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Costs and Benefits of Improving Access to Psychotherapies for Common Mental Disorders

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Abstract

Background: Structured psychotherapies are treatments used in common mental health disorders (CMHDs) that are recommended by international good practice guidelines. Their efficacy and positive impact on health – and thereby on the reduction of related costs for health insurance schemes and society – have been widely demonstrated. However in France, despite the considerable financial burden of CMHDs, psychotherapies with a non-medical psychotherapist are not reimbursed by the health insurance schemes.
Aims of the Study: To assess the cost of coverage for psychotherapies by the health insurance bodies for adults aged 18 to 75 with CMHDs – depressive or anxious disorders, severe or recurrent – and to estimate the cost-benefit ratio for these psychotherapies for the community.
Methods: The data was derived from l'*Enquête Indicateurs de santé mentale dans quatre régions françaises 2005*, which is a cross-sectional study on 20,777 adults in the general population. Telephone interviews were backed up by the CIDI-SF. The *Sheehan Disability Scale* was used to assess the severity of the disorders. The proportion of patients who would agree to and then attend psychotherapies was estimated using the methodology developed in the UK in the *Improving Access to Psychological Therapies* programme, adapted to the French setting. The number of sessions to be covered was defined according to recommendations by the *National Institute for Health and Clinical Excellence*. The cost was estimated to be 41€ per session, the reimbursement rate was set at 60% for the compulsory health coverage system. The annual costs engendered by CMHDs were estimated to be 4,702€ for depressive disorders and 1,500€ for anxiety disorders. The remission rate attributable to psychotherapies was estimated to be 30% ±10%.
Results: For average series of 10 sessions (anxiety disorders) to 18 sessions (depressive disorders) the yearly cost of psychotherapies would be 514 million Euros, of which 308 million would be covered by the compulsory coverage system, to treat 1.033 million patients, or 2.3% of the population. For patients with depressive disorders, 1€ spent by the community for the psychotherapy would enable the community a saving of 1.95€ (1.30-2.60), and for anxiety disorders a saving of 1.14€ (0.76-1.52).
Discussion: This programme for provision of coverage for psychotherapies would have a positive impact for the community as a whole, in terms of quality-of-life, health and absenteeism. Funding psychotherapies proves to be a cost-efficient investment in the short and the long term, and this is backed up further by the fact that the impact of psychotherapies on somatic disorders interacting with CMHDs was not taken into account here.
Implications for Health Policies, Health Care Provision and Use: Decision-makers in the health insurance schemes will thus have reliable medico-economic data available to assist in decisions for a possible policy for reimbursement of psychotherapies. Financial coverage of psychotherapies would in particular enable access to treatment by people for whom the financial barrier would have prevented access to this treatment. Furthermore, reimbursing sessions with non-medical psychotherapists could also improve conditions of care-provision by mental health professionals. Finally, this model could be replicated in other countries where the health system is sufficiently comparable to that prevailing in France.
Implications for Future Research: An in-depth study is required to detail cost and benefit of providing insurance coverage for psychotherapies for the different protagonists involved in this funding, and its effects.

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Background

There is agreement across a large body of scientific research on the efficacy of psychotherapies in obtaining the remission of symptoms, and on the persistence of their effects.[1,2] Numerous studies in the economy of medicine conclude to a positive impact of use of psychotherapies on levels of medical consultation, hospitalisation, consumption of medication and sick leave from work.[3-7] This research also shows that financial investment in the funding of psychotherapies is counterbalanced by the subsequent drop in costs for consumption of care and services.[7,8] On the basis

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of this type of scientific data, structured psychotherapies are treatments for common mental health disorders (CMHDs) that are recommended by numerous international,[9-16] and French[17,18] good practice guidelines, and also by recent reports and information campaigns in France.[2,19-23]

Several industrialised countries have developed a policy of reimbursement of psychotherapy sessions, among which the Netherlands, Finland, Sweden, Austria, Germany, Switzerland, and more recently Australia. The number of sessions reimbursed totally or in part varies from one country to another and according to the type of mental disturbance, ranging from 6 to 40 sessions.[24] In the UK, since October 2007, the *National Health Service* has been running a programme entitled *Improving Access to Psychological Therapies* (*IAPT*) which involves complete financial coverage for psychotherapies for patients with CMHDs. The organisation of care complies with the recommendations of the *National Institute for Health and Clinical Excellence* (*NICE*). The number of sessions, the type of professional involved, and the therapeutic method depend on patient symptom profiles and the degree of severity of the disorder.[25-28]

