Multidimensional impact of severe mental illness on family members: systematic review

Wubalem Fekadu 1,2, Awoke Mihiretu 3, Tom K J Craig 4, Abebaw Fekadu 3,5

ABSTRACT

Objective The impact of severe mental illnesses (SMIs) is not limited to the person with the illness but extends to their family members and the community where the patient comes from. In this review, we systematically analyse the available evidence of impacts of SMI on family members, including parents, grandparents, siblings, spouses and children.

Data sources PubMed, PsycINFO, Embase and Global Index Medicus were searched from the inception of each database up to 9 November 2019. We also did manual searches of grey literature.

Eligibility criteria We included studies that assessed the impacts of SMI on any family member. We excluded studies in admitted clinics and acute wards to rule out the acute effect of hospitalisation.

Data extraction Two reviewers extracted data independently using the Cochrane handbook guideline for systematic reviews and agreed on the final inclusion of identified studies.

Risk of bias The quality of the included studies was assessed using effective public health practice project quality assessment tool for quantitative studies. The review protocol was registered in the PROSPERO database.

Results We screened a total of 12 107 duplicate free articles and included 39 articles in the review. The multidimensional impact of SMI included physical health problems (sleeplessness, headache and extreme tiredness), psychological difficulties (depression and other psychological problems) and socioeconomic drift (less likely to marry and higher divorce rate and greater food insecurity). Impacts on children included higher mortality, psychological difficulties (depression and other psychological problems) and socioeconomic drift (less likely to marry and higher divorce rate and greater food insecurity). Impacts on adults included higher mortality, psychological difficulties (depression and other psychological problems) and socioeconomic drift (less likely to marry and higher divorce rate and greater food insecurity). Impacts on children included higher mortality, psychological difficulties (depression and other psychological problems) and socioeconomic drift (less likely to marry and higher divorce rate and greater food insecurity).

Conclusions Our review indicated a high level of multidimensional impact across multiple generations. The serious nature of the impact calls for interventions to address the multidimensional and multigenerational impact of SMI, particularly in low/middle-income countries. Given the relatively high number of studies rated methodologically weak, more robust studies are indicated.

INTRODUCTION

Severe mental illnesses (SMIs), mainly schizophrenia, bipolar disorder and major depression, are conditions that tend to be chronic and relapsing in nature and may lead to serious impairment in one or more areas of functioning.1 SMIs decrease productivity and are associated with high rates of physical illness comorbidity and excess mortality.2-6 The negative impacts of SMI are not limited to the person with the illness but extend to the family members and the community where the person comes from. These impacts may particularly pronounce in low/middle-income countries (LMICs), where the treatment gap for mental disorders is very high. In LMICs, family members or relatives take almost all the responsibility of caring for the patient and the impact transcends generations.7-10

Caring for a person with mental illness takes a substantial toll on social relationships, employment and income and psychological well-being.11 Most families fear for their future health in addition to the stress of caring for their ill family member.9 10 Families of people with SMI have worse physical health and seek more medical care than those families without SMI.12 13

Children of people with SMI have higher risk of developing physical and mental illness for a variety of reasons, including stigma, financial difficulties, the burden of caring for ill parents and genetic vulnerability. The impact on children is long term and affects their adult health and relationships.14-18

There is no agreement in the literature about the level of burden in relation to

Strength and limitations of this study

- Comprehensive search strategy.
- Screening, extraction and rating of articles carried out by two reviewers.
- Assessment of multidimensional impact across multiple generations.
- Meta-analysis was not possible because of the heterogeneity of studies.


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amount of time spent on caregiving. Some studies relate the burden level with time spent for caregiving\textsuperscript{19-21} while others evaluate the burden at the household level.\textsuperscript{22,23} Some studies also measure the impact of the illness on extended families such as grandparents and family members living in separate households with no direct contact with the patient.\textsuperscript{24,25}

Although there are small-scale studies and some literature reviews on aspects of the impact of SMI on family members,\textsuperscript{26-28} there are no reviews looking at the multidimensional impact of different types of SMI across generations. This paper aims to systematically review the available evidence on the impacts (health, socioeconomic and schooling) of schizophrenia, bipolar disorder and major depression on family members.

