Table 1. Sample Characteristics

Characteristic	Smoker (n = 194)	Non-smoker (n = 266)	Effect size[a] (95% CI)
Mean age (s.d.)	40.7 (10.7)	39.7 (12.3)	0.08 (−0.10 to 0.27)
Mean onset age (s.d.)	27.5 (8.4)	27.4 (10.8)	0.02 (−0.17 to 0.20)
Sex (female, %)	28.9	59.4	0.28 (0.19 to 0.41)
Mean disease duration (years, s.d.)	13.9 (9.9)	13.1 (10.6)	0.08 (−0.11 to 0.26)
Seclusion (yes, %)	14.9	12.0	1.29 (0.74 to 2.21)
Restraint (yes, %)	4.6	3.0	1.56 (0.58 to 4.30)
Antipsychotic medication at discharge			
Mean chlorpromazine equivalent (mg, s.d.)	639.6 (540.7)	663.8 (618.9)	−0.04 (−0.23 to 0.14)
Number of typical antipsychotic (%)			
0	36.1	43.2	1
1	34.5	30.5	1.36 (0.87 to 2.11)
2	20.1	15.8	1.52 (0.90 to 2.59)
3 or more	9.3	10.5	1.06 (0.54 to 2.05)
Number of atypical antipsychotic (%)			
0	25.8	21.1	1
1	66.0	65.0	0.83 (0.53 to 1.30)
2	8.2	13.9	0.49 (0.24 to 0.97)
Mean GAF score* at discharge (s.d.)	58.1 (14.2)	55.3 (16.1)	0.18 (−0.00 to 0.37)
Mean study length (days, s.d.)	470.2 (334.5)	524.3 (335.6)	−0.16 (−0.35 to 0.02)
Readmission (%)	49.5	34.2	1.88 (1.29 to 2.75)

[a]Effect size refers to standardized mean differences for continuous variables and odds ratios for categorical variables. CI = Confidence Interval.

seclusion, physical restraint, GAF scores, CPZ equivalent, and number of typical and atypical antipsychotics between the groups, non-smoking patients are less likely to be readmitted than smoking patients (hazard ratio = 1.78, 95%CI = 1.31–2.42). Figure 2 shows the predicted survival probabilities for without readmission as a function of the number of days after discharge. A quarter of the smoking group had readmitted within 170 days, whereas a quarter of the non-smoking group had readmitted within 440 days.

DISCUSSION

The present study examined how smoking behavior is related to hospital readmission among patients with schizophrenia. The study found that non-smoking patients with schizophrenia have lower rates of hospital readmission than smoking patients even after controlling variables including gender and the
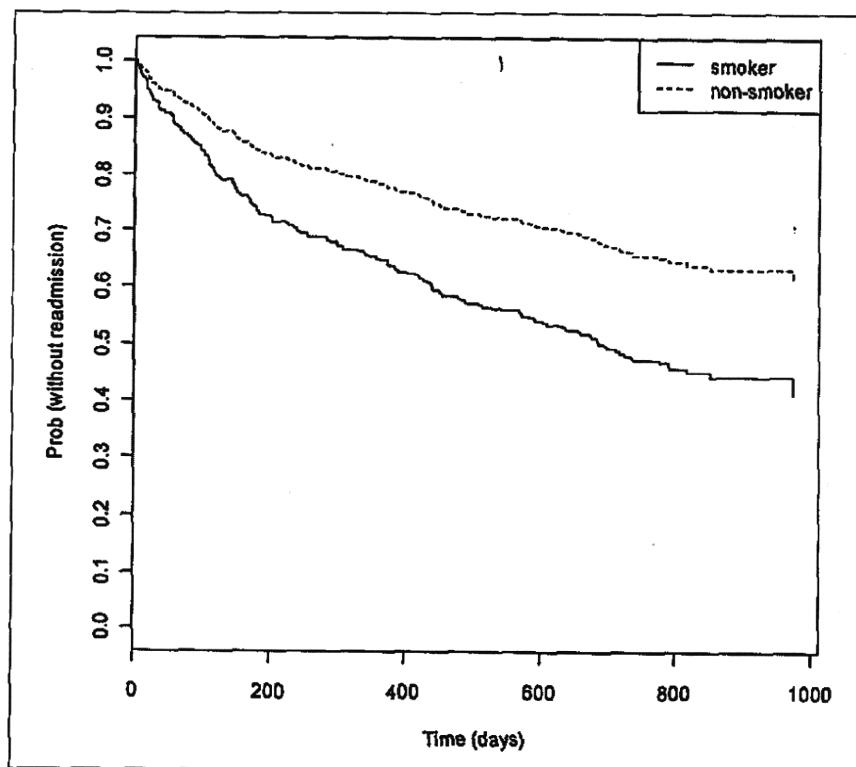
Figure 2. Predicted survival probabilities for without hospital readmission among patients with schizophrenia.

GAF scores. The result is similar to a previous study [20] in which current smokers had a significantly greater number of hospitalizations compared to non-smoking patients. Also, several studies have noted that the rate of hospital readmission increased if patients with schizophrenia have comorbid substance use disorders [21, 22]. Akvardar et al. [21] identified the prevalence of substance use and abuse among a group of schizophrenic patients and the result indicated that the smokers had an earlier onset of illness and increased number of hospitalizations. The other studies also indicate that comorbid substance use disorders present with complications to the effective treatment of the patients [23], and are associated with a wide range of negative outcomes including increased rates of relapse and hospital readmission in patients with schizophrenia [22] and the notion of these studies supports the current study.

Second, the smoking rate of the male patients is 56.1% and the smoking rate of the female patients is 26.2%. This is also consistent with previous studies [24-26] that cigarette smoking is much less common in female patients with schizophrenia than in males. Also, the present study shows that the mean GAF score at discharge among smoking patients is slightly higher than non-smoking patients. To our knowledge, there are no previous studies that assessed the relationships between smoking and the severity of illness with the GAF scale. All previous studies have reported that the disease is more severe in the smoking patients than in the non-smoking patients [27], and positive symptoms and negative symptoms are nearly unchanged with smoking cessation [7, 28]. Thus, it is considered that nicotine itself does not have direct effects to these symptoms [29]. The result of our study is not completely consistent with previous studies. However, recent molecular level's studies have reported that general cognitive function and sensory gating is improved by a neuronal nicotinic acetylcholine receptor (nAChR) agonist drug in the case of the patients with schizophrenia [30, 31]. The result of the present study would be explained if nicotine improves cognitive function. At the present stage, it is clear to see that further investigations are necessary.

There is no doubt that cigarette smoking has harmful effects physically. The current study found that smoking also affects negatively on hospital readmission in individuals with schizophrenia, an important health outcome. To the best of our knowledge, this is the first study which focused on first admitted schizophrenic patients on a voluntarily basis. This could allow us to factor out a bias that the history of previous hospitalization affects hospital readmission.

However, the study had some limitations. This study is a part of a nationwide research project on outcomes of discharged patients with schizophrenia, the contents of questions covered widely and shallowly so that questions regarding cigarette smoking were limited to concurrent smoking status. The present study data did not include daily smoking amounts which could be a potential confounding factor to explain the association between smoking status and readmission. Also, the study focused on first voluntarily admitted patients to avoid

confounding variables as much as possible; however, the generalizability of the results is correspondingly decreased.

CONCLUSION

The present study found that cigarette smoking influences negatively on psychiatric outcomes such as hospital readmission. This finding could be a reason to promote cessation of smoking more strongly among inpatients with schizophrenia. Because of the long history of tobacco use in the psychiatric population, special consideration may be needed to promote smoke-free policies [32].

