) Feminino

Por favor, é aqui que mora o <NOME>? *(SE NÃO MORA → vá p/última página)* **Sou <FULANA> e trabalho na pesquisa que acompanha todos os nascidos em 1993, na cidade de Pelotas. A mãe do <NOME> foi entrevistada no hospital quando <NOME> nasceu e novamente em 2004. Eu gostaria de falar com a mãe.** *(apresentação novamente, se não foi ela que atendeu)* **Eu vou começar pedindo algumas informações para confirmar os dados da mãe e depois vamos falar sobre outras coisas da sua família. Podemos conversar?** *(SE NÃO → agende um retorno e confirme telefone e endereço)*

1) Qual o nome completo da mãe do <NOME>?

_____

Se não for igual ao acima, preencha com o nome correto no espaço abaixo

_____

2) A Sra. é a mãe natural do/a <NOME>? (0) Não (1) Sim → *VÁ PARA A PERGUNTA 6*

3) SE NÃO: **Qual o seu parentesco com o/a <NOME>?**

(01) Mãe adotiva (02) Avó (03) Tia (04) Irmã (05) Madrasta/padrasto

(06) Pai natural (07) Pai adotivo ( ) Outro: Qual? _____

4) SE ADOTIVA: **A Sra. sabe me dizer o nome completo da mãe natural do/a <NOME>?** (0) Não (1) Sim

5) SE SIM: **Qual o seu nome?** _____

6) O nome completo do jovem é _____?

Se não for igual ao acima, preencha com o nome correto no espaço abaixo

_____

7) Apenas para confirmar, qual o endereço completo desta casa?

_____

8) E um ponto de referência para achar a casa?_____

9) Qual o bairro aqui? _____

10) Vocês têm telefone em casa ou celular? (0) Não → *VÁ PARA A PERGUNTA 12* (1) Sim

11) SE SIM: **Qual(s) o(s) número(s)?** _____ _____

AGORA VOU PERGUNTAR SOBRE SUA FAMÍLIA. TODAS AS SUAS RESPOSTAS SÃO PARA UMA PESQUISA E NÃO SERÃO DIVULGADAS PARA NINGUÉM

12) Quantas pessoas moram nesta casa? *(contando com o respondente)* __ __

13) O pai natural do/a <NOME> mora nesta casa? (0) Não → *VÁ PARA A PERGUNTA 15* (1) Sim

14) SE SIM: **Qual a idade do pai natural do <NOME>?** __ __ anos

15) SE NÃO NA 13: **A Sra. tem marido que more aqui?** (0) Não → *VÁ PARA A PERGUNTA 17*
(1) Sim

16) SE TEM MARIDO MORANDO: **Há quanto tempo a Sra. e seu marido estão juntos?** __ __ anos __ __ meses

17) O <NOME> tem irmãos morando nesta casa? (0) Não (1) Sim

18) O <NOME> tem avôs ou avós morando nesta casa? (0) Não (1) Sim

19) Tem mais alguém morando aqui? (0) Não (1) Sim

20) SE SIM: **Quem são as outras pessoas?**

*a)*_____*(escrever na linha o parentesco com NOME e não o nome das pessoas)*

*b)*_____

*c)*_____

*d)*_____

21) Quem é o chefe da família? *(parentesco com o <NOME>)*

(01) Pai Natural (02) Mãe Natural (03) Pai Social ou adotivo ou padrasto (04) Mãe Social ou adotiva ou madrasta

(05) Avô (06) Avó (07) Não tem chefe

( ) Outro, qual?_____*Cód.* __ __

22) Até que série o chefe da família *(ou pessoa que ganha mais na casa)* **completou na escola?** __ série __ grau

23) SE A MÃE NÃO É O CHEFE: **Até que série a Sra. completou na escola?** __ série __ grau

24) Qual a idade da Sra.? *(preencher com a idade da mãe/responsável mulher caso o pai esteja respondendo)* __ __ anos

25) SE TEM MARIDO E ELE NÃO É O CHEFE: **Até que série o seu marido completou na escola?** __ série __ grau

