A Health Clinic for the Severely Mentally Ill at a Community Mental Health Centre: A Danish Pilot Study

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Abstract

Aim: In this study it was aimed to pilot testing a Danish health clinic in a community mental health centre where patients with severe mental illness (SMI) and increased risk of developing fatal coronary heart disease are offered screening and prevention by a primary care physician and nurse.

Methods: 19 patients (16 with schizophrenia and 3 with affective illnesses) out of a total of 22 fulfilled the inclusion criteria. In all, 15(79%) patients were included in the project, which encompassed four consultations over a 12-week period. At each of the four consultations, lifestyle interventions were performed. A total of 12(63%) patients completed all four consultations. Reasons for dropout were investigated. At the first and last consultation, data were collected in order to assess the risk of developing fatal cardiovascular disease.

Results: All patients attending the health clinic were screened. Among the 12 patients who completed, several known risk factors for the development of fatal cardiovascular disease were reduced, including a reduction in smoking. Other effects were increased physical activity and a healthier diet. Two patients received medical treatment for hypertension and hypercholesterolemia, respectively.

Conclusions: On-site, integrated primary care in a community mental health clinic was associated with improved quality of medical care for SMI patients. It was possible to recruit and retain the patients in a health clinic. There was a positive effect on risk factors for the development of cardiovascular disease, but the results must be interpreted with caution as it is a pilot study.

Keywords: Severe mental illness; Risk of cardiovascular disease; Integrated care

Introduction

In most Western countries, mental health care and somatic health services have been kept separate, which has resulted in the fragmentation of interventions directed at those with a mental illness. A process has been initiated, aimed at transforming the disjointed mental health care service into an integrated effort. Part of this transformative process has led to the development of guidelines for the screening and treatment of physical illnesses in an attempt to integrate medical care into the mental health service [1,2].

Such initiatives are urgently needed since mental health patients with severe mental illness (SMI) have a life expectancy 13 to 30 years lower than that of the general population, and it is cardiovascular disease (CVD), not suicide, which is the leading cause of death [3]. Physical inactivity, an unhealthy diet, smoking and the side effects of psychopharmacological treatment lead to obesity, hyperlipidaemia, hypertension and diabetes, all of which increase the risks of fatal CVD [4]. It has also been shown that mental stress, as a result of increased cortisol, leads to abdominal obesity-one of the most important factors in the development of CVD [5]. Identification and prevention of the risk of CVD will, therefore, be the single most important factor in reducing the excessive mortality of SMI patients [6].

Studies addressing the treatment of the individual risk components for developing CVD show that intensive treatment of each of them can reduce the risk of fatal CVD [7]. The intervention will primarily focus on lifestyle changes, and if that does not suffice, it will be supplemented by medical treatment [8].

As indicated above, the potential for preventing and treating CVD in SMI patients is considerable. But to what extent are the appropriate measures taken in daily practice?

A comprehensive meta-analysis of screening practices has shown that SMI patients are not offered satisfactory screening tests [9].

Naturally, if patients are not screened for risk factors, no interventions will be undertaken, which arguably contributes to the increased mortality rates. But how do patients fare in those cases where one or more risk factors have been identified? Do they receive treatment?

A meta-analysis of 61 studies has shown that patients with severe mental illness are prescribed medications for cardiovascular disease far less frequently than patients without a mental illness [10].

In SMI patients who were diagnosed as being susceptible to one or more risk factors requiring treatment, more than 80% with high cholesterol, 60% with hypertension, and finally 30% with diabetes, went untreated [11].

Health care in Denmark is delivered free of charge, which means that, in principle, everyone has equal access to treatment for physical and mental illnesses. However, a Danish study has shown that compared to the general population only half as many patients with severe mental illnesses are treated with invasive procedures after an acute heart attack [12].

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As indicated above, it often happens that there is no clear assignment of responsibility for detecting and treating risk factors for developing CVD in severely mentally ill patients. Those SMI patients are simply "left in limbo".

Several barriers to help-seeking have been described in the literature. Patients with delusions may find it difficult to get to their GP. Thought disorders and cognitive deficits may hamper patients in describing their health history and current symptoms. Negative symptoms, such as lack of initiative and social withdrawal, may lead to patients failing to keep appointments and follow through with the medical treatment prescribed [13].

In addition to barriers related to the patients' mental illness, many barriers related to the health care service are also described [14]. The bifurcation of somatic and mental health services makes it difficult for SMI patients to find their way in the system, and communication between the mental health services and general practice is inefficient.

At visits to their GP, who is usually responsible for the screening and treatment of risk factors, other problems (social and mental/psychological) absorb so much of these patients' time and energy that they have little left to devote to risk factors for developing lifestyle diseases and thus cardiovascular disease. The mental health sector places no focus on such risk factors and any interventions implemented will often consist in nothing more than a change in antipsychotic medication.