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WPA guidance on steps, obstacles and mistakes to avoid in the implementation of community mental health care

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This paper provides guidance on the steps, obstacles and mistakes to avoid in the implementation of community mental health care. The document is intended to be of practical use and interest to psychiatrists worldwide regarding the development of community mental health care for adults with mental illness. The main recommendations are presented in relation to: the need for coordinated policies, plans and programmes, the requirement to scale up services for whole populations, the importance of promoting community awareness about mental illness to increase levels of help-seeking, the need to establish effective financial and budgetary provisions to directly support services provided in the community. The paper concludes by setting out a series of lessons learned from the accumulated practice of community mental health care to date worldwide, with a particular focus on the social and governmental measures that are required at the national level, the key steps to take in the organization of the local mental health system, lessons learned by professionals and practitioners, and how to most effectively harness the experience of users, families, and other advocates.

In 2008 the WPA General Assembly approved the Action Plan of the Association for the triennium of the Presidency of Professor Mario Maj. One of the items of the Plan is the production of guidelines on practical issues of interest to psychiatrists worldwide (1,2). The present document, providing guidance on lessons learned and mistakes to avoid in the implementation of community mental health care, is part of that project. In subsequent publications we shall describe in more detail the particular challenges and solutions identified in the various regions worldwide.

Mental health problems are common, with over 25% of people worldwide developing one or more mental disorders at some point in their life (3). They make an important contribution to the global burden of disease, as measured by disability-adjusted life years (DALYs). In 2004, neuropsychiatric disorders accounted for 13.1% of all DALYs worldwide, with unipolar depressive disorder alone contributing 4.3% towards total DALYs. In addition, 2.1% of total deaths worldwide were directly attributed to neuropsychiatric disorders. Suicide contributed a further 1.4% towards all deaths, with 86% of all suicides being committed in low- and middle-income countries (LAMICs) each year (4). A systematic review of psychological autopsy studies reported a median prevalence of mental disorder in suicide completers of 91% (5). Life expectancy is lower in people with mental health problems than in those without (in some countries dramatically so) also due to their higher levels of physical illnesses

(6). Mental health problems, therefore, place a substantial burden on individuals and their families worldwide, both in terms of diminished quality of life and reduced life expectancy. The provision of high-quality mental health care is vital in reducing some of this burden (7).

In this context, the aim of this report is to present guidance on the steps, obstacles and mistakes to be avoided in the implementation of community mental health care, and to make realistic and achievable recommendations for the development and implementation of community-oriented mental health care worldwide over the next ten years. It is intended that this guidance will be of practical use to psychiatrists and other mental health and public health practitioners at all levels, including policy makers, commissioners, funders, non-governmental organizations (NGOs), service users and carers. Although a global approach has been taken, the focus is mainly upon LAMICs, as this is where challenges are most pronounced.

WHAT IS COMMUNITY-ORIENTED MENTAL HEALTH CARE?

There are wide inconsistencies between, and even within, countries in how community-oriented care is defined and interpreted. Historically speaking, in the more economically developed countries, mental health service provision has been divided into three periods (8):

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- The rise of the asylum (from around 1880 to 1955), which was defined by the construction of large asylums that were far removed from the populations they served.
- The decline of the asylum or "deinstitutionalization" (after around 1955), characterized by a rise in community-based mental health services that were closer to the populations they served.
- The reform of mental health services according to an evidence-based approach, balancing and integrating elements of both community and hospital services (8-10).

Within a "balanced care model", most services are provided in community settings close to the populations served, with hospital stays being reduced as far as possible, and usually located in acute wards in general hospitals (11). Differing priorities apply to low, medium and high resource settings:

- In low-resource settings, the focus is on establishing and improving the capacity of primary health care facilities to deliver mental health care, with limited specialist back-up. Most mental health assessment and treatment occurs, if at all, in primary health care settings or in relation to traditional/religious healers. For example, in Ethiopia, most care is provided within the family/close community of neighbours and relatives: only 33% of people with persistent major depressive disorder reach either primary health care or traditional healers (12,13).
- In medium-resource settings, in addition to primary care mental health services, an extra layer of general adult mental health services can be developed as resources allow, in five categories: outpatient/ambulatory clinics; community mental health teams; acute inpatient services; community-based residential care; and work, occupation and rehabilitation services.
- In high-resource countries, in addition to the above-mentioned services, more specialized ones dedicated to specific patient groups and goals may be affordable in the same five categories described for medium-resource settings. These may include, for instance, specialized outpatient and ambulatory clinics, assertive community treatment teams, intensive case management, early intervention teams, crisis resolution teams, crisis housing, community residential care, acute day hospitals, day hospitals, non-medical day centres, recovery/employment/rehabilitation services.

It is this balanced care model approach that has been taken here in considering community-oriented care. In low-resource settings, community-oriented care will be characterized by:

- A focus on population and public health needs.
- Case finding and detection in the community.
- Locally accessible services (i.e., accessible in less than half a day).
- Community participation and decision-making in the planning and provision of mental health care systems.

- Self-help and service user empowerment for individuals and families.
- Mutual assistance and/or peer support of service users.
- Initial treatment by primary care and/or community staff.
- Stepped care options for referral to specialist staff and/or hospital beds if necessary.
- Back-up supervision and support from specialist mental health services.
- Interfaces with NGOs (for instance in relation to rehabilitation).
- Networks at each level, including between different services, the community, and traditional and/or religious healers.

Community-oriented care, therefore, draws on a wide range of practitioners, providers, care and support systems (both professional and non-professional), though particular components may play a larger or lesser role in different settings depending on the local context and the available resources, especially trained staff.

FUNDAMENTAL VALUES AND HUMAN RIGHTS

Underpinning the successful implementation of community-oriented mental health care is a set of principles that relate on the one hand to the value of community and on the other to the importance of self-determination and the rights of people with mental illness as persons and citizens (14,15). Community mental health services emphasize the importance of treating and enabling people to live in the community in a way that maintains their connection with their families, friends, work and community. In this process it acknowledges and supports the person's goals and strengths to further his/her recovery in his/her own community (16).

A fundamental principle supporting these values is the notion of people having equitable access to services in their own locality in the "least restrictive environment". While recognizing the fact that some people are significantly impaired by their illness, a community mental health service seeks to foster the service user's self-determination and his/her participation in processes involving decisions related to his/her treatment. Given the importance of families in providing support and key relationships, their participation (with the permission of the service user) in the processes of assessment, treatment planning and follow-up is also a key value in a community model of service delivery.

Various conventions identify and aim to protect the rights of service users as persons and citizens, including the recently ratified United Nations (UN) Convention on the Rights of Persons with Disability (UNCRPD) (17) and more specific charters such as the UN Principles for the Protection of Persons with Mental Illness and for the Improvement of Mental Care adopted in 1991 (18).

The above-mentioned and other international, regional and national documents specify the right of the person to be

treated without discrimination and on the same basis as other persons; the presumption of legal capacity unless incapacity can be clearly proven; and the need to involve persons with disabilities in policy and service development and in decision-making which directly affects them (18). This report has been written to explicitly align with the requirements of the UNCRPD and associated treaties and conventions.

METHODS USED BY THE WPA TASK FORCE

This guidance has been produced by taking into account the key ethical principles, the relevant evidence, and the combined experience of the authors and their collaborators. In relation to the available evidence, systematic literature searches were undertaken to identify peer-reviewed and grey literature concerning the structure, functioning and effectiveness of community mental health services or obstacles to their implementation. These literature searches were organized for most of the World Health Organization (WHO) Regions, reflecting the context of the report's main authors. There are limitations to this approach, in particular the WHO Eastern Mediterranean Region was not fully represented, and this report focuses upon adult mental health services. Accordingly, this guidance does not address the service needs of people with dementia or intellectual impairment, and of children with mental disorders.