**METHODS**

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.\textsuperscript{29} We have registered the protocol on the PROSPERO international register of systematic reviews online.

**Search strategy**

Four databases were searched: PubMed, Embase, PsycINFO and Global Index Medicus. The databases were searched from the inception of each database up to 9 November 2019 with no language restriction. We did a forward and backward search on included studies and hand searching for grey literature from Google Scholar and university repositories.

The search terms consisted of key Medical Subject Heading (MeSH) and Emtree terms, and controlled vocabularies for illness, list of family members affected by the illness and impact dimensions. The terms were combined with the Boolean term AND:

1. **Terms for illness:** ‘Severe mental illness’ OR schizophrenia OR psychosis OR bipolar OR ‘major depressive disorder’ OR ‘major depression’
2. **Terms for list of family member affected by the illness:** Caregiver OR family OR parent* OR child OR offspring OR siblings OR spouse.
3. **Terms for impact dimensions:** Burden OR Impact health OR morbidity OR mortality OR disability OR Psychopathology OR poverty OR economy OR financial OR education OR school. A full search strategy and search terms for databases can be accessed in a supplementary file (online supplementary file 1).

**Eligibility criteria**

We have included peer-reviewed studies that met the following criteria:

- **Participant** Any family member(s) or informal caregiver(s) (biologically related or not) of people with clinically diagnosed SMI (schizophrenia, bipolar disorder and major depression).

- **Duration of illness** Duration of illness 1 year or longer. If the duration was not mentioned, we have excluded studies in acute inpatients and acute wards to rule out the acute effect of hospitalisation.

- **Exposure** SMI.

- **Outcome** Burden/impact (positive and negative) and its dimensions excluding family genetic studies.

- **Study design** All excluding qualitative studies, case report and case series.

- **Publication year** Not restricted.

- **Data extraction** Studies were first screened on title and abstracts by two reviewers (WF and AM) independently. The two reviewers extracted data independently using the Cochrane handbook guideline for systematic reviews.\textsuperscript{30} Discrepancies were resolved with discussion. The excluded articles and the reasons for exclusion were documented. Author, publication year, country, aim, study design, population, sample size, type of illness, duration, key outcomes (including measures) were extracted. The proportion of agreement between the two reviewers during the title and abstract screening was 91% and 96% in the full-text screening.

- **Assessment of bias** Two reviewers assess the risk of biases independently and reconciled with effective public health practice project (EPHPP) quality assessment tool for quantitative studies.\textsuperscript{31} The tool consists of eight criteria of which six were rated: selection bias, allocation bias, control of confounders, blinding of outcome assessors, data collection methods, and withdrawals and dropouts. Each section was rated as ‘weak’, ‘moderate’ or ‘strong’. A global rating of each article was decided as weak, moderate and strong (online supplementary file 2).

**RESULTS**

**Study selection**

In total, 13 102 articles were identified in the initial search. A total of 12 107 articles were eligible for title and abstract screening after removing 1 143 duplicates. Four hundred
seven articles were eligible for whole paper review after removing 11 700 articles at the title and abstract screening stage, mainly because the study did not concern SMI. Three hundred sixty-eight articles were not eligible for the final manuscript because of short illness duration, lack of clinical diagnosis, study setting (in acute wards and inpatients), focus of the studies and study design (figure 1). We found six articles written in languages other than English. All had abstracts in English, but none fulfilled the inclusion criteria and so were not included in the final extraction. A total of 39 articles included in the review.

Study characteristics
Thirty-nine studies were included in the final review, which were conducted in 20 different counties, mostly high-income countries (n=30, 76.9%). Most studies were conducted in Europe (n=14) and USA (n=9). The rest comes from Asia (n=6), Africa (n=6) and Latin America (n=4).