In France, the delivery of mental health services is based on a system implemented in the 1960s.[29] The territorial organization of the system, based on ''sectors'', aims to guarantee easy access for each individual and to promote the development of prevention and community care, but its efficiency has not been optimal. Hospital-based care is predominant (about 45,000 public hospital beds and 10,000 private beds) due to the under-development of other facilities, such as community services. The offer of mental health services also comprises non-hospital residential facilities, such as specialized sheltered housing or ''therapeutic apartments'', and outpatient facilities with Community Mental Health Centres (2,200 spread across the territory) and day-centres, of which there are about one thousand. This mental health service offer seems to meet a large demand: in 2000 for example, 1,151,000 subjects were treated by public health services, for a population of 63 million.[29] In France today, 11,600 psychiatrists work in psychiatric facilities (among these 3,300 are working in private practice only, 2,100 in the public system only, and 6,200 in both), 5,800 clinical psychologists work in public psychiatric facilities and 5,000 work in private practice).[22,29,30] Patterns of public financing of the system reveal that mental health service delivery is mainly based on psychiatry. While psychiatric treatment for patients suffering from severe mental illness or for outpatients is free of charge (i.e. funded by the Social Security), private psychiatric treatment is also partially reimbursed by the public health insurance system, up to 70% (on referral by a family doctor). The mandatory cost of a session is 41€ (including 1€ out-of-pocket cost) for a psychiatrist with ''Sector 1'' activity (these account for 71% of all psychiatrists in private practice).[30] It can be noted that the 92% of the French population that have complementary health coverage are fully reimbursed for these sessions.[31]

In contrast, despite the international recommendations, in France, psychotherapies carried out in private practice with a non-medical psychotherapist will not be reimbursed by the compulsory health insurance scheme, nor by the complementary schemes, with a few very rare exceptions in certain insurance contracts.[30,31] This policy of non-reimbursement of psychotherapies performed by professionals in private practice who are not medical doctors leads to a paradoxical situation in which patients are in fact encouraged to resort to psychiatrists, since the sessions are at least partially reimbursed. Yet psychiatrists are the specialists who are the most costly for society, and also the least numerous (and their number is set to dramatically decrease over the next two decades[29]). The policy likewise encourages the medicalization of care.[32]

Among French adults reporting a CMHD affecting their daily lives in the previous 12 months, between 1.2% (among those suffering from severe and/or chronic CMHDs) and 5% resorted to psychotherapies, with or without psychotropic treatment, and among these from 0.6% to 3% resorted to psychotherapy alone.[33] These individuals with CMHDs on average attend 16 sessions of psychotherapy, although 66% attend fewer than 11 sessions.[33]

France is a country in which consumption of medication for mental health problems is very high[20] with a balance between psychotherapy and pharmacological treatment that is markedly biased towards the latter (1 to 8)[33,34] despite the fact that psychotherapies would be preferred to pharmacological treatment.[32]

Given the very considerable economic burden generated by CMHDs, and interest on the part of the health authorities attested by the French recommendations for psychotherapeutic care in these disorders, we propose a simulation of the cost/benefit ratio of insurance coverage for psychotherapies, based on a large study in the general population, considering the most common disorders and the modes of access to psychotherapies.

To the best of our knowledge, the work[27,35] based on the IAPT Programme is the only similar study that we can draw on; however Wallonia (Belgium)[36] and the ten Canadian provinces[37] are currently implementing this kind of cost-benefit analysis.

Objectives

The present study aimed: (i) to estimate the cost of financial coverage for psychotherapies by the health insurance schemes for adults aged 18 to 75 presenting severe or recurrent CMHDs – depressive or anxiety disorders, and (ii) to estimate the cost-benefit ratio for the community of this type of coverage.

Material and Methods

Survey, Sample and Data Collected

The data is derived from the *Enquête Indicateurs de santé mentale dans quatre régions françaises 2005*. This cross-

sectional survey was performed between April and July 2005 on a random sample in four French administrative Regions (*Ile de France, Haute-Normandie, Lorraine* and *Rhône-Alpes*). The survey was conducted by telephone from a database of 60,000 telephone numbers (landlines and mobile phones). Data was collected from 20,777 individuals (ranging from 5,072 in Haute-Normandie to 5,382 in Ile-de-France). The response rate was 62.7%. Adjustment was made on the probability of selecting an individual, whereby each questionnaire was weighted according to the number of eligible persons in the household. The sample was adjusted on the variables gender, age, professional category, size of the municipality and *département* (administrative sub-division) of residence for each of the four regions.[33] Across the four Regions women accounted for 52% of respondents (**Table 1**).