Searches varied according to local expertise and resources. Medline was searched for every region. Other databases searched were EMBASE, PsycINFO, LILACS, SciELO, Web of Knowledge (ISI), WorldCat Dissertations and Theses (OCLC) and OpenSigle. Searches, adapted for each database, were for M.E.S.H. terms and text words relating to community mental health services and severe mental illness.

Other electronic, non-indexed sources, such as the WHO, Pan American Health Organization (PAHO), WPA, other mental health associations, and country-specific Ministry of Health websites, were also searched. Google was searched for PDFs published in European and African countries which contained the words "community mental health". Searches were limited to articles published in the languages spoken by the authors covering each WHO Region, and authors sought relevant advice from WHO Regional Advisors.

Electronic searches were supplemented by searches of the reference lists of all selected articles. Hand searches of issues from the past five years of three key journals relevant to Africa (African Journal of Psychiatry, South African Journal of Psychiatry, and International Psychiatry) were also conducted. In addition, key texts were identified: these included relevant papers and book chapters published by authors of the current work (19-24) and a special edition of the Lancet on Global Mental Health (25-29). WHO publications which provide information regarding community mental health services worldwide were also sourced (7,31-33).

For the Africa Region, original research was conducted in order to supplement published data. Twenty-one regional experts completed a semi-structured, self-report questionnaire concerning their experience in implementing community mental health care in sub-Saharan Africa (34). The experts were from 11 countries and one NGO active in several countries across sub-Saharan Africa.

COMMON ISSUES IDENTIFIED IN IMPLEMENTING COMMUNITY MENTAL HEALTH SERVICES

International and inter-cultural differences can play a significant role in shaping what mental health services are needed and possible within local settings (most particularly, the level of financial resources available (28)). Nevertheless, in preparing this report, we have been surprised to find that the most fundamentally important themes (both in terms of challenges and lessons learned) apply to many countries and regions. We therefore discuss next each of these key themes in turn.

Policies, plans and programmes

One challenge common to many countries worldwide is the difficulty in putting community mental health intentions into practice. We distinguish here between:

- National policy (or provincial or state policy in countries where health policy is set at that level): an overall statement of strategic intent (e.g., over a 5-10 year period) that gives direction to the whole system of mental health care.
- Implementation plan: an operational document setting out the specific steps needed to implement the national policy (e.g., what tasks are to be completed, by whom, by when, with which resources, and identifying the reporting lines, and the incentives and sanctions if tasks are completed or not completed).
- Mental health programmes: specific plans either for a local area (e.g., a region or a district) or for a particular sector (e.g., primary care) that specify how one component of the overall care system should be developed.

According to WHO's Mental Health Atlas (31), 62.1% of countries worldwide had a mental health policy, and 69.6% had a mental health programme in place in 2005 (with 68.3% and 90.9% of the global population covered respectively). Many of the countries without such policies were LAMICs. Even where comprehensive evidence-based mental health policies are in place, problems in implementing these policies are common (33,35). Some of the reasons may include health staff not complying with policies due to difficulties in accepting and implementing changing roles (33), the lack of accessible evidence-based information or guidelines for health staff, inadequate funding mechanisms, inadequate training of health care personnel, the lack of mechanisms for training and coaching health staff, poor supervision and sup-

port, and an overall lack of human resources (35). Detailed and highly practical implementation plans (taking into account available resources) are therefore necessary in enabling effective community mental health care provision.

Scaling up services for whole populations

A further challenge that needs to be addressed worldwide is the massive gap between population needs for mental health care (true prevalence of mental illness) and what is actually provided in mental health care (treated prevalence) (7), highlighting the importance of scaling up services for whole populations. The evidence concerning the substantial burden of mental disorders has not been translated into adequate investments in mental health care (29). The treatment gap is particularly pronounced in LAMICs, where commonly over 75% of people with mental disorders receive no treatment or care at all, and less than 2% of the health budget is spent on mental health (7). Whilst the high-income countries of the world have an average of 10.50 psychiatrists and 32.95 psychiatric nurses per 100,000 population (median figures), in low-income countries there are only 0.05 and 0.16 respectively (31). Furthermore, even within countries, the quality and level of services often vary greatly according to, for instance, patient group, location (with service provision usually being higher in urban areas), or socio-economic factors (3).

Similarly, only 10% of global mental health research is directed to the health needs of the 90% of population living in LAMICs, and only a fraction of this research activity is concerned with implementing and evaluating interventions and services (36). Methods to estimate resource needs are necessary in scaling up services. A systematic methodology for setting priorities in child health research has been developed taking into consideration that interventions should be effective, sustainable and affordable to reduce the burden of disease (37). A similar methodology was applied by the Lancet Global Mental Health Group, which focused on four groups of disorders whilst setting priorities for global mental health research: depressive, anxiety and other common mental disorders; alcohol- and other substance-abuse disorders; child and adolescent mental disorders; and schizophrenia and other psychotic disorders (30). It was recommended that interventions should be delivered by non-mental health professionals within existing routine care settings, and specialists should play a role in capacity building and supervision (38). A comprehensive review of packages of care for six leading neuropsychiatric disorders – attention/deficit hyperactivity disorder (ADHD), alcohol abuse, dementia, depression, epilepsy and schizophrenia – have also recently been proposed as means to extend treatment in LAMICs (20-24). An extensive set of treatment guidelines, also suitable for LAMICs, will be published by the WHO in 2010 as a part of their mhGAP programme. A survey of availability and feasibility of various treatments for the most prevalent mental disorders in the various age groups has been recently carried out by the WPA with its Member Societies (39).

Community awareness about mental illness

A further common barrier in identifying and treating mental disorders worldwide is the lack of awareness about them within communities, with stigma towards, and discrimination against, people with mental health problems being widespread. This is important, because effective awareness-raising campaigns can result in increased presentation of persons with mental illness to primary health care (40).

Three main strategies have been used to reduce public stigma and discrimination: protest, education, and social contact (41). Protest, by stigmatized individuals or members of the public who support them, is often applied against stigmatizing public statements, such as media reports and advertisements. Many protest interventions, for instance against stigmatizing advertisements or soap operas, have successfully suppressed negative public statements and for this purpose they are clearly very useful (42). However, it has been argued (41) that protest is not effective for improving attitudes toward people with mental illness.

Education interventions aim to diminish stigma by replacing myths and negative stereotypes with facts, and have reduced stigmatizing attitudes among members of the public. However, research on educational campaigns suggests that behaviour changes are often not evaluated.

The third strategy is personal social contact with persons with mental illness (43). For example, in a number of interventions in secondary schools, or with the police, education and personal social contact have been combined (44,45). Social contact appears to be the more efficacious part of the intervention. Factors that create an advantageous environment for interpersonal contact and stigma reduction may include equal status among participants, a cooperative interaction, and institutional support for the contact initiative (46).

For both education and contact, the content of programmes against stigma and discrimination matters. Biogenetic models of mental illness are often highlighted because viewing mental illness as a biological, mainly inherited, problem may reduce shame and blame associated with it. Evidence supports this optimistic expectation (i.e., that a biogenetic causal model of mental illness will reduce stigma) in terms of reduced blame. However, focusing on biogenetic factors may increase the perception that people with mental illness are fundamentally different, and thus biogenetic interpretations have been associated with increased social distance (47). Therefore, a message of mental illness as being "genetic" or "neurological" may be overly simplistic and unhelpful for reducing stigma. Indeed, in many LAMICs, conveying a message emphasizing the heritable nature of mental illness fuels stigma, for instance making marriage more difficult.