Sixteen (41%) studies were longitudinal, and the remaining were cross-sectional (with and without a comparison group) and case control studies. The publication year ranged from 2001 to 2018, while the durations of illness ranged from 1 year to 30 years. Eighteen of the studies focused on family members of people with schizophrenia, eight were done on bipolar disorder, four on major depressive disorder (MDD) while the remaining nine on SMI. The impact dimensions included health (n=17), socioeconomic (n=13) and impact on children:
education, nutrition, mortality (n=9). The sample size of the studies ranged from 51 up to 5504. Two birth cohorts involved large sample sizes: one with 684 248 birth children and another study have 3654 cases and 1 439 215 controls (tables 1 and 2).

Risk of bias within studies

Nineteen studies were rated as strong, twelve moderate and the remaining eight were rated as weak in the global rating of the articles with EPHPP. Only six out of the thirty-nine studies were considered free from selection bias while the remaining studies had moderate to weak selection bias problems. Thirty-three studies failed to control for most of the confounders and nine out of thirty-nine were weak in controlling confounders. Twenty-seven studies were conducted with valid and reliable instruments.

Impacts

The main impact dimensions were related to health, economic and social domains, and impact on children’s education and nutrition.

Impact on health and quality of life

Seventeen studies reported the health impact of having a family member with SMI; two studies reported overall health impact, three assessed physical health and the remaining reported on psychological impact. Two studies report low mental and physical composite score measured with the Short-Form 36 compared with healthy controls.32 33 Family members have poor perceived physical health (65.5%), sleeplessness (53.1%), headache (44.2%) and extreme tiredness (56.2%). These physical problems were significantly higher in family members of people with SMI than the family members who did not have SMI: sleep problems (42.7% vs 28.5%), pain (39.7% vs 30.4%), headache (48% vs 42%) and heartburn (31.7% vs 22.9%).32 33

The magnitude of psychological problems in family members was high, including parents, siblings, children and grandchildren of people with SMI. One study reported higher depression score (Centre for Epidemiological Studies of Depression Scale) among parents of adult children with bipolar disorder compared with population comparisons (US$93.93) than caregivers of other medical conditions (US$64.8) and general population comparisons (US$56.18).45 Family members ability to pursue regular activities was also affected.46

Impact on children

Four studies reported the level of psychopathology in children of parents with SMI. In one study the level of psychopathology differed by the specific type of illness. In this study 58.5% of the children of parents with a diagnosis of schizophrenia had lifetime axis I Diagnostic Statistical Manual IV (DSM-IV) psychiatric disorder compared with 36.7% of children of parents with bipolar disorder and 17.8% in children of healthy parents.47

One longitudinal study reported 38.7%, 35.6% and 15.2% lifetime psychiatric disorders in children of parents with schizophrenia spectrum and other psychotic disorders, children of parents with bipolar disorder and children of parents without any mental disorder, respectively.48

Psychopathology was compared by two matched studies. It was reported by 63% in offspring of parents with bipolar disorder and 33% in matched controls, while current axis I disorder was reported by 21.33% exposed offspring and 14% among controls.49 50 These children also receive more counselling (30.9% vs 13.5%), take medication (18.7% vs 5.3%) and experience more psychiatric hospitalisations.49

Children’s level of functioning was also affected.48 50 These children had poorer school performance and they were more likely to be placed in special rooms at school and face malnutrition.49 51–53

Socioeconomic impact

Difficulties in social relationships and family finances were also reported by several studies. The social impacts included higher divorce rate, fewer marriages, poor family cohesion and a strained family environment. Some studies report these impacts on a family member while others report across the entire household.