Resorting to Care for a CMHD

All respondents were asked about recourse to a health professional for a mental health problem in the year preceding the interview in two sections of the questionnaire: at the end of each diagnostic section and in the health service use section (n=6,950). The respondents were questioned on resorting to psychotherapies in their lifetime (n=1,639) and in the previous 12 months (n=479) in the section on health service use (see **Appendix**).

Mental Health Disorders

The *Composite International Diagnostic Interview Short-Form (CIDI-SF)* was used to collect information on mental health disorders according to DSM-IV criteria.[38] In this article CMHDs include the following: Major Depressive Episode (MDE), and anxiety disorders: Generalized Anxiety Disorder (GAD), specific phobia, social phobia, panic disorders – with or without agoraphobia –, obsessive-compulsive disorder, post-traumatic stress disorder.

The *Sheehan Disability Scale* (SDS) measures the functional impact of mental disturbances on four areas of daily life for the sufferer, on a scale ranging from 0 (absence of impact) to 10.[39]

Definition of the Diagnostic Threshold for Severity and Chronicity of the Disorders

This assessment of financial coverage for psychotherapies by the health insurance schemes focuses on providing treatment for individuals experiencing considerable distress on account of their mental health disturbances, and therefore does not take account of individuals with transient disturbances, where remission is likely to occur a few weeks after diagnosis.[8,35,40-47] Nor does it take account of individuals presenting a condition that does not lead to any clear hindrance in their daily lives. Consequently, for this study, individuals were considered eligible for psychotherapy if they had MDE lasting at least 6 months with a score ≥ 4 on the SDS, GAD with a score ≥ 4, or an anxiety disorder with a score ≥ 7.

In order to avoid counting the same individual several times in case of comorbidity, the disorders were hierarchized according to NICE guidelines, which recommend treating comorbid GAD and MDE according to specifications for treatment of MDE.[16] The classification established distinguishes interiorised disorders linked to distress (MDE, GAD) from those linked to fear (anxiety disorders other than GAD),[48] i.e. subjects presenting: (1) pure MDE, (2) comorbidity MDE/GAD, (3) pure GAD, (4) other anxiety disorders (**Table 2**).

Three levels of severity of the disorder were defined from the number of areas of daily life affected by the mental disorder according to the SDS: (i) mild, only one area; (ii) moderate, 2 areas; (iii) severe, 3 or 4 areas.

Estimation of Number and Frequency of Psychotherapy Sessions

Estimation of the number of sessions required in relation to symptom profile and severity of the mental disorder was based on the NICE good clinical practice guidelines.[13-16,49]

The NICE recommendations give ranges for numbers of sessions, and these were converted into exact numbers of sessions ranging from 2 (for mild GAD on its own) to 24 (for severe depression) (**Table 2**).

Estimation of the Proportion of the Population Requiring Care

The estimation of the proportion of the patient population requiring care yearly was based on the methodology of the *IAPT* programme[25-27] which integrated the following factors and hypotheses: (i) the proportion of individuals consulting a health professional for, and actually presenting, a mental health problem, based a) on the hypothesis that not all individuals with a CMHD will consult for that specific reason, and b) the fact that the first access to the care system will tend to favour access to psychotherapy.[50] (ii) the proportions of patients who would accept/refuse psychotherapy,[49] and finally (iii) the hypothesis that healthcare use increases in settings where a health programme is implemented.[25-27] (It can be noted that the current rate of use of psychotherapy among those suffering from severe and/or chronic CMHDs is 1.2%). From these indicators, the *IAPT* programme estimated that 30% of patients consulting a health professional for, and with, a CMHD would agree to, and access, psychotherapy.

This methodology was chosen after checking that the prevalence rates reported by surveys in the UK, on which the estimations are based, and French prevalence rates were comparable. This proved to be the case, since the rates of use of health professionals with and for a CMHD among subjects aged 18 to 65 was 9% in the UK[25-27] and varied across the French administrative Regions considered from 7.7% to 14.3%. The prevalence of recourse to psychotherapies after consultation of a GP for mental health problem was also comparable for the two countries, estimated to be 8% in the UK,[25-27] and between 4% and 10% depending on the French Region.