Anti-stigma initiatives can take place nationally as well as locally. National campaigns often adopt a social marketing

approach, whereas local initiatives usually focus on target groups. An example of a large multifaceted national campaign is *Time to Change* in England (48). It combines mass-media advertising and local initiatives. The latter try to facilitate social contact between members of the general public and mental health service users as well as target specific groups such as medical students and teachers. The programme is evaluated by public surveys assessing knowledge, attitudes and behaviour, and by measuring the amount of experienced discrimination reported by people with mental illness. Similar initiatives in other countries, such as *See Me* in Scotland (49), *Like Minds, Like Mine* in New Zealand (50), or the WPA anti-stigma initiative (51), along with similar programmes in other countries, including Japan, Brazil, Egypt and Nigeria, have reported positive outcomes (40).

In sum, there is evidence for the effectiveness of measures against stigma and against discrimination (52). On a more cautious note, individual discrimination, structural discrimination and self-stigma lead to innumerable mechanisms of stigmatization. If one mechanism of discrimination is blocked or diminished through successful initiatives, other ways to discriminate may emerge (53,54). Therefore, to substantially reduce discrimination, stigmatizing attitudes and behaviours of influential stakeholders need to change fundamentally.

Developing powerful consensus for engagement

The collaborative engagement of a wide variety of supportive stakeholders is critical to successful implementation of community-oriented mental health care. It is important to have a systemic view of the change process. The support is needed of politicians, board members and health managers whose primary focus may not be on mental health, clinicians, key members of the community including NGO providers, service users and their families, and traditional and religious healers. To involve them in the imperative for change will require different strategies and a change management team that includes people with a variety of expertise. Overall, having clear reasons and objectives for the shift to community-oriented care is essential. Messages should be concise, backed by evidence and consistent.

Developing consensus for change requires a lot of work in meeting and communicating with people. The main means of communication need to include written material and opportunities to meet with stakeholder groups. Politicians and administrators will require a compelling business case. However, others will need summaries of plans, slide presentations and the opportunity to meet and work through proposals and concerns. E-mails and website information and surveys are now valuable supplements to the process. The emphasis must be on a willingness to communicate in good faith and to do so openly and honestly doing "what it takes" to convince people of the benefits of the change process.

It is important to bear in mind that in some cases prejudice and self-interest will have to be confronted. It is helpful, at the beginning of the process, to identify both those who are likely to support change, and those who are likely to oppose it. A willingness to listen to concerns and to find ways of incorporating them, if possible, into the planning and implementation process is essential because, when such an attitude is communicated, there is an opportunity for people to feel included in the process. That done, boldness and firmness will communicate to remaining detractors the seriousness of the intent to implement change; it will also encourage supporters to believe that their aspirations for better mental health care will be realized, and thus embolden them in turn.

Engaging stakeholders requires both formal and informal opportunities to meet, receive advice and work through issues. The establishment of reference groups early on in the change process is a key formal mechanism to achieving this. These should include all the key stakeholders, in particular service users, families, clinicians and service providers, with the latter being essential to facilitate integrated systems of care further on in the process. While it is important to structure the overall process with formal meetings and communications, it is also important to be willing to convene informal meetings upon request to "trouble-shoot" situations of concern. The consultation process should result in an amalgam of "bottom-up" and "top-down" contributions to the change process. Reports on progress are an essential way of maintaining trust and building excitement to the process of successful implementation.

It is also important to bear in mind that good mental health services have established processes for ensuring that the voices of service users, their families and community providers are heard on an ongoing basis. The aim is not simply to achieve discontinuous change, but to promote an ongoing quality improvement in which consumers of mental health services know they have a major stake. Without such effective and united consortia, policy makers may find it easy to disregard the different demands of a fragmented mental health sector, and instead respond positively to health domains (e.g., HIV/AIDS) which demonstrate the self-discipline of united approach with a small number of fully agreed priorities.

Mistakes to be avoided

Several key mistakes are commonly made in the process of attempting to implement community mental health care. First, there needs to be a carefully considered sequence of events linking hospital bed closure to community service development. It is important to avoid closing hospital-based services without having successor services already in place to support discharged patients and new referrals, and also to avoid trying to build up community services while leaving hospital care (and budgets) intact. In particular, there needs to be at each stage of a reform process a workable balance between enough (mainly acute) beds and the provision of other parts of the wider system of care that can support people in crisis.

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A second common mistake is to attempt system reform without including *all* the relevant stakeholders. Such initiatives especially need to include psychiatrists, who may otherwise feel subject to "top-down" decision making and react, either in the interests of patients or in their own interests, by attempting to delay or block any such changes. Other vital stakeholders to be directly included in the process will often include policy makers and politicians, health service planners, service users and carers, service providers including those in state and private practice, national and international NGOs, and those working in alternative, complementary, indigenous and religious healing traditions, and relevant national and professional associations. Typically, those groups not fully involved in a reform process will make their views known by seeking to undermine the process.

A further common mistake is linking inappropriately the reform of mental health care with narrow ideological or party political interests. This tends to lead to instability, as a change of government may reverse the policies of their predecessors. Such fault lines of division or fragmentation may also occur, for example, between service reforms proposed by psychologists and psychiatrists, or between socially and biologically oriented psychiatrists, or between clinicians and service user/consumer groups. Whatever the particular points of schism, such conflicts weaken the chance that service reforms will be comprehensive, systemic and sustainable, and they also run the risk that policy makers will refuse to adopt proposals that are not fully endorsed by the whole mental health sector.

Additional issues that may compromize the integrity of community based services include: a) an exclusive focus of community services on psychotic conditions, so that the vast majority of people with mental disorders are neglected or dealt with by professionals who do not have the appropriate expertise; and b) the neglect of patients' physical health.

Payment for services

A fundamental component in the successful implementation of mental health service provision is that of funding (10). As indicated above, funding for mental health services in LAMICs tends to be very low. This may be due in part to a stigmatizing attitude toward mental disorders, and to an absence of the recognition of the economic benefits that can accrue from improved mental health care. Ideally, the share of its health funding that a country devotes to mental health care will be informed by careful consideration of the comparative health benefits of spending on alternative forms of care. The data needed to carry out such an analysis are, however, typically not available in LAMICs.

Furthermore, whatever funding there is also tends to be concentrated on inpatient services. Correcting this is, initially, a matter of budgetary re-allocation: using resources that could have been used for other purposes to increase funding for community-oriented care.

The issue then arises of how to pay public providers (hospitals, stand-alone programs, and possibly independent individual providers such as psychiatrists) for the services that they render. The simplest forms of payment are global budgets for facilities and programs, which may be carried over from year to year with minor adjustments for inflation, and salaries for individual providers. These simple payment mechanisms have the advantage of administrative simplicity. At the same time, they have at least two important drawbacks. First, they provide no incentive for increasing either the quantity or the quality of service provision. Second, population shifts are likely to cause the demand for the services of different providers to evolve and, without taking changes in local demand into account, inequities in payment across providers are likely to emerge and grow over time. This in turn will compromise access to overburdened providers, while possibly resulting in overprovision (e.g., excessive lengths of stay) by other providers. Accordingly, countries with the technical and administrative capacity to introduce more complex payment systems should consider doing so.

For hospitals, a fairly simple alternative which is applicable where care is sectorized is to modulate budgets on the basis of the population of the facility's catchment area. Countries with the technical capacity to do so may wish to adjust the payment level per person on the basis of socio-demographic variables known to be related to the need for inpatient mental health care (for example, poverty).

For hospitals that have overlapping catchment areas, a combination of prospective payment (payment on the basis of number of admissions) and retrospective payment (payment on the basis of bed-days actually provided) may be preferable to exclusive reliance on one or the other. Pure retrospective payment encourages overprovision of services; pure prospective payment, given the difficulty of assessing reliably the degree of need for care of a person admitted for a psychiatric condition, may encourage underprovision.