Family members with mental illness reported less chance of marriage (eg, 54.7% in children of parents with schizophrenia vs 66% in general population) and higher divorce rate (eg, 20% in parents of adult children with bipolar disorder vs 10.2% in controls).33 39 Family cohesion is lower and the environment in these families was also strained in these family members.33 41

Financial impact was higher than other impact dimensions in three studies.42–44 These economic impacts were due to costs related to care (cost for treatment, cost of informal care giving), productivity (inability to work and time for care giving) and cost of treatment side effects, suicide and stigma. For example, in one study, out-of-pocket medical expense per year was higher in caregivers of people with bipolar disorder (US$93.93) than caregivers of other medical conditions (US$64.8) and general population comparisons (US$56.18).45 Family members ability to pursue regular activities was also affected.46

The economic impact might result in long-term economic drift and food insecurity. One study found 32.5% of households of people with SMI experience severe food insecurity compared with 15.9% among the general population.42
### Table 1  Impact of SMI on family members in LMICs

<table>
<thead>
<tr>
<th>Author (year) and country</th>
<th>Study design and illness duration</th>
<th>Participants (number and relationship)</th>
<th>Outcome</th>
<th>Result</th>
<th>Global quality rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashaba et al 2015 Uganda</td>
<td>Case control</td>
<td>▶ 836 (mothers of children admitted with malnutrition) ▶ 83 (mothers of children admitted with other cases)</td>
<td>Maternal depression and malnutrition</td>
<td>Maternal depression and malnutrition in children (AOR=2.4, 1.11–5.18)</td>
<td>Strong</td>
</tr>
<tr>
<td>Igberase et al 2012 Nigeria</td>
<td>Cross-sectional ▶ 13.9 years</td>
<td>200 caregivers of people with SCZ</td>
<td>Burden and correlates</td>
<td>Higher mean score on financial scale (1.94 (0.68))</td>
<td>Weak</td>
</tr>
<tr>
<td>Petresco et al 2009 Brazil</td>
<td>Comparative cross-sectional</td>
<td>Children (6–18 years) of ▶ Women with BPD ▶ Mild to moderate MI ▶ Control</td>
<td>Psychopathology Live with biological father</td>
<td>Offspring of mothers with BPD (69.8%) Offspring from mothers with other psychiatric disorders (25.5%) and controls (28.8%)</td>
<td>Strong</td>
</tr>
<tr>
<td>Shibre et al 2012 Ethiopia</td>
<td>Longitudinal</td>
<td>307 caregivers of people with SCZ</td>
<td>Burden reduces over time Burden associated with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shibre et al 2003. Ethiopia</td>
<td>Cross-sectional</td>
<td>301 caregivers of people with SCZ (spouse, parents, siblings, offspring, others)</td>
<td>Burden Coping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terzian et al 2007 Brazil</td>
<td>Comparative cross-sectional</td>
<td>431 adult offspring of parents with SCZ</td>
<td>Social adjustment</td>
<td>Reported mental disorder male (24.8%) versus female offspring (16.5%)</td>
<td>Strong</td>
</tr>
<tr>
<td>Thunyadee et al 2015 Thailand</td>
<td>Cross-sectional</td>
<td>200 caregivers of people with SCZ</td>
<td>Relationships and factors ▶ Caregiver burden ▶ Depressive symptoms ▶ Physical health</td>
<td>Depressive symptoms (19.5%) Perceived poor physical health (65.5%)</td>
<td>Moderate</td>
</tr>
<tr>
<td>Tifessa et al 2017 Ethiopia</td>
<td>Comparative cross-sectional ▶ 292 households with SMD ▶ 284 matched controls</td>
<td>Household food insecurity</td>
<td></td>
<td>Severe household food insecurity (32.5% vs 15.9%)</td>
<td>Strong</td>
</tr>
</tbody>
</table>

Continued
The impact may be more pronounced in low-income countries because the family relationship is more extended, social security is not available and higher level of stigma and discrimination.

Earlier studies focus mainly on schizophrenia and bipolar disorder, while our review includes the impact of severe depression on family members. This review also attempts to assess long-term, diverse impacts across the three specific illnesses and across multiple generations. These are essential inputs to develop family inclusive interventions.

It is of note that about one in five studies (8/39 studies) were rated as weak in global rating. While this constitutes an important limitation of this systematic review, we have presented the data irrespective of the methodological problems and quality. All the included studies had fulfilled the required inclusion criteria. Moreover, six of the eight studies rated weak had at least one strong rating and that all the studies have at least three of the six quality assessment items of the EPHP criteria rated as strong or moderate. Moreover, we consider presenting the results of all studies fulfilling the inclusion criteria along with the quality of the studies will assist the readers to understand the reports and plan for further studies.