Table 1. Description of the Sample in the *Enquête Indicateurs de santé mentale dans quatre régions françaises 2005*, for Each Region (N=20,777).

	Île-de-France	Haute-Normandie	Lorraine	Rhône-Alpes	Total	P
	n=5,382 %	n=5,072 %	n=5,109 %	n=5,214 %	n=20,777 %	
Sociodemographic variables						
Gender						0.977
Male	47.7	47.8	48.1	48.1	47.9	
Female	52.3	52.2	51.9	51.9	52.1	
Age group						<0.001
18-34 years	13.4	12.5	11.8	12.3	12.5	
35-49 years	23.0	19.3	19.0	20.1	20.4	
50-64 years	30.1	29.1	29.1	28.8	29.3	
65-74 years	19.4	21.7	21.1	22.2	21.1	
75 years and over	14.1	17.4	19.0	16.7	16.8	
Marital status						<0.001
Single	24.2	17.6	18.2	18.8	19.7	
Married or cohabiting	63.1	70.5	69.2	70.1	68.2	
Divorced, widowed or separated	12.7	11.9	12.6	11.1	12.1	
Education						<0.001
No qualification	9.3	13.7	12.6	10.4	11.5	
<=12 years	54.0	65.8	66.7	61.5	62.0	
>12 years	23.8	10.4	10.0	15.4	14.9	
Employment						<0.001
Working	58.5	54.6	51.8	55.9	55.2	
Unemployed	7.1	5.1	5.0	5.6	5.7	
Student	8.9	7.2	7.3	7.3	7.7	
Retired	17.5	23.1	23.3	22.1	21.5	
Other	8.0	10.1	12.6	9.1	9.9	
Population of place of residence						<0.001
Less than 20,000 inhab.	8.5	46.5	47.2	37.7	34.9	
Between 20,000 and 100,000 inhab.	3.0	17.3	18.8	16.6	13.9	
More than 100,000 inhab.	88.5	36.3	34.0	45.7	51.2	
Clinical variables (12 months)						
CMHD	23.6	21.6	23.0	21.6	22.5	0.082
MDE	9.8	7.1	8.7	7.5	8.3	<0.001
Anxiety disorders	19.4	19.0	19.8	18.8	19.3	0.684

Table 2. Hierarchical Ordering of Disorders and Numbers of Psychotherapy Sessions on the Basis of NICE Good Practice Recommendations, according to Symptom Profile and Severity of the Disorder.

Prioritization		Nature of mental health disorder	Level of severity		
			High	Moderate	Mild
1		Pure MDE	24	20	8
2	Internalizing disorders - distress	Comorbid MDE and GAD	24	20	8
3		Pure GAD	17	13	2
4	Internalizing disorders - fear	Other anxiety disorders*	14	10	7

Data source: 13-16,49.
* Specific phobia, social phobia, panic disorders - with or without agoraphobia - obsessive compulsive disorder and post-traumatic stress disorders.

Reference Population

The reference population comprised French subjects living in metropolitan France or in an overseas *département*, aged 18 to 75 inclusively. The demographic data are based on data for the year 2011,[51] involving 45,355,646 individuals.

Cost Per Session

The cost per psychotherapy session was based on the mandatory cost of a consultation with a 'sector 1' contractual psychiatrist which is 41€.[52] This amount is coherent with French data[22] which show that the total reported cost of a session with a psychiatrist was 40.70€ (CI=1.1; N=150), and with a psychologist 40.30€ (CI=1.8; N=54). The cost does not vary significantly in relation to the type of method implemented (cognitive-behavioural therapy or interpersonal psychotherapy).