26) SE TEM MARIDO E ELE NÃO É O PAI NATURAL: **Qual a idade do seu marido?** __ __ anos

→ SÓ APLIQUE ESTE BLOCO SE O PAI NATURAL NÃO MORA NA CASA

27a) O pai natural do/a <NOME> está vivo? (0) Não → *VÁ PARA A PERGUNTA 28*
(1) Sim (9) Não sei

27b) **Qual a idade do pai natural do <NOME>?** __ __ anos

28) SE NÃO ESTÁ VIVO: **Que idade o pai natural do <NOME> tinha quando faleceu?** __ __ anos

29) SE NÃO ESTÁ VIVO: **Que idade o <NOME> tinha quando o pai dele/a faleceu?** __ __ anos

30) SE NÃO ESTÁ VIVO: **Qual o motivo do falecimento do pai natural do <NOME>?**

_____*Cód.* __ __

31): **A Sra. e o pai natural** *<os pais naturais>* **do <NOME> se separaram?** (0) Não → *VÁ PARA A PERGUNTA 33*
(1) Sim

32) **Que idade o <NOME> tinha quando os pais naturais se separaram?** ___ ___ anos (77) Nunca se casaram
(99 SE NÃO SABE; 00 ≤ 1 ANO OU GRÁVIDA)

33) SE ESTÁ VIVO: **O/A <NOME> costuma ver o pai natural?** (0) Não (1) Sim

34) SE NÃO COSTUMA VER O PAI: **Com que idade o <NOME> perdeu o contato com o pai?** __ __ anos
(99 SE NÃO SABE; 00 SE NUNCA TEVE CONTATO)

→ *SÓ APLIQUE ESTE BLOCO SE A MÃE NATURAL NÃO MORA NA CASA*	
35) A mãe natural do/a <NOME> está viva?	(0) Não (1) Sim → *VÁ PARA A PERGUNTA 39* (9) Não sei
36) SE NÃO ESTÁ VIVA: **Que idade a mãe natural do <NOME> tinha quando faleceu?**	__ __ anos
37) SE NÃO ESTÁ VIVA: **Que idade o <NOME> tinha quando a mãe dele/a faleceu?**	__ __ anos
38) SE NÃO ESTÁ VIVA: **Qual o motivo do falecimento da mãe natural do <NOME>?** _____ *Cód.* __ __	
39) **O Sr. e a mãe natural** <*os pais naturais*> **do <NOME> se separaram?**	(0) Não → *VÁ PARA A PERGUNTA 41* (1) Sim
40) **Que idade o <NOME> tinha quando os pais naturais se separaram?**	__ __ anos (77) Nunca se casaram *(99 SE NÃO SABE; 00 ≤ 1 ANO OU GRÁVIDA)*
41) SE ESTÁ VIVA: **O/A <NOME> costuma ver a mãe natural?**	(0) Não (1) Sim
42) SE NÃO COSTUMA VER A MÃE: **Com que idade o <NOME> perdeu o contato com a mãe?**	__ __ anos

→ *SÓ APLIQUE ESTE BLOCO SE A MÃE NATURAL ESTIVER RESPONDENDO*	
43) No total, quantas gravidezes a Sra. teve? *(incluir aborto e natimorto)*	__ __ gravidezes
44) Com que idade a Sra. teve seu primeiro filho?	__ __ anos
45) SE TEVE MAIS DE UMA GRAVIDEZ: **No total, quantos filhos nascidos vivos a Sra. teve?**	__ __ filho(s)
46) SE TEVE MAIS DE 1 FILHO: **A Sra. teve algum filho antes do/a <NOME>?**	(00) Não ( ) Sim → **Quantos?** __ __
47) SE TEVE MAIS DE 1 FILHO: **A Sra. teve algum filho depois do/a <NOME>?**	(00) Não ( ) Sim → **Quantos?** __ __
48) SE TEVE MAIS DE 1 FILHO: **Todos os seus filhos são do mesmo pai?**	(0) Não (1) Sim