The health impact was common across the three specific illnesses, both in high/low-income countries and it is long-term and trans-generational. Psychological distress and physical complaints in family members can be explained by stressful family environment and high demand for care by the people with the illness.

When this comes on top of other personal or economic difficulties, it has been suggested that the combination may result in psychological or physical ill health. However, it is not clear just how serious this can be. For example, the burden get so high as to lead to severe psychological problems such as suicidal behaviour or increased mortality. This has been suggested by Vitaliano et al. who showed how caregiving for Alzheimer’s might even end up in death of the caregiver, an endpoint which might also apply to caring for SMI.
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Aschbrenner et al 2009 USA</td>
<td>Longitudinal Since 1957 19.2 years</td>
<td>145 parents of adult children with BPD control</td>
<td>Physical functioning Mental functioning</td>
<td>Parents of children with BPD versus controls</td>
<td>Strong</td>
</tr>
<tr>
<td>Chessick et al 2009 USA</td>
<td>One year longitudinal</td>
<td>500 caregivers of people with BPD</td>
<td>Physical health Depression</td>
<td>Increased suicidal behaviour in patients result in poor overall health</td>
<td>Strong</td>
</tr>
<tr>
<td>De Andres Garcia et al 2016 Spain</td>
<td>Longitudinal 15 years</td>
<td>41 parents of offspring with SCZ Community control</td>
<td>Acute stress Salivary cortisol IgA</td>
<td>Caregivers with higher NA have</td>
<td>Weak</td>
</tr>
<tr>
<td>Donatelli et al 2010 USA</td>
<td>Longitudinal 7 years and longer</td>
<td>281 children of parents with psychosis 185 controls</td>
<td>Childhood behaviour</td>
<td>No significant difference of childhood behavioural problems at age 4 but more</td>
<td>Moderate</td>
</tr>
<tr>
<td>Elbersgaard et al 2018 Denmark</td>
<td>Longitudinal</td>
<td>Children of 202 people with SSP 120 people with BPD 200 controls</td>
<td>Psychopathology</td>
<td>Lifetime psychiatric diagnoses</td>
<td>Strong</td>
</tr>
<tr>
<td>Gupta et al 2015 France, Germany, Italy, Spain, UK</td>
<td>Comparative study 4 years and longer</td>
<td>398 caregivers of people with SCZ 158 to 989 matched controls 14 to 341 caregivers of other conditions</td>
<td>HRQOL Health utility</td>
<td>Caregivers versus non-caregivers</td>
<td>Strong</td>
</tr>
<tr>
<td>Gutierrez Maldonado, 2005 Chile</td>
<td>Cross-sectional</td>
<td>65 caregivers of people with SCZ 5.6 years Average</td>
<td>Burden score Caregiver general health</td>
<td>Burden score</td>
<td>Weak</td>
</tr>
<tr>
<td>Hanzawa, 2008 Japan</td>
<td>Cross-sectional 1 year and longer</td>
<td>57 mothers of people with SCZ</td>
<td>Burden of caregiving</td>
<td>Burden associated with</td>
<td>Weak</td>
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</table>