Reimbursement Rate

The estimation of the reimbursement rate is based on the reimbursement pattern for a consultation with a medical auxiliary, that is to say 60% for the compulsory health coverage and 40% for the complementary coverage if there is one, and if not for the user.[52]

Breakdown of Costs Generated by CMHDs

An estimate of costs generated by CMHDs is derived from Andlin-Sobocki *et al*.,[53] who estimated the global annual cost per French patient generated by MDE to be 4,702€ and that generated by anxiety disorders overall to be 1,500€. Concerning MDE, the direct costs arising from medical consultations and hospitalisations amounted to 26% of the total amount, and that relating to medication to 9%. Indirect costs corresponding to sick leave and early retirement were estimated at 61%, and those associated with early death at 4%.[54] The breakdown of the expenditure varies according to the type of anxiety disorder[53,55] and consequently costs were estimated on the basis of GAD (direct costs: 33%, indirect costs: 67%). This choice was made for the following reasons: firstly the prevalence of anxiety disorders other than non-comorbid GAD is low, and secondly the breakdown of costs generated by anxiety disorders other than GAD in patient cohorts comparable to that of the present study are virtually inexistent, or else anxiety disorders are grouped into a single symptom category.

Remission Rate Attributable to Psychotherapies

To assess the remission rates attributable to psychotherapies in patient cohorts with CMHDs, we performed a review of the literature selecting articles in which the methods and populations could transpose to our treatment population (**Table 3**). Particular attention was given to meta-analysis reviews, to meta-analyses of RCTs, RCTs, and to prospective studies. The papers reviewed were to study depressive and/or anxiety disorders. The treatment group was to be treated with structured psychotherapy at least, (for instance also maintaining pharmacological treatment for severe cases). The control group was not to be receiving the given treatment, or was to be a "treatment as usual" group. The remission threshold varies from one study to another, depending on symptoms and level of severity of the treatment group, and the measure used. Remission is generally considered to be present if the patient is no longer diagnosed as having a moderate or severe disorder. Assessment during follow-up varies from one study to another, from post-treatment to 24 months. As only four studies[35,42-44,46] estimated a remission rate attributable to psychotherapy (ranging from 18% to 55%), in order to confirm this rate we extended the review of the literature to articles that enabled the rate to be calculated, on the basis of the following criteria: (i) patient remission percentages (ranging from 46% to 77%);[35,40-46,56,57] minus (ii) patient relapse percentages (estimated at 20% +/-5%);[35,43,44,46,56,58] minus (iii) natural remission percentages (estimates ranging from 15% to 73%);[35,40-47] discounting (iv) relapse rates among patients who presented natural remission estimated to be from 40% to 47%.[35,42-44,46] Once this data had been collated, the benefit attributable to psychotherapies was estimated to be 30%, with sensitivity ranging from –10% to +10%.

Data Analysis Procedures

The proportions of individuals consulting any health professional were expressed in absolute numbers and weighted percentages with 95% confidence intervals (CIs). Statistical significance was tested using the Chi-square test; critical p-values were set at 0.05.

Analyses were performed with Stata/IC 11.1 software.

Economic Analyses

The costs avoidable as a result of psychotherapies were calculated as follows: *Costs generated by CMHDs – Costs associated with absence of remission attributable to psychotherapies – Costs invested in psychotherapies*. The cost-benefit ratio of psychotherapy treatment was assessed as follows: *Costs saved by psychotherapies, according to level of remission attributable to psychotherapy / Amounts invested in psychotherapies.*

These methodological aspects are shown in the model presented in **Figure 1**.

Results

Estimation of the Number of Patients to be Treated

Among the respondents aged 18 to 75 years, in the preceding 12 months 31.61% (N=6,498; CI=30.87-32.35) had consulted a health professional for mental health reasons,

Table 3. Review of the Literature Enabling Estimation of the Benefit Attributable to Psychotherapies.

References	Methodology	N	Disorders	Control group	Treated group	Remission threshold	Time of evaluation and follow-up	Therapy remission	Therapy relapse	Natural remission	Relapse following natural remission	Treatment benefit
Lambert and Ogles (2004)[40]	Review of 28 meta-analyses	–	CMHD (predominantly MDE)	Differs according to the RCTs in the 28 meta-analyses	Psychotherapies	Differs according to the RCTs in the 28 meta-analyses	Differs according to the RCTs in the 28 meta-analyses	70%		15%		
Hoyer and Gloster (2009)[56]	Review of meta-analyses	–	GAD	Absence of treatment (waiting list) or treatment as usual	Mainly CBT	Differs according to the RCTs in meta-analyses	6 and 12 months	70% to 80%	20% to 30%			
Churchill, Hunot, Corney *et al.* (2001)[41]	Meta-analysis of 30 studies (out of 63)	886	MDE	Treatment as usual	Brief psychotherapies	Remission when diagnosis was depression absent or mild (several scales used)	Post-treatment	50%		20%		
Casacalenda, Perry and Looper (2002)[42]	Meta-analysis of 6 RCT	883	MDE	Absence of treatment (waiting list)	Cognitive therapies, CBT, interpersonal psychotherapies	Remission when diagnosis was depression absent or mild (*Raskin Depression Rating Scale, Beck Depression Inventory*)	Post-treatment (10 to 34 sessions median = 16) i.e. 2 to 4 /month	46%		25%		22%
Gloaguen, Cottraux, Cucherat *et al.* (1998)[58]	Meta-analysis of 48 studies	2765	MDE	Absence of treatment (waiting list) or placebo (20 studies)	Numerous structured therapy methods	Complete remission when BDI (*Beck Depression Inventory*) <=16: i.e. below mild severity	From 1 to 2 years		12% to 24%			