49) Na família do pai e da mãe natural de <NOME> tem alguma origem como a africana, portuguesa, espanhola... ou alguma outra? *[esperar o relato e marcar qual origem]*	*(99) IGN*
a. alemã	(0) Não (1) Sim
b. italiana	(0) Não (1) Sim
c. árabe/libanesa	(0) Não (1) Sim
d. portuguesa	(0) Não (1) Sim
e. espanhola	(0) Não (1) Sim
f. africana	(0) Não (1) Sim
g. japonesa, chinesa	(0) Não (1) Sim
h. brasileira	(0) Não (1) Sim
i. Outra, Qual? *[escreva]*	*Cód.* __ __

50) A Sra. pratica alguma religião que eu vou dizer: *(Ler as opções de pergunta)*	
a. Católica?	(0) Não (1) Sim
b. Espírita?	(0) Não (1) Sim
c. Umbanda?	(0) Não (1) Sim
d. Evangélica?	(0) Não (1) Sim
e. Protestante?	(0) Não (1) Sim
f. Outra?	(0) Não (1) Sim, qual? _____ *Cód.* __ __

51) No <u>último mês,</u> a Sra. foi a algum culto, missa, sessão ou igreja? (0) Não (1) Sim (9) Não lembro

52) Em qual religião o <NOME> foi criado/a? (00) Nenhuma (01) Católica (02) Espírita (03) Umbanda (04) Evangélica (05) Protestante (99) IGN

( ) Outra, qual? _____ *Cód.* __ __

AGORA VOU PERGUNTAR SOBRE TRABALHO E QUANTO GANHAM AS PESSOAS DA CASA

53) Alguém que mora aqui está desempregado? (0) Não (1) Sim

54) A Sra. trabalhou, sendo paga, no último ano?

(0) Não → *VÁ PARA PERGUNTA 57*

(1) Sim (2) Sim, em casa para fora (3) Aposentada → *VÁ PARA A PERGUNTA 57 OU 58*

(4) Estudante ( ) Outro, qual? _____ *Cód.* __

55) SE TRABALHOU: **Quantas horas a Sra. trabalhou por dia?** __ __ horas por dia

56) SE TRABALHOU: **A Sra. trabalhou em casa para fora ou trabalhou fora de casa?** (1) Em casa p/fora (2) Fora de casa

57) SE A MÃE NÃO É O CHEFE DA FAMÍLIA: **O chefe da família** *(ou pessoa que ganha mais)* **trabalhou, sendo pago, no último mês?**

(0) Não (1) Desempregado (2) Sim (3) Aposentado (4) Estudante ( ) outro _____

58) No mês passado, quanto receberam as pessoas que moram na casa? *(identifique parentesco em relação à <NOME>)*

a) Pessoa 1: _____ R$ ___ ___ ___ ___ ___ ou _____ SM *[sem somar o 13°Férias]*

b) Pessoa 2: _____ R$ ___ ___ ___ ___ ___ ou _____ SM

c) Pessoa 3: _____ R$ ___ ___ ___ ___ ___ ou _____ SM

d) Pessoa 4: _____ R$ ___ ___ ___ ___ ___ ou _____ SM

e) Pessoas 5,6,7,...: _____ R$ ___ ___ ___ ___ ___ ou _____ SM

59) No mês passado, a família teve outra fonte de renda? (0) Não → *VÁ PARA A PERGUNTA 61* (1) Sim

60) SE TEVE OUTRA RENDA: **Quanto?** R$ _____ ou _____ SM

AGORA VOU PERGUNTAR SOBRE ALGUMAS COISAS DA SUA CASA

61) Vocês têm radio em casa? Quantos? (0) Não (1) Sim, __ __ rádio(s)

62) Vocês têm televisão colorida em casa? Quantas? (0) Não (1) Sim, __ __ TV(s)

63) Vocês têm carro? Quantos? (0) Não (1) Sim, __ __ carro(s)

64) Vocês têm aspirador de pó? (0) Não (1) sim

65) Vocês têm empregada doméstica mensalista? Quantas? (0) Não (1) sim, __ __ empregada(s)