For stand-alone programs or individual providers, the two main options beyond a fixed budget or a salary are fee-for-service and capitation. Fee-for-service payment encourages a higher volume of services without regard to outcomes. If certain services (e.g., prescription of medications) are paid at a higher rate per unit time than others (e.g., psychotherapy), then fee-for-service payment will also influence the mix of services provided. In addition, fee-for-service payment tends to maximize contacts with patients who are less ill, more compliant, and easier to treat. Difficult or more severely ill patients receive less care unless payments are adjusted by severity – so-called case-mix adjustments. Efficient uses of clinical time such as telephone or computer contacts are ignored because they are not reimbursed.

Capitation payment encourages increasing the number of people served. It may lead to greater accountability for the care of specific patients. In and of itself, however, unless there is competition for patients across providers, it provides no incentive for quality. Furthermore, programmes often fill up to capacity and have difficulty shifting patients to less intensive services.

Countries with the technical and administrative capacity (and political leeway) to do so should consider introducing incentives for increasing quality, either for hospitals, programs, or individual providers. Following Donabedian's seminal work, quality is commonly conceptualized as related to structure, process and outcomes (55). Adjusting payments to hospitals, programs or individual providers on the basis of structure or process indicators (e.g., formal qualifications of staff, achievement of a certain score on a model fidelity scale) assumes that these indicators actually predict quality. To the extent that they do, providing incentives for achieving a high score on those indicators is likely to be beneficial, with a neutral effect on which types of patients the provider will seek to serve. Adjusting payments based on outcomes (for example, physiological indicators of metabolic syndrome, rehospitalisation rates, employment rates) has the advantage of being directly related to a system's ostensible goals. It encourages, however, selection of less ill patients. More research is needed on how to design effective systems for encouraging quality of community-oriented mental health care that are practicable in countries with more or less developed technical and administrative capabilities.

In sum, payment systems influence patient selection, quality and amount of treatments, and outcomes, in more or less favourable ways, and different ones require varying degrees of technical and administrative capacity to be implemented successfully. Determining the optimal system or combination of systems for a particular health care setting probably depends heavily on history, infrastructure, financial resources, human resources, and other factors.

Training staff, human resources and roles of psychiatrists

Human resources are the most critical asset in mental health service provision. The gradual transformation to community-based care has resulted in changes in the ways human resources have been utilized (56). The essential changes have been a reallocation of staff from hospital to community-based service settings, the need for a new set of competencies which include recovery and rehabilitation, and the training of a wider range of workers, including informal community care workers, within the context of the practical needs of a country (57). Further, in many LAMICs, trained psychiatrists work under conditions of heavy and relentless clinical activities, and may not have dedicated time during the week for any service development duties.

Another perspective to human resource development has been the increasing emphasis on integration of mental health into a primary care setting, thereby increasing access to the vast majority of the underserved. This has necessitated the training of general health staff in basic skills in mental health care such as detection of mental disorders, provision of basic care, and referral of complex problems to specialist care. In most developing countries, there is a need for a well-rounded

generalist who is capable of coping with most psychiatric problems with little access to any mental health practitioner. Further important issues are lack of insurance, out of pocket expenses, and the economic burden falling on families.

The broadening scope and the shift to community-based mental health services introduce greater levels of complexity, affecting the role of psychiatrists, broadening it to areas such as promotion and social inclusion. Psychiatrists need to work in more settings, with more staff groups. Planning and management will take a more central place. Psychiatrists are seen to possess a unique expertise, and occupy leading positions in most countries, functioning as advisers to governments and chairing drafting groups that are responsible for the production of policies and action plans. There are countries where such groups comprise only psychiatrists. They have therefore a unique opportunity to shape the process of reform in the best interest of patients, families and carers, the public and staff.

While psychosocial rehabilitation is an important part of the overall process of successful management of chronic mental disorders, its practice is still rare compared to the use of medicines (58). In many developing countries, training is scarce for occupational therapists, psychologists or social workers. In countries with few psychiatrists, numerous medical, administrative and leadership duties leave psychiatrists little time to work with rehabilitation units. Even so, in many LAMICs other resources are available – e.g., strong family and community networks, faith groups, informal employment opportunities – that might be mobilized to support the rehabilitation of people with longer-term mental disorders.

Organization development, quality assurance and service evaluation

Initiation of community mental health care services generally requires strong leadership among stakeholders based on community-oriented care concepts. It is practical to learn from successful models by using basic tools including timetables, assessment forms, job descriptions, and operational policies (9).

Coaching and maintenance activities are needed to make services robust and sustainable. Manualization of operational procedures, reference materials and ongoing supervision are essential. As community-oriented care becomes established in several regions, service components are gradually standardized, and manualized standard care becomes available.

Quality assurance is feasible even in settings with limited resources. Quality monitoring can be incorporated into routine activities by selecting target services, collecting data, and using the results for system problem-solving and future direction. External evaluation takes place at different levels. Local government checks whether service providers meet the requirement of laws or acts, while payers focus on examining the necessity of services provided. Professional peers and consumers also participate in independent evaluation.

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Since the primary purpose of mental health services is to improve outcomes for individuals with mental illness, it is crucial to assess outcomes of treatments and services. Also, the results can be used to justify the use of resources. More research is, therefore, needed to provide the best possible services that would directly link to better outcomes for those in need of care.

RECOMMENDATIONS

Drawing upon the literature reviewed by our WPA Task Force, and by our own accumulated experience, we have recognized a series of commonly occuring challenges and obstacles to implementing a community-oriented system of mental health care. At the same time we have identified related steps and solutions which may work in responding positively and effectively to these barriers (19,27), as set out in Table 1.

We recommend that people interested in planning and implementing systems of mental health care which balance community-based and hospital-based service components give careful consideration to anticipating the challenges identified here, and to learning the lessons from those who have grappled with these issues so far.

Table 1 Obstacles, challenges, lessons learned and solutions in implementing community-oriented mental health care

	Obstacles and challenges	Lessons learned and solutions
Society	Disregard for, or violation of, human rights of people with mental illness	- Oversight by: civil society and service user groups, government inspectorates, international NGOs, professional associations. - Increase population awareness of mental illness and of the rights of people with mental illness and available treatments.
	Stigma and discrimination, reflected in negative attitudes of health staff	- Encourage consumer and family/carer involvement in policy making, medical training, service provision (e.g., board member, consumer provider), service evaluation (consumer satisfaction survey).
	Need to address different models of abnormal behavior	- Traditional and faith-based paradigms need to be amalgamated, blended, or aligned as much as possible with medical paradigms.
Government	Low priority given by government to mental health	- Government task force on mental illness outlines mission as a public health agenda. - Mission can encompass values, goals, structure, development, education, training, and quality assurance for community-oriented mental health system from a public health perspective. - Establish cross-party political support for the national policy and implementation plan. - Effective advocacy on mental health gap, global burden of disease, impact of mental health conditions, cost-effectiveness of interventions, reduced life expectancy. - Use of WHO and other international agencies for advocacy, linking with priority health conditions and funds, positive response to untoward events. - Identifying champions within government who have administrative and financial authority.
	Absent or inappropriate mental health policy	- Advocate for and formulate policy based upon widespread consultation with the full range of stakeholder groups, incorporating a rationalized public health perspective based on population needs, integration of service components. - Consumer involvement in policy making.
	Absent, old or inappropriate mental health legislation	- Create powerful lobby and rationale for mental health law. - Modernize mental health law so that it is relevant to community-oriented care. - Watchdog or inspectorate to oversee proper implementation of mental health law.
	Inadequate financial resources in relation to population level needs	- Help policy makers to be aware of the gap between burden of mental illness and allocated resources, and that effective treatments are available, and affordable. - Advocate for improved mental health expenditure using relevant information, arguments and targets, e.g. global burden of disease, mhGAP unmet needs. - Recruit key political and governance champions to advocate for adequate funding of initiatives.
	Lack of alignment between payment methods and expected services and outcomes	- Design a system that directly relates required service components and financially reimbursable categories of care, e.g., for evidence-based practices. - Provide small financial incentives for valued outcomes. - Create categories of reimbursement consistent with system strategy. - Develop and use key performance indicators. - Reserve transitional cost to reallocate hospital staff to move to community.
	Need to address infrastructure	- Government to plan and finance efficient use of buildings, essential supplies and electronic information systems and other to direct, monitor, and improve the system and outcomes.
	Need to address structure of community-oriented service system	- Design the mental health system from local primary care to regional care to central specialty care and fill in gaps with new resources as funding grows.