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<table>
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<tr>
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<tbody>
<tr>
<td>Henin et al 2005 USA</td>
<td>Comparative cross-sectional</td>
<td>117 offspring of parents with BPD, 171 age and gender matched offspring</td>
<td>Hospitalisation, Placement in special classes, Medication</td>
<td>Offspring of parents with BPD Placed in special classes (OR=3.9), Received counselling (30.9% vs 13.5%), Took medication (18.7% vs 5.3%), Psychiatric hospitalisation (4.1% vs 0.6%)</td>
<td>Strong</td>
</tr>
<tr>
<td>Hsiao, Tsai, 2014 Taiwan</td>
<td>Cross-sectional Average 12.67 years</td>
<td>243 caregivers of people with SCZ</td>
<td>Caregiver burden Satisfaction</td>
<td>Caregivers burden: 24.32%, Satisfaction in caregiving: 57.21%</td>
<td>Weak</td>
</tr>
<tr>
<td>Hsiao, Tsai, 2015. Taiwan</td>
<td>Cross-sectional 14.74 years</td>
<td>137 caregivers of people with SCZ</td>
<td>Caregiver burden Family functioning</td>
<td>Lower burden in siblings than parents, Burden and duration of illness had positive association, Lower family SOC correlated with family hardiness, Unaware of patient suicidality and high family functioning (ES=0.67) and educational level at or above college (ES=0.25),</td>
<td>Moderate</td>
</tr>
<tr>
<td>Jundong et al 2012 Sweden</td>
<td>Birth cohort since 1932</td>
<td>3654 parents with SCZ 1 439 215 controls</td>
<td>School performance 9 years</td>
<td>Influence of parental schizophrenia on offspring School performance (d=−0.31), After controlling covariates (d=−0.18)</td>
<td>Strong</td>
</tr>
<tr>
<td>Mitsonis et al 2012 Greece</td>
<td>Comparative cross-sectional 9 years</td>
<td>87 caregivers of people with SCZ 90 controls</td>
<td>Psychological distress</td>
<td>Higher median symptom score in caregivers than controls (global severity index 0.70 vs 0.34)</td>
<td>Moderate</td>
</tr>
<tr>
<td>Parabiaghi et al 2007 Italy</td>
<td>3 years longitudinal</td>
<td>51 caregivers of people with SCZ</td>
<td>Change in burden Emotional distress</td>
<td>51% emotional distress, Family burden and distress reduce through time, Symptom severity, functioning, Lower QOL Predictors</td>
<td>Moderate</td>
</tr>
<tr>
<td>Perlick et al 2016 USA</td>
<td>Longitudinal 500 caregivers’ people with BPD</td>
<td>Caregiver burden Depression</td>
<td>Baseline, 6 months and 12 months mean CES-D 10.0, 9.5 and 8.7 Caregiver burden score 32.5, 27.4 and 24.4 level of burden at baseline predicted depression scores during the follow-up period (p&lt;0.001). Level of depression at baseline was not associated with burden scores during follow-up (p=0.20)</td>
<td>Strong</td>
<td></td>
</tr>
<tr>
<td>Author (year) and country</td>
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<tr>
<td>Ranning et al 2018 Denmark</td>
<td>Longitudinal</td>
<td>684,248 births between 1986 and 1996  ▶ 3806 offspring of parents with BPD ▶ 3895 offspring of parents with SCZ ▶ Controls</td>
<td>School completion and performance</td>
<td>No graduation ▶ Schizophrenia in mother (OR 2.32 (2.05–2.64)) ▶ Schizophrenia in father (OR 2.53 (2.24–2.86)) ▶ Bipolar in mother (OR 2.53 (2.24–2.86)) ▶ Bipolar in father (OR 1.16 (0.97–1.38))</td>
<td>Strong</td>
</tr>
<tr>
<td>Ritsher et al 2001 USA (10)</td>
<td>▶ Longitudinal study ▶ 17 years</td>
<td>756 families of people with MDD matched with age and sex</td>
<td>Socioeconomic status ▶ MDD</td>
<td>▶ Parent socioeconomic status affects child psychological health ▶ Parent or offspring depression doesn’t affect late socioeconomic status</td>
<td>Strong</td>
</tr>
<tr>
<td>Roick et al 2007 Germany and Britain (10)</td>
<td>Cross-sectional</td>
<td>333 relatives (parents and others) of people with SCZ in Germany and 170 in Britain</td>
<td>Family burden (IEQ-E)</td>
<td>Family burden was associated with ▶ Symptoms ▶ Male gender ▶ Unemployment ▶ Marital status ▶ Coping abilities patient contact British caregivers reported more burden than German IEQ=43.2 in Germany and 46.1 in Britain</td>
<td>Moderate</td>
</tr>
<tr>
<td>Romero et al 2005 USA (13)</td>
<td>Comparative cross-sectional</td>
<td>▶ 24 families with at least one parent with BPD ▶ 27 families without PD</td>
<td>Psychopathology Family environment</td>
<td>BPD families Had lower cohesion (p=0.009) and expressiveness scores (p=0.03) Compared with normative data BPD families reported lower cohesion and higher conflict</td>
<td>Weak</td>
</tr>
<tr>
<td>Sanchez et al 2015 Spain (17)</td>
<td>Longitudinal</td>
<td>▶ 47 children (7–17 years) of people with SCZ ▶ 90 BPD ▶ 107 controls</td>
<td>Psychopathology</td>
<td>Lifetime axis I DSM-IV psychiatric disorder ▶ 58.5% of SCZ offspring ▶ 36.7% of BP offspring ▶ 17.8% of control offspring Schizophrenia and control (AOR=3.96) Bipolar and control (AOR=2.36)</td>
<td>Strong</td>
</tr>
<tr>
<td>Sucksdorff et al 2014 Finland (18)</td>
<td>Nested-case control</td>
<td>▶ 1861 cases with BPD ▶ 3643 matched controls</td>
<td>Psychopathology</td>
<td>▶ AOR=2.79 for any psychiatric diagnosis in mothers ▶ AOR=2.5 BP in father and ▶ AOR=BPD 5.36 in both parents BPD in offspring is associated with parental BPD, SCZ and related psychoses and other affective disorders</td>
<td>Moderate</td>
</tr>
<tr>
<td>Van Wijngaarden et al 2004 Netherlands (11)</td>
<td>Cross-sectional</td>
<td>260 caregivers of people with MDD</td>
<td>Consequence of living with a family member with MDD</td>
<td>▶ Depression (49.6%) ▶ Sleeplessness (53.1%) ▶ Headache (44.2%) ▶ Extreme tiredness (56.2%) ▶ 80% of caregivers reported distress</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Studies with comparison group help us to ascertain the contribution of the illness for such high level of psychopathology among family members. Higher risk for psychological problems can also be attributed to genetic predispositions.