66) Vocês têm máquina de lavar roupa? *(não contar tanquinho)* (0) Não (1) Sim

67) Vocês têm videocassete ou DVD? (0) Não (1) Sim

68) Vocês têm aparelho de som? *(não vale do carro)* (0) Não (1) Sim

69) Vocês têm vídeo game? (0) Não (1) Sim

70) Vocês têm computador? (0) Não (1) Sim

71) SE TEM COMPUTADOR: **Vocês têm Internet?** (0) Não (1) Sim

72) Vocês têm geladeira? (0) Não (1) Sim

73) Vocês têm freezer separado, geladeira duplex? (0) Não (1) Sim

74) Quantos banheiros têm na casa? __ __ banheiro(s)

75) SE TEM BANHEIRO: **Quantos banheiros com chuveiro têm na casa?** __ __ banheiro(s) com chuveiro

76) Vocês têm água encanada em casa? (0) Não (1) Sim, dentro de casa (2) Sim, no quintal

77) Como é a privada da casa? *(Ler opções)*

(1) Sanitário com descarga **(2) Sanitário sem descarga** **(3) Casinha / fossa negra** **(0) Não tem**

78) Esta casa é própria, alugada ou emprestada?

(1) Própria (2) Alugada (3) Emprestada ( ) Outro, qual? _____ *Cód.* __

79) Quantas peças na casa são usadas para dormir? __ __ peças

80) Quantas pessoas dormem na mesma peça que o/a <NOME>? (00) Ele/a dorme sozinho/a __ __ pessoas

AGORA VAMOS FALAR UM POUCO SOBRE A PRÁTICA DE EXERCÍCIOS

81) Desde <*dia*> da semana passada, a Sra. praticou algum exercício físico no seu tempo livre?
(0) Não → *VÁ PARA A PERGUNTA 84 OU 87* (1) Sim

82) SE ELA PRATICOU: **Quantos dias?** __ dias

83) SE ELA PRATICOU: **Quanto tempo cada dia?** __ __ horas __ __ minutos

84) SE TEM MARIDO OU PAI NATURAL: **Desde <*dia*> da semana passada, o seu marido/companheiro praticou algum exercício físico no seu tempo livre?**
(0) Não → *VÁ PARA A PERGUNTA 87* (1) sim

85) SE ELE PRATICOU: **Quantos dias?** __ dias

86) SE ELE PRATICOU: **Quanto tempo cada dia?** __ __ horas __ __ minutos

AGORA VAMOS FALAR SOBRE A SAÚDE DO/A <NOME>

87) Se o/a <NOME> precisar consultar, a Sra. leva ele/a ao médico.... (*Ler opções)*

(1) Do SUS, posto de saúde **(2) De convênio** **(3) Particular**

88) Alguma vez na vida o/a <NOME> teve asma ou bronquite? (0) Não (1) Sim (9) IGN

89) Alguma vez na vida o médico disse que o/a <NOME> tinha asma ou bronquite? (0) Não (1) Sim (9) IGN

90) Alguma vez na vida o médico disse que o/a <NOME> tinha rinite alérgica? (0) Não (1) Sim (9) IGN

91) Alguma vez na vida o médico disse que o/a <NOME> tinha alergia de pele ou eczema? (0) Não (1) Sim (9) IGN

92) Desde <*mês*> do ano passado o/a <NOME> teve algum problema de visão?
(0) Não → *VÁ PARA A PERGUNTA 94* (1) Sim (9) IGN

93) SE TEVE PROBLEMA DE VISÃO: **Foi dito pelo médico?** (0) Não (1) Sim (9) IGN

94) O/a <NOME> usa óculos ou lente de contato? (0) Não (1) sim, só óculos (2) Sim, só lente (3) Sim, óculos e lente

95) O/a <NOME> tem algum outro problema de saúde que lhe pareça sério? (0) Não → *VÁ PARA A PERGUNTA 97*
(1) Sim

96) SE SIM: **Qual?** _____ *Cód.* __ __

_____

97) No último ano, desde < *mês* > do ano passado, o/a <NOME> consultou com...