Table 1 Obstacles, challenges, lessons learned and solutions in implementing community-oriented mental health care *(continued)*

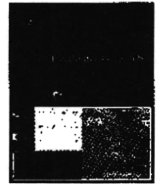|	Obstacles and challenges	Lessons learned and solutions
Government	Inadequate human resources for delivery of mental health care in relation to the level of need in the population	- Assessment of population level needs for primary care and specialist mental health care services. - Build capacity of health workers engaged in providing general health care and mental health care in community. - Training current health and mental health professionals in community-oriented mental health care.
	Brain drain, failure to retain talent, staff retention, and weak career ladders	- UN agencies/international NGOs assure sustainability of their projects/programmes. - Exchange programmes between countries. - Set period of time medical students/registrars have to serve in their countries or rural areas. - Task shifting/function differentiating of psychiatrists to use their ability in their area of speciality. - Create financial incentives and reputation systems for psychiatrists who engage in community mental health. - Train other (less "brain drainable") health professionals to deliver mental health care. - Payment for education may be attached to the allocation and preservation of resources to address equitable distribution and to prevent emigration without appropriate reimbursement.
	Non-sustainable, parallel programmes by international NGOs	- Close relations with ministries and other stakeholders and international NGOs. - Mental health plan in place, so NGOs can help achieve these goals sustainably. - Government to be proactive in collaborating with NGOs and private-public partnership.
Organization of the local mental health system	Need to design, monitor, and adjust organization of mental health system	- This includes plan for local, regional, and central mental health services based on public health need, full integration with primary care, rational allocation of multi-disciplinary workforce, development of information technology, funding, and use of existing facilities. All stakeholder groups can be involved in developing, monitoring, and adjusting plan. - Set implementation plan with clear coordination between services. - Development of policy/implementation plan with number of service needed per population. - Role differentiation of the hospital, community and primary care services, and private and public services, using catchment area/capitation system with flexible funding system. - Prioritization of target groups, especially people with severe and persistent mental illness.
	Lack of a feasible mental health programme or non-implementation of mental health programme	- Make programme highly practical by identifying resources available, tasks to be completed, allocation of responsibilities, timescales, reporting and accountability arrangements, progress monitoring/evaluation systems.
	Need to specify developmental phases	- Planners and professional leaders to design 5 and 10 year plans.
	Poor utilization of existing mental health facilities	- Improve awareness of benefits of facilities and services. - Specify pathways to care. - Inbuilt monitoring quality of care, especially process and outcome phases.
	Need to include non-medical services	- Include families, faith-based social services, NGOs, housing services, vocational services, peer-support services, and self-help services. All stakeholders involved in designing system. - Moving key tasks such as initial assessment and prescribing using a limited and affordable formulary to specially trained staff who are available at the appropriate local level. - Identify leaders to champion and drive the process. - More involvement in planning, policy making and leadership and management.
	Lack of multi-sectoral collaboration, e.g., including traditional healers, housing, criminal justice, or education sectors	- Development of clear policy/implementation plan by all stakeholders. - Collaborate with other local service to identify and help people with mental illness. - Provision of information/training to all practitioners. - Establish multi-sectoral advisory and governance groups. - Familiarization sessions between practitioners in the Western and local traditions.
	Poor availability or erratic supplies of psychotropic medication	- Educate policy makers and funders about the costs/benefits of specific medications. - Provide infrastructure for clozapine monitoring. - Monitoring prescribing patterns of psychotropic medication. - Drug revolving funds, public-private partnerships.
Professionals and practitioners	Need for leadership	- Psychiatrists and other professionals need to be involved as experts in planning, education, research, and overcoming inertia and resistance in the current environment.
	Difficulty sustaining in-service training/ adequate supervision	- Training of the trainers by staff from other regions or countries. - Shifting of some psychiatric functions to trained and available practitioners. - Lobby hard to ensure this is a priority and integral to the mental health plan.

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Table 1 Obstacles, challenges, lessons learned and solutions in implementing community-oriented mental health care *(continued)*

	Obstacles and challenges	Lessons learned and solutions
Professionals and practitioners	High staff turnover and burnout, or low staff morale	- Introduction of recovery oriented services. - Collect case examples of recovery. - Build trust by involving staff leaders in oversight and decision making committees. - Sponsor social events to enable staff to team build in non-work situations. - Emphasize career-long continuing training programmes. - Training of supervisors. - Provide opportunities for attending out of area professional meetings. - Equip with sufficient skills and support.
	Poor quality of care/concern about staff skills	- Ongoing training and supervision. - Create and disseminate guidelines for professionals. - Cultivate psychiatrists' clinical skills, so that they are preserved in spite of the variety of new commitments. - Third party evaluation. - Encourage and reward quality by awards and similar processes.
	Professional resistance, e.g., to community-oriented care and service user involvement	- Government and professional societies promote the importance of community-oriented care and service user involvement. - Task shifting/function differentiating of psychiatrists to use their abilities more broadly in their area of speciality and work with a range of stakeholders including consumers and carers/families. - Develop training in recovery-oriented psychosocial rehabilitation as part of training of new psychiatrists, including at medical schools in LAMICs. - Collect case examples of recovery and successfully implemented community mental health initiatives.
	Dearth of relevant research to inform cost-effective services and lack of data on mental health service evaluation	- More funding on research, for both qualitative and quantitative evidence of successfully implemented examples of community-oriented care.
	Failure to address disparities (e.g., by ethnic, economic groups)	- All key stakeholders involved; advocacy for under-represented groups to develop policies and implementation plans.
Users, families, and other advocates	Need for advocacy	- Users and other advocates may be involved in all aspects of social change, planning, lobbying the government, monitoring the development and functioning of the service system, and improving the service system.
	Need for self-help and peer support services	- Users to lead these movements.
	Need for shared decision making	- Users and other advocates must demand at all levels that the system shift to value the goals of users and families and that shared decision making become the norm. - Continuing professional education on human rights and staff attitudes emphasizing attention to preferences of consumers and carers.

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The effect of an educational leaflet on depressive patients' attitudes toward treatment

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ARTICLE INFO

ABSTRACT

Improving patient adherence to antidepressant treatment is an important issue. Patients' attitudes toward symptoms, results, causes, disease course, and effective treatment of depression can influence their adherence to therapy. We aimed to assess the efficacy of an educational leaflet designed to improve patients' attitudes toward depression and antidepressant treatment. Participants were one hundred twenty-two outpatients of three psychiatric clinics in Japan who met the DSM-IV criteria for depression. Patients in the intervention group received an educational leaflet at the start of the study. Participants filled in The Antidepressant Compliance Questionnaire (ADCQ) and Beck Depression Inventory (BDI) before and after the intervention. Intervention group showed greater improvements on the total score of ADCQ, the score on the "positive beliefs regarding antidepressants" subscale. They maintained the scores on the "perceived doctor–patient relationship" subscale, where the control group lowered those scores. No significant difference in improvement in BDI scores was observed between groups. The intervention using an educational leaflet had a significant positive impact on patients' attitudes toward depression and antidepressant treatment. Our results indicate that the educational leaflet is an effective tool for enhancement of face-to-face education by medical professionals. Trial registration UMIN000002981, www.umin. ac.jp/ctr/index.htm.