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(*continued*)

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References	Methodology	N	Disorders	Control group	Treated group	Remission threshold	Time of evaluation and follow-up	Therapy remission	Therapy relapse	Natural remission	Relapse following natural remission	Treatment benefit
Fava, Rafanelli, Grandi *et al.* (1998)[43]	RCT	40	Recurrent MDE (succession of = 3 episodes), including comorbidity with anxiety disorders, withdrawal of antidepressants	Clinical follow-up (withdrawal of antidepressants-	CBT for 20 weeks	Complete remission when no MDE diagnosis (*Paykel Clinical Interview for Depression*)	Final evaluation at 24 months	75%	25%	20%*		55%
Paykel, Scott, Teasdale *et al.* (1999)[44]	RCT	158	Recent depression in partial remission under antidepressants	Maintenance antidepressants	CBT for 20 weeks	Complete remission if score under 8 on BDI (*Beck Depression Inventory*) or score under 9 on HDRS	5, 11 and 17 months	71%	29%	53%	47%	18%
Roemer, Orsillo and Salters-Pedneault (2008)[45]	RCT	31	GAD	Waiting list	CBT for 16 sessions	Remission of moderate or severe disorder on BDI (*Beck Depression Inventory*) and CSR (*Clinical Severity Rating*), with a score of 4 on a 0-8 scale	3 and 9 months	77%		17%		
NHS & IAPT ''Impact Assessment of the expansion of Talking Therapies'' (2011)[35], based on McCrone, Dhanasiri, Patel *et al.* (2008)[46]	Medico-economic report	–	CMHD	–	Psychological care (mainly CBT and interpersonal therapy, counselling)	Remission in absence of moderate or severe diagnosis	Remission at 4 months, relapse at 7,2 months	51%	5%	18%*; 26% to 30%	40%	30%

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(*continued*)

Table 3. Review of the Literature Enabling Estimation of the Benefit Attributable to Psychotherapies.

References	Methodology	N	Disorders	Control group	Treated group	Remission threshold	Time of evaluation and follow-up	Therapy remission	Therapy relapse	Natural remission	Relapse following natural remission	Treatment benefit
Clark, Layard, Smithies *et al.* (2009)[57]	Prospective observational studies performed at 2 pilot sites in the *IAPT* Programme	1868	CMHD	–	Mean 11 CBT sessions per professional for intense therapy	Remission if depression score under 10 on the PHQ-9 (*Patient Health Questionnaire*) (i.e. absence of MDE) or GAD score on GAD-7 under 8 (i.e. absence of moderate or severe disorder)	Post-treatment	55%				
Spijker, de Graaf, Bijl *et al.* (2002)[47]	Prospective study	7076	MDE	–	–	Composite International Diagnostic Interview	3, 6, 12 months			50%; 63%; 73%		

* Without relapse

irrespective of whether they were diagnosed with a mental health disorder. Prevalence ranged from 24.2% in men to 38.6% in women ($p<0.001$), and varied significantly according to the Region.

Among these 31.61% of patients consulting for a mental health problem, 24.0% (N=1,604; CI=22.82-25.21) had a severe or recurrent CMHD (men: 19.6%, women: 26.6% $p<0.001$). Among these, 5.7% presented pure MDE, 2.6% comorbidity MDE/GAD, 4.8% pure GAD and 10.9% another anxiety disorder. Prevalence figures vary according to level of impact of the symptoms of the disorders (**Table 4**). Extrapolated to the population overall, 7.59% of the French general population consult a health professional with and for a severe or recurrent CMHD.