a) Clínico geral ou pediatra? (0) Não → *97B* (1) Sim (9) IGN

a1) SE SIM: **Por qual motivo?** *CID* __ __ __

b) Nutricionista? (0) Não → *97C* (1) Sim (9) IGN

b1) SE SIM: **Por qual motivo?** *CID* __ __ __

c) Psicólogo? (0) Não → *97D* (1) Sim (9) IGN

c1) SE SIM: **Por qual motivo?** *CID* __ __ __

d) Psiquiatra? (0) Não → *97E* (1) Sim (9) IGN

d1) SE SIM: **Por qual motivo?** *CID* __ __ __

e) Dentista? (0) Não → *97F* (1) Sim (9) IGN

e1) SE SIM: **Por qual motivo?** *CID* __ __ __

f) Outro médico?
(Escrever especialidade) _____ (0) Não → *VÁ PARA A PERGUNTA 98* (1) Sim (9) IGN

f1) SE SIM: **Por qual motivo?** *CID* __ __ __

98) Alguma vez na vida o/a <NOME> quebrou algum osso?

(0) Não → *VÁ PARA A PERGUNTA 101* (1) Sim (9) IGN → *VÁ PARA A PERGUNTA 101*

Preencher os espaços abaixo para cada osso quebrado. Se for mais de 3, escreva na última linha os outros anotando a idade.

99) *SE SIM:* **Qual osso quebrou?**	**100)** *SE SIM:* **Qual a idade do/a <NOME> quando quebrou?**
*a)*_____*Cód*___ ___	a) __ __ anos
*b)*_____*Cód*___ ___	b) __ __ anos
c) _____*Cód*___ ___	c) __ __ anos

Outro(s) osso(s):_____

AGORA VAMOS FALAR SOBRE HOSPITALIZAÇÕES DO/A <NOME>

101) O/A <NOME> teve que baixar no hospital no último ano (desde <*mês*> do ano passado)? (0) Não → *VÁ PARA A PERGUNTA 104* (1) Sim

102) SE SIM: **Por qual motivo?**	**103)** *SE SIM:* **Essa hospitalização foi por?** *(Ler opções)*
a) _____ *CID* __ __ __	a) **(1) Convênio (2) Particular (3) SUS**
*b)*_____ *CID* __ __ __	b) **(1) Convênio (2) Particular (3) SUS**
*c)*_____ *CID* __ __ __	c) **(1) Convênio (2) Particular (3) SUS**

104) Alguma vez na vida, o/a <NOME> esteve hospitalizado/a sem contar o último ano?

(0) Não → *VÁ PARA A PERGUNTA 106* (1) Sim (9) IGN → *VÁ PARA A PERGUNTA 106*

105) SE SIM: **Quantas vezes?** __ __ vezes

AGORA VAMOS FALAR SOBRE REMÉDIOS

106) Nos últimos 15 dias, o/a <NOME> usou algum remédio? (0) Não → *VÁ PARA A PERGUNTA 111* (1) Sim

Preencher os espaços abaixo para cada remédio

107) SE SIM: **Qual remédio?**	*108) SE SIM:* **Por qual motivo, doença?**	*109) Pedir a embalagem e se não tiver perguntar:* **Era em gotas, xarope, comprimido, injeção ou outra forma?**	*110) SE SIM:* **Foi receitado por um médico?**
a)_____	a) _____ *CID* __ __ __	a) _____	a) (0) Não (1) Sim
b)_____	b) _____ *CID* __ __ __	b) _____	b) (0) Não (1) Sim
c) _____	c) _____ *CID* __ __ __	c) _____	c) (0) Não (1) Sim
d) _____	d) _____ *CID* __ __ __	d) _____	d) (0) Não (1) Sim
e)_____	e) _____ *CID* __ __ __	e) _____	e) (0) Não (1) Sim

AGORA VAMOS FALAR SOBRE O COMPORTAMENTO DE <NOME> NOS ÚLTIMOS SEIS MESES. RESPONDA DA MELHOR MANEIRA POSSÍVEL, MESMO QUE A SRA. NÃO TENHA CERTEZA OU QUE A PERGUNTA PAREÇA ESTRANHA
(Ler as opções).