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1. Introduction

Adherence to antidepressant treatment is frequently low for patients with depressive disorders (Katon et al., 1992; Myers and Branthwaite, 1992; Simon et al., 1993; Demyttenaere and Haddad, 2000). One study showed that approximately 28% of patients had stopped taking antidepressants during the first month of therapy, and 44% had stopped by the third month of therapy (Lin et al., 1995). Clinical guidelines recommend that antidepressant treatment should be continued for 4–6 months after the acute episode, and continued treatment reduces the risk of relapse (Geddes et al., 2003). Improving patient adherence to antidepressant treatment is an important issue.

Patients' attitudes toward symptoms, results, causes, disease course, and effective treatment of depression influence their perceptions on the costs and benefits of treatment, which subsequently will affect their adherence to therapy (Delgado, 2000). It is important to supply patients with sufficient information to improve their adherence to therapy (Bull et al., 2002).

Even if a doctor believes he has provided a patient with complete information, the patient does not always agree (Bull et al., 2002). Patient education by nurses and pharmacists can be an effective way to supply patients with sufficient information (Vergouwen et al., 2003). However, as these means of communication are costly, they cannot always be provided. A complementary tool, accessible anytime, which provides patients with basic information about depression and antidepressant treatment, is desirable.

A leaflet, which is easily accessible to patients, is a simple method of supplying information. However, the benefit of using it has not been examined fully. One study that examined the effect of leaflets on improvement of depression and actual drug-taking behavior failed to show a positive effect of leaflets (Peveler et al., 1999). We thought that patients' attitudes about treatment may be affected by information contained in a leaflet. If patients are able to have basic information and have a positive attitude toward depression and antidepressant treatment by reading a leaflet, treatment and education would probably be facilitated.

Our hypothesis in this study is that a leaflet is effective in improving the attitudes of patients toward antidepressants and depression. The aim of this study is to examine the effect of a leaflet, which provides information about symptoms, results, causes, disease course, and

effective treatment of depression, on attitudes of patients toward antidepressants and depression.

2. Methods

2.1. Participants

This study was conducted from October 1, 2005 to February 28, 2006. Three private psychiatric clinics agreed to participate in this study. Two of these clinics were in Tokyo and one was in Fukuoka, a regional hub city of the Kyushu district.

We asked participating clinics to recruit all outpatients who met the DSM-IV criteria for major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified. Doctors gave their patients a brief explanation of this study. After that, clerks in charge of this study explained our study to patients and asked for their participation. In each clinic, the clerks alternately allocated patients who agreed to participate to the intervention group or the control group. Doctors did not know whether their patients participated in the study or not, and were not informed about the allocation. The total number of participants was 122; 61 were in the intervention group and 61 were in the control group. Information on the number and characteristics of patients who refused to participate were not available.

The institutional review board of the National Center of Neurology and Psychiatry approved this study. Participants provided written informed consent.

2.2. Intervention

We developed an original leaflet as an intervention tool. The leaflet contained the following information: 1) A checklist of subjective problems associated with depressive disorders or treatment. The list also showed which page to read to obtain information on the problem. 2) Patient education, including a) basic information on depressive disorders, b) triggers for the development of depressive disorders, c) drug therapy for depressive disorders, d) treatment other than drug therapy, e) how to cope with stress in daily life, f) how to prepare to return to work, and g) how to treat a person with a depressive disorder. 3) A checklist for preparing for the next consultation. The checklist included the following topics: symptoms, medication, treatment, daily life, personal relationships, life at school or one's workplace, family, one's personality, thoughts about the future, the past and public aid available. Patients were suggested to organize their concerns regarding these topics and to check whether they were urgent or not. By doing so, they would be able to consult doctors efficiently and communication would be facilitated.

Patients in the intervention group received the leaflet at the start of the study, and patients in the control group received the leaflet after completion of the study.

2.3. Main outcome measures

We used the Antidepressant Compliance Questionnaire (ADCQ) (Demyttenaere et al., 2004), Japanese version (Koyama et al., 2006) to assess patients' attitudes and beliefs about depression and antidepressants. The validity of this scale was confirmed by the co-author of this article (Koyama et al., 2006). This scale consists of 33 items and four subscales. (1) Perceived doctor–patient relationship. This component refers to aspects of the doctor–patient interaction (e.g. "My doctor has explained depression sufficiently to me" and "My doctor takes sufficient time to discuss my emotional problem"). (2) Preserved autonomy. This component refers to the possible effects of antidepressants on the patient's personality (e.g. "Your body can become addicted to antidepressants" and "Antidepressants can alter your personality"). (3) Positive beliefs on antidepressants. This component refers to items that are related to the patient's beliefs on the mechanism of antidepressants and on how to comply with the treatment regimen (e.g. "My emotional problems are solved by the antidepressants" and "If you forget to take the antidepressants on a certain day, it's better to take an additional dose the following day"). (4) Partner agreement. This component refers to the attitude of the partner of the depressed patient towards diagnosis and treatment (e.g. "My partner agrees that antidepressants are a suitable treatment for my condition" and "My partner agrees that depression is the correct diagnosis for my condition") (Demyttenaere et al., 2004). A high ADCQ score represents a positive attitude toward depression and antidepressant treatment. We used the Beck Depression Inventory (BDI) to assess the severity of depression. Both of these scales were self-reported.

2.4. Procedure

We conducted the survey at participants' visits. At visit one, patients filled in the consent form and the ADCQ and BDI. Patients in the intervention group also received the leaflet. At visit three, the patients filled in ADCQ and BDI again. After completing the ADCQ and BDI at visit three, patients in the control group received the leaflet. Clerks in charge of this study distributed and collected these documents. We did not ask them to provide verbal education or endorsement along with the leaflet. Doctors did not have the opportunity to know the reactions of individual patients.

2.5. Statistical analysis

Differences between the intervention and control groups were analyzed on an intention-to-treat basis. Demographic and clinical variables of patients were compared between groups by use of t-test or chi-square test. We conducted repeated measures ANOVAs with ADCQ scores and BDI scores as outcomes, comparing the effect of group (intervention v. control) × time (visit one (baseline) v. visit three (post-intervention)) with treatment duration as a covariate, where group was a between-subject factor and time and treatment duration were within-subject factors. We used SPSS 13.0.1J for Windows (SPSS Inc, Chicago, Ill) for the analysis. The significance level was set at $P < 0.05$.

3. Results

Demographic characteristics of participants are shown in Table 1. No significant differences were observed between groups. All participants completed assessments before and after the intervention (Fig.1).

Table 2 shows the summary of ANOVA. The effect of interaction between group and time were significant in the total score of ADCQ (effect size $\eta^2 = 0.05$), scores on the "perceived doctor–patient relationship" subscale ($\eta^2 = 0.04$) and the "positive beliefs regarding antidepressants" subscale ($\eta^2 = 0.07$), scores on items "My doctor listens properly to what I think about antidepressants" ($\eta^2 = 0.03$) and "Antidepressants make me stronger so I will be able to deal more efficiently with my problems" ($\eta^2 = 0.05$).

There were significant interactions between time and group and treatment duration regarding scores of the "perceived doctor–patient relationship" subscale ($\eta^2 = 0.05$) and the "positive beliefs regarding antidepressants" subscale ($\eta^2 = 0.08$), and the score of the item "My doctor listens properly to what I think about antidepressants" ($\eta^2 = 0.03$). To look closer, we divided patients according to their treatment duration. Since the median of the treatment duration was 25 months, we set the cutoff point at two years. Among patients whose treatment duration were within two years, the intervention group showed greater improvements on the positive beliefs regarding antidepressants subscale score compared with the control group ($F(1,55) = 5.55$, $P < 0.05$). As for scores of the "perceived doctor–patient relationship" subscale and the item "My doctor listens properly to what I think about antidepressants", interactions between time and group failed to reach significance. When patients had gone through treatment for more than two years, the effects of the interaction between time and group were not significant.