A phenomenon known as "diagnostic overshadowing" may also be the reason for the lower level of interventions received by the mentally ill patient [15]. This phenomenon suggests that doctors or nurses interpret patients' somatic complaints as mental/psychological symptoms, especially if they already know that the patient has a mental diagnosis.

The most common, and often the only, contact patients with SMI have with the health care service is through the mental health care service, which would seem to make it natural for psychiatrists to screen for risk factors, provided an efficient working relationship is put in place between the mental health centre and general practice. For the implementation of interventions that are partly dependent on others following through on them – as in the case of a mental health centre screening and identifying risk factors and then relying on general practice to follow up on the results - places high demands on coordination [16]. Certainly, studies have shown that patients with schizophrenia in contact with general practitioners do not receive the same health checks as patients without mental illness [17].

One way of addressing these deficiencies in screening and treatment would be to introduce a course coordinator (care manager), where nurses from the community mental health centre accompanies patients to their GP and helps them comply with the implemented interventions. A randomized study has shown that an intervention of this kind results in a significant improvement in the prevention of cardiovascular disease. However, the study also showed that only 35% of the patients who needed treatment were in fact treated, and that there was no significant change in the 10-year risk profile compared to the control group [18].

A health clinic located in the community mental health centre, manned by a physician and a nurse, could remove some of the barriers which prevent patients from being screened and treated for CVD.

In the article the following questions are addressed: 1. Is it possible to establish a health clinic in a community mental health centre in Denmark? 2. Is it possible to recruit and retain patients in the health clinic? 3. Do patients attending the health clinic receive optimal screening and treatment of CVD?

Materials and Methods

The health clinic was established in the community mental health centre in Odense. A physician and a consulting nurse were attached to the clinic. The pilot study ran over a 4-month period and the clinic was open on weekdays from 12.00 to 16.00. /or: 12 to 4 pm.

Criteria for participation

Patients of 18 years and above attending the community mental health centre and considered by staff to have one or more risk factors for CVD were invited to participate.

Interventions in the health clinic

Patients were offered four consultations in the health clinic, where they were examined by both the physician and the nurse. At the first consultation, the nurse recorded lifestyle and medication details, measured blood pressure, weighed the patient, measured height and waist circumference, carried out an ECG and took blood tests. Based on the patient's lifestyle, goals were set for desired changes. The physician carried out a somatic examination focusing on the heart, arteries and lungs and assessed the ECG. At the second and third consultations after four and eight weeks, respectively, the nurse and patient talked about lifestyle issues, including whether the desired lifestyle goals had been achieved or needed revising. During the same, consultation the physician assessed the need for the medical treatment of proven risk factors. The nurse's conversation with the patient about lifestyle was based on motivational interviewing [19]. The content of the fourth and final consultation after 12 weeks was identical to that of the first consultation (Table 1). The physician and nurse's work in the health clinic were accompanied by treatment by the psychiatrist in the community mental health centre.

Based on the European Guidelines on CVD Prevention [8], the physician assessed the patient's 10-year risk of fatal CVD. The risk was assessed as low, moderately increased, high or very high. For patients with high total 10-year risk (>5%), established ischemic cardiovascular disease, diabetes type 2 or diabetes type 1 with micro albuminuria or significantly raised levels of a single risk factor (BP>180/110, total cholesterol>8 mmol/l, or LDL cholesterol>6 mmol/l) appropriate medical treatment was started.

The nurse's consultations				
	Week 0	Week 4	Week 8	Week 12
Tobacco	x	x	x	x
Exercise	x	x	x	x
Diet	x	x	x	x
Measurements				
Blood tests	x			
Blood pressure	x	x	x	x
BMI	x	x	x	x
Waist measurement	x			x
ECG	x			x
The physician's consultations				
	Week 0	Week 4	Week 8	Week 12
S.E.*	x			x
Risk factor**	x	x	x	x
*: Somatic examination				
**: Total risk factor evaluation				

Table 1: The consultations of the nurse and physician in the health clinic.

After 12 weeks of contact with the health clinic, the patients were finished and referred to their own GP, who was briefed on the clinical findings and recommended to continue the initiated treatment.

Materials

All staff at the community mental health centre were asked to refer patients to the health clinic during the first month of the study. During the period, 22 randomly selected patients who fulfilled the inclusion criteria were asked whether they would like to participate. A total of 19 patients agreed to participate, 16 (83%) had the diagnosis schizophrenia and the remaining 3 (17%) an affective disorder. There was a predominance of women (67%) and the average age was 41 years (26-64 years).

The reasons for dropout were determined by questioning patients when they withdrew. Patients who completed all four consultations were asked at the final consultation whether they would like to participate in a similar permanent project.

Data on known risk factors for the development of fatal cardiovascular disease were collected at entry into the project and after 12 weeks.