	Falso	Mais ou menos verdadeiro	Verdadeiro
111) <NOME> tem consideração pelos sentimentos de outras pessoas.	(0)	(1)	(2)
112) <NOME> não consegue parar sentado quando tem que fazer o tema ou comer; mexe-se muito, batendo em coisas, derrubando coisas.	(0)	(1)	(2)
113) <NOME> muitas vezes se queixa de dor de cabeça, dor de barriga ou enjôo.	(0)	(1)	(2)
114) <NOME> tem boa vontade para compartilhar doces, brinquedos, lápis... com outras crianças ou adolescentes.	(0)	(1)	(2)
115) <NOME> freqüentemente tem acessos de raiva ou crises de birra.	(0)	(1)	(2)
116) <NOME> é solitário, prefere brincar sozinho.	(0)	(1)	(2)
117) <NOME> geralmente é obediente e normalmente faz o que os adultos lhe pedem.	(0)	(1)	(2)
118) <NOME> tem muitas preocupações, muitas vezes parece preocupado com tudo.	(0)	(1)	(2)
119) <NOME> tenta ser atencioso se alguém está magoado, aflito ou se sentindo mal.	(0)	(1)	(2)
120) <NOME> está sempre agitado, balançando as pernas ou mexendo as mãos.	(0)	(1)	(2)
121) <NOME> tem pelo menos um bom amigo ou amiga.	(0)	(1)	(2)
122) <NOME> freqüentemente briga com outras crianças/adolescentes ou as amedronta.	(0)	(1)	(2)
123) <NOME> freqüentemente parece triste, desanimado ou choroso.	(0)	(1)	(2)
124) <NOME> em geral, é querido por outras crianças ou adolescentes.	(0)	(1)	(2)
125) <NOME> facilmente perde a concentração, fica distraído.	(0)	(1)	(2)
126) <NOME> fica inseguro quando tem que fazer alguma coisa pela primeira vez, facilmente perde a confiança em si mesmo.	(0)	(1)	(2)
127) <NOME> é gentil com crianças ou adolescentes mais novas.	(0)	(1)	(2)
128) <NOME> geralmente engana ou mente.	(0)	(1)	(2)
129) Outras crianças 'pegam no pé' do seu filho ou o atormentam.	(0)	(1)	(2)
130) <NOME> freqüentemente se oferece para ajudar outras pessoas (pais, professores, outras crianças ou adolescentes).	(0)	(1)	(2)
131) <NOME> pensa nas coisas antes de fazê-las.	(0)	(1)	(2)
132) <NOME> rouba coisas de casa, da escola ou de outros lugares.	(0)	(1)	(2)
133) <NOME> se dá melhor com os adultos do que com outras crianças ou adolescentes.	(0)	(1)	(2)
134) <NOME> tem muitos medos, assusta-se facilmente.	(0)	(1)	(2)
135) <NOME> completa as tarefas que começa, tem boa concentração.	(0)	(1)	(2)

136) Pensando no que acabou de responder, a Sra. acha que o/a <NOME> tem alguma dificuldade? Pode ser uma dificuldade emocional, de comportamento, pouca concentração ou para se dar bem com outras pessoas? *(Ler opções)*

(0) Não → *VÁ PARA A ÚLTIMA PÁGINA*

(1) Sim, pequenas dificuldades (2) Sim, dificuldades bem definidas (3) Sim, dificuldades graves

137) Há quanto tempo essas dificuldades existem? *(Ler opções)*

(1) menos de 1 mês (2) 1 a 5 meses (3) 6 a 12 meses (4) mais de 1 ano

138) Estas dificuldades incomodam ou aborrecem o/a <NOME>? *(Ler opções)*

(1) Nada (2) Um pouco (3) Muito (4) Mais que muito

139) Estas dificuldades atrapalham o dia a dia do/a <NOME> em alguma das situações abaixo:

a. dia a dia em casa? *(Ler opções)* **(1) Nada (2) Um pouco (3) Muito (4) Mais que muito**

b. com os amigos dele/a? *(Ler opções)* **(1) Nada (2) Um pouco (3) Muito (4) Mais que muito**

c. para aprender no colégio? *(Ler opções)* **(1) Nada (2) Um pouco (3) Muito (4) Mais que muito**

d. para passear, praticar esportes (lazer)? *(Ler opções)* **(1) Nada (2) Um pouco (3) Muito (4) Mais que muito**

140) Estas dificuldades são um peso para a Sra. ou para a família como um todo? *(Ler opções)*

(1) Nada (2) Um pouco (3) Muito (4) Mais que muito

AGORA, PARA FINALIZAR, VOU LHE FAZER ALGUMAS PERGUNTAS SOBRE A FORMA DE COZINHAR NA SUA CASA.