Regarding BDI scores, no significant main effects were observed.

4. Discussion

We examined the effect of an educational leaflet about depression on patients' perceptions of depression and antidepressant treatment using the ADCQ, Japanese version. As we mentioned in the Introduction, our hypothesis was that a leaflet was effective in improving the attitudes of patients toward antidepressants and depression. Our analysis showed that improvement in the total ADCQ score was significantly greater in the intervention group than in the control group. In other words, patients' attitudes and beliefs regarding depression and antidepressants became more positive with the receipt of the leaflet.

Improvement in the total ADCQ score was greater in the intervention group than in the control group. The leaflet, which provided information on depression and antidepressant treatment, appeared to lead to positive changes in patients' attitudes toward this disease and treatment of it. Before making the leaflet, we sought information on patients' common concerns and misunderstandings that often lead to non-adherence. In our leaflet, we stressed information dealing with these concerns in the Question and Answer section.

The scores of the subscale "perceived doctor–patient relationship" and the ADCQ item "My doctor listens properly to what I think about antidepressants", which was included in the subscale, showed the same trend. Patients in the intervention group maintained their scores when patients in the control group lowered their scores. This finding may reflect an improvement in the patient's way of consulting with a psychiatrist, based on the knowledge they got from the leaflet (e.g.

Table 1
Demographic characteristics of participants.

		Intervention group (n=61)		Control group (n=61)		Statistical value
		n or mean	% or S.D.	n or mean	% or S.D.	
Age (years)		40.1	10.8	40.0	8.8	t(120)=0.34
Male		42	68.9	42	68.9	$\chi^2(1)=1.00$
Number of months from the initial visit		39.7	45.6	50.8	52.1	t(119)=1.24
GAF[a]		65.6	17.6	67.0	15.5	t(109)=0.44
Education (years)		14.8	2.1	15.3	1.6	t(119)=0.1.71
Occupation	Intelligent professional	19	31.1	21	34.4	$\chi^2(7)=5.11$
	Clerk	19	31.1	14	23.0	
	Sales rep	7	11.5	10	16.4	
	Housewife	4	6.6	2	3.3	
	Student	3	4.9	1	1.6	
	Sales person	1	1.6	3	4.9	
	Manual laborer	0	0.0	1	1.6	
	Other	8	13.1	9	14.8	
Marital status	Married	31	50.8	30	49.2	$\chi^2(4)=2.24$
	Single	25	41.0	27	44.3	
	Divorced	4	6.6	3	4.9	
	Bereaved	1	1.6	0	0.0	
	Other	0	0.0	1	1.6	

No significant difference was found.
[a] The Global Assessment of Functioning.

knowledge on treatment and adverse effects). As a result, the doctor might have been able to offer clear-cut answers which enabled patients to sustain their satisfaction with the relationship. Improvement in the score of the subscale "positive beliefs on antidepressants" was significantly greater in the intervention group than in the control group. On the three scores described above, the effect of intervention showed limitations according to treatment duration. It appears that intervention with educational leaflets is more effective for patients with a shorter history of treatment. When a patient has a long history of treatment, one's experience of treatment might have a greater effect on one's attitude regarding antidepressant therapy than
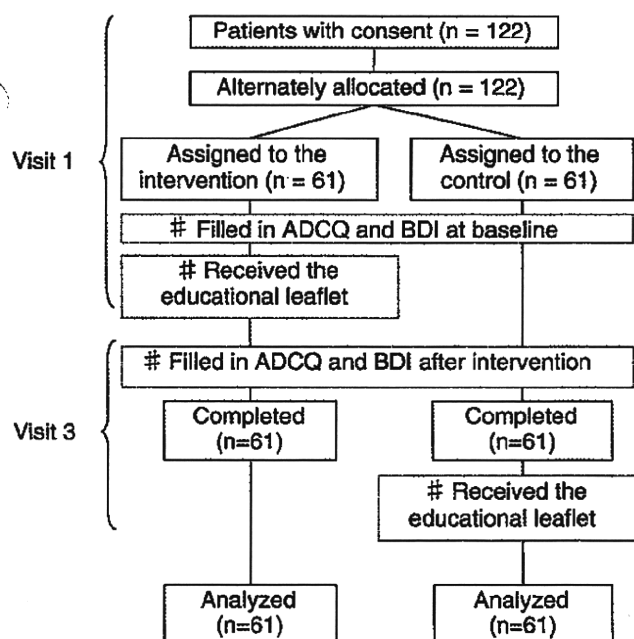

Fig. 1. Participant flowchart. # = Procedure.

external information (i.e., the leaflet). Since this phenomenon was observed only in limited scales, it is difficult to determine the association between the duration of treatment and the overall effectiveness of the leaflet from this result alone. Although part of the leaflet seems to have a stronger effect on patients with a shorter history of treatment, considering the other benefits of using it, we believe that providing information by leaflets has significance for all patients.

Improvement in scores on the item "Antidepressants make me stronger so I will be able to deal more efficiently with my problems" was significantly greater in the intervention group than in the control group. Depression is often attributed to the mentality or personality of the affected person, and many people think medication is not adequate to cope with a mental problem. Such beliefs seem to be related to nonadherence to antidepressant treatment (Jorm et al., 2005), so we stressed the following concepts in the educational leaflet: medication is one of the several effective tools for recovery, and mental problems are similar to physical problems. In our leaflet, we included this message with a bright font: "An antidepressant is similar to a cane for a person with a bone fracture. Until you recover enough to walk by yourself, don't hesitate to accept its help."

This study has some limitations. Since our survey did not include patients' actual adherence to therapy, it was impossible to examine changes in actual drug-taking behavior. Demyttenaere, who developed the Antidepressant Compliance Questionnaire, mentioned their investigation on the predictability of compliance behavior with antidepressants by the scale (Demyttenaere et al., 2004), but the result has not been published yet. Future studies are needed to examine whether positive changes in attitude toward treatment lead to improvement in actual patient adherence to it.

We were not able to obtain the information on the participation rate and characteristics of patients who refused to participate. So we cannot exclude the possibility of our overestimating the effectiveness of the intervention, because our participants could be more willing to take in information than were patients who refused to participate.

We did not employ random allocation, but it did not seem to affect the result because main outcome measures of this study were self-reported.

At present, only three studies that use the Antidepressant Compliance Questionnaire have been published because the scale was developed in 2004. Compared with Danish patients with depressive disorders (Kessing et al., 2005), our subjects showed relatively positive attitudes toward depression and antidepressant treatment. So far, we do not have sufficient external data to determine relatively how positive our subjects were.

Finally, no significant difference in improvement in the BDI score was observed between groups. We do not believe it owed to the statistical power because the effect size of the group was very small ($\eta^2=0.00$). The result was in accordance with previous studies (Vergouwen et al., 2003). In this study, the educational leaflet positively changed patients' attitudes regarding depression and antidepressant treatment. A positive attitude regarding treatment is likely to improve patient adherence to it, which will probably lead to a better prognosis. However, the duration of our research was too short to observe an improvement in depressive symptoms.

In conclusion, the educational leaflet that focused on depressive symptoms and treatment succeeded in changing patients' attitudes positively. The advantage of the leaflet is that it provides basic information in an easily accessible format. With such basic information, patients can consult their doctor and other medical staff about the treatment they are undergoing more efficiently. The leaflet is an effective tool for enhancement of face-to-face education by medical professionals.