Results

Was it possible to recruit and retain the patients?

A total of 19 out of 22 patients accepted to participate in the project. Four patients did not show up for the inclusion visit. Before the first consultation one patient was admitted to a psychiatric ward. The reasons for the other three patients' dropping out remain unknown. Thus, 15 patients were included (79%) in the project. During the project period, two patients were admitted to psychiatric wards and one patient stayed away for reasons unknown. Thus, 12 (63%) patients participated in all four consultations.

Did the patients in the health clinic receive optimal screening and treatment of CVD?

Table 2 shows the risk factors for developing fatal CVD in the 12 patients who completed all consultations. The typical patient had several risk factors – of which the most frequently occurring were smoking, obesity, unhealthy diet and lack of exercise. One patient was diagnosed with hypertension and one with hypercholesterolemia. The ECG was normal in all patients.

All the patients attending the health clinic were screened for risk factors. The effect of the intervention on selected risk factors for fatal CVD is shown in Table 3. Half of the patients had a significant weight loss.

Changes in cholesterol were uncertain, but an overall trend of reduction in the risk of developing fatal cardiovascular disease was observed.

Blood pressure did not change. In the one patient who had received medical treatment for hypertension, blood pressure was normalized (BP<=140/90). The patient with hypercholesterolemia had normal cholesterol after medical treatment. Exercise habits had changed, as half of the patients reported being more physically active. Dietary habits had changed in favour of a healthier diet. None of the patients stopped smoking but half of them reported a lower consumption of tobacco.

Discussion

The pilot study showed that it was possible to recruit and retain

patients with SMI in a community mental health centre over a period of 12 weeks. The patients in the pilot study had long-standing severe mental disorders. Thus, this group of patients was one where recruitment and retention in a health clinic project might be expected to be particularly difficult. It was surprising, then, that 79% of the patients invited to do so attended the inclusion visit and that 63% completed the course. At the end of the project, all the patients indicated that they would participate in a permanent health clinic.

Of the 22 patients who were offered participation, the 19 (86%) who met for the first consultation were screened for risk factors, which is a significantly higher screening rate than that shown in other studies [9,20].

The 'before and after' measurements of the 12 patients who participated in all the consultations showed that known risk factors for fatal CVD were affected in a positive direction. The patients' 10-year risk factors of fatal CVD were not affected. However, this was not expected, given the pilot project's short duration. A longer-term project would be able to show whether a modified lifestyle and initiated medical treatment could change the 10-year risk of fatal cardiovascular disease.

In this study, we chose to man the health clinic by a physician as well as a nurse, which meant that patients were given a medical examination and necessary medical treatment could be implemented immediately, which happened for two patients. In our pilot study, all the patients were treated if appropriate, and therefore it is likely that a health clinic manned by a physician could reduce the 10-year risk profile.

We have identified a randomized study in which 59 patients assigned to a veteran hospital in the US received preventive interventions in a medical clinic which shared a location with the community mental health centre. The clinic was manned by a physician and nurse who conducted screenings and implemented interventions, if relevant. The study showed that patients assigned to the clinic had a significantly better preventive intervention than a control group of 61 patients who were referred to a GP outside the community mental health centre [21].

However, the results of the study do not extrapolate well to the Danish context. Firstly, it was implemented in a so-called veteran

Patients 10-year risk *	N	%
Low	7	59
Moderately increased	4	33
High	1	8
Very high	0	0
Smoker	10	80
Overweight	10	80
No exercise**	9	72
Unhealthy diet***	9	72
* Background in European guidelines, 2007		
** Not regular exercise		
*** Need for change of diet		

Tabel 2: Risk factors for fatal cardiovascular disease in 12 patients.

	Before	After
Total cholesterol	5.6 (4.4-6.9)	5.2 (4.1-6.8)
HDL	1.2 (0.8-1.8)	1.1 (0.7-1.8)
LDL	3.6 (2.2-5.1)	2.9 (1.0-4.5)
TG	1.9 (0.8-3.2)	1.7 (0.8-2.5)
BMI	33 (23-41)	30 (23-38)

Table 3: Risk factors for fatal cardiovascular disease in 12 mentally vulnerable patients before and after four lifestyle conversations.

hospital which serves only former soldiers. Secondly, all patients who had their own GP were excluded. Finally, only 33% of the patients had the diagnoses of schizophrenia or bipolar disorder.

In Denmark, all patients have their own GP and virtually all the patients in the community mental health centre have one or other of the two diagnoses mentioned.

The pilot study has its limitations in terms of both internal and external validity. The small number of patients makes it difficult to generalize the results and the chosen design with 'before and after' measurements to assess the effect was not optimal. However, the pilot study suggests that the described health clinic example might offer a workable solution to the well-known excess mortality of cardiovascular disease in SMI patients. A larger clinical controlled and randomized trial could show whether this is the case.

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