The social-economic impacts include temporary and short-term social and economic problems such as divorce, family cohesion problems and economic costs related to treatment and disability. It may also result in long-term socioeconomic drift, low marriage, less employment and greater food insecurity. This supports the previously established social causation (mental illness causes socioeconomic drift) and social selection (mental illness is common in people with low socioeconomic status) models in both low/high-income countries. However, most of the impacts vary with setting and previous socioeconomic status. So, any intervention should be done based on local longitudinal evidence.

Studies that explore the impacts of parental SMI on children largely focus on psychopathology and show this to be higher in children of parents with SMI than in other children. These problems are attributed both to preventable and unpreventable factors. The preventable factors include poor childcare including failing to fulfil basic needs as well as physical and emotional abuse on children by parents with the illness. Though it is reported by a single article, mortality was also higher in these children. Further studies will be needed to ascertain this mortality report especially in low-income countries where there is high treatment gap for mental illness and economic impacts include temporary and long-term disability.
high child mortality rate.72 73 Problems with children’s schooling and growth were reported in high-income countries while nutritional problems were reported in low-income settings.40–51,53 But as there is a lack of social security system in most LMICs, more studies and intervention programme are needed in children’s schooling and nutrition.

The current family inclusive interventions mostly focused on solving psychological distresses in family members.74–77 But our review shows that the impact is multidimensional which may need designing of multidimensional interventions: economic, school, social and psychological.

STRENGTHS AND LIMITATIONS

The comprehensive nature of this review based on four databases and grey literature with detailed search strategies is the major strength. Limitations include the fact that most of the included reports were from high-income countries, which make it difficult to generalise for the global setting. About one in five studies was also rated methodologically weak.

CONCLUSIONS

The review shows that SMI had multidimensional, long-term and generational impacts on family members. The impact was distributed in grandparents, parents, siblings, offspring and spouses. This was true in schizophrenia, bipolar disorder and major depression. The review indicated a need for longitudinal research in community settings, and different population groups (eg, urban and rural), especially in low-income countries.

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