141. Agora vou listar alguns tipos de gordura e peço que me diga qual ou quais dessas a Sra usa para preparar a comida da sua família.

Tipo de gordura	Quantas vezes?								Freqüência						
	N	1	2	3	4	5	6	7	8	9	10	D	S	M	A
Banha de porco															
Gordura de côco															
Margarina															
Manteiga															
Óleo															

142. SE USA ÓLEO PARA PREPARAR A COMIDA DA FAMÍLIA**: Que tipo de óleo a Sra usa mais seguido?**

(01) de arroz (02) de canola (03) de girassol (04) de soja (05) de milho (06) de oliva
( ) outro_____ cód __ __

Observações importantes:

_____

_____

_____

_____

_____

_____

PREENCHA ESTE BLOCO A SEGUIR AO TÉRMINO DO QUESTIONÁRIO OU QUANDO A MÃE OU O RESPONSÁVEL PELO/A <NOME> NÃO MORA NO ENDEREÇO DADO

AGORA EU GOSTARIA DE LHE PEDIR O ENDEREÇO DE OUTROS PARENTES OU AMIGOS QUE POSSAM AJUDAR A LOCALIZAR VOCÊS QUANDO FOR PRECISO.

Outro endereço 1 / nome: _____

Bairro: _____ Cidade: _____

Ponto de Referência: _____

Telefone da residência: _____ Relação com <NOME>: _____

Outro endereço 2 / nome: _____

Bairro: _____ Cidade: _____

Ponto de Referência: _____

Telefone da residência ou celular: _____ Relação com <NOME>: _____

A SRA. PODERIA ME INFORMAR <u>SOMENTE</u> TELEFONE DE <u>OUTROS</u> PARENTES OU AMIGOS QUE POSSAM AJUDAR A LOCALIZAR VOCÊS QUANDO FOR PRECISO?

Telefone celular 1: _____ Relação com <NOME>: _____

Telefone celular 2: _____ Relação com <NOME>: _____

Telefone fixo 1: _____ Relação com <NOME>: _____

Telefone fixo 2: _____ Relação com <NOME>: _____

Local de trabalho do marido ou pai natural: _____

Endereço: _____

Telefone: _____ Cidade/Bairro: _____

Nome de um colega "próximo" de trabalho: _____

Local de trabalho da mãe: _____

Endereço: _____

Telefone: _____ Cidade/Bairro: _____

Nome de um colega "próximo" de trabalho: _____

A família pretende se mudar? (0) não (1) sim → Para onde e quando?

Cidade: _____ Data prevista para mudança: __ __ / __ __ / 2 0 0 __

Futuro endereço: _____

Bairro: _____ Ponto de referência: _____

Algum telefone: _____

<u>OBSERVAÇÕES</u> *(anote o que houve em cada tentativa feita para realizar a entrevista)*

Tentativa 1: _____ Tentativa 3: _____

Tentativa 2: _____ Tentativa 4: _____

MUITO OBRIGADA POR SUA COLABORAÇÃO. FOI MUITO IMPORTANTE A SRA. TER PARTICIPADO NESTA ETAPA DO ESTUDO. QUALQUER DÚVIDA A SRA. PODE ESCLARECER ATRAVÉS DO NOSSO TELEFONE NA FACULDADE DE MEDICINA, NO CENTRO DE PESQUISA <u>COM *FERNANDA PELO TELEFONES 3284-1324 OU 3284-1300 – OU FALAR COM AS PROFESSORAS FATIMA VIEIRA OU MARILDA NEUTZLING*</u>