On the basis of the *IAPT* programme methodology, adapted to the French context, whereby it is estimated that 30% of these 7.59% of patients consulting with and for a recurrent or severe CMHD would agree to and access psychotherapy, it can be estimated that finally 2.28% of the French population aged 18 to 75 (1.44% of the men and 3.10% of the women) would be concerned by health coverage for psychotherapies, or 1,032,677 people.

Evaluation of the Number of Sessions Per Person

On the basis of the NICE recommendations, patients would have 12.1 sessions on average – 17.6 sessions for patients presenting MDE and 9.6 for those presenting anxiety disorders. This estimate is coherent with the empirical data produced by Kovess *et al*. (2007).[59]

Estimation of the Costs of Psychotherapy

The total annual cost of psychotherapy (at 41€ per session), would be 498€ per patient (723€ for MDE, 395€ for anxiety disorders). On the basis of a level of reimbursement by the compulsory health insurance schemes at 60%, the cost of psychotherapies for the compulsory coverage schemes would be 299€ (434€ for MDE, 237€ for anxiety disorders). The remaining costs to be covered by the complementary health insurance scheme and/or the patient would be 199€ (289€ for MDE, 158€ for anxiety disorders).

To treat the 1.033 million French people qualifying, the yearly cost of psychotherapies would be 514 million euros (178M € for MDE, 336M € for anxiety disorders), of which 308M € would be covered by the compulsory scheme (**Table 5**).

Estimation of Avoidable Costs and Cost-Benefit Ratio of Psychotherapies

To assess the avoidable costs, and the cost-benefit ratio of psychotherapies for society, 5 steps are involved: (i) The costs generated by mental health disorders in France estimated by Andlin-Sobocki *et al.* (2005)[53] are used as the basis, 4,702€ for pure MDE or comorbid MDE, and for anxiety disorders without comorbid MDE 1,500€. (ii) Costs are applied according to the cost breakdown proposed by Andlin-Sobocki *et al*. 2005[53] and Sobocki *et al.* (2006).[54] (iii) The basis used is provided by the evaluation of the total costs of coverage for psychotherapies, estimated in our study to be 723€ for MDE including comorbidity with anxiety disorders, and 395€ for anxiety disorders without comorbid MDE. (iv) The remission rate attributable to psychotherapy estimated to be 30% +/–10%; (v) costs that can be avoided by psychotherapy for the population to be treated are assessed according to symptom profile. These were estimated to be 1,411€ for MDE (depending on sensitivity levels applied, between 640€ and 1,881€), and for anxiety disorders to be 450€ (depending on sensitivity between 300€ and 600€). **Table 6** provides a sample calculation.

This data enables the estimation of a medical and economic cost-benefit ratio for the community, in terms of cost-benefit ratio for psychotherapy per year and per patient: for patients with MDE, 1€ spent for the psychotherapy as a whole would enable a saving of 1.95€ of direct and indirect costs generated by this disorder (from 1.30€ to 2.60€ depending on sensitivity level). For anxiety disorders, the cost-benefit ratio of psychotherapy is estimated to be 1.14€ (depending on sensitivity level from 0.76€ to 2.60€) (**Table 6**).

Discussion

Limitations

The prevalence rates of CMHDs and the prevalence of use of professionals for CMHDs are here derived from a survey of 20,777 adults across 4 French regions. In order to confirm these prevalence rates, our medico-economic model needs to be replicated using a study in the general population throughout France, such as the recent the *Baromètre Santé INPES 2010*.

The cost per session envisaged here is the same whatever the psychotherapeutic method implemented, the duration of the session, or the type of professional involved. As in the *IAPT* programme, two types of psychotherapy could be envisaged, adapting them to patient symptom profiles, with fairly different costs per session (these vary by 20% in the *IAPT* programme:[46] ''low-level'' psychotherapies with psychological counsellors for the milder disorders, and ''high-level'' psychotherapies for sessions with formal psychotherapists).

The number of sessions to be covered was defined according to recommendations by the NICE guidelines and not according to the French recommendations by the *Haute Autorité de Santé* (HAS), firstly because the NICE guidelines are very detailed, unlike those issued by the HAS. Secondly, it is common for the HAS to use the NICE recommendations for prevention, for dosage of medication, and for medico-economic evaluation studies, including those on mental health.[60-63] However, it can be expected that the HAS will publish its own recommendations, which might differ a little from the NICE guidelines. Finally, it is still possible that patients might attend fewer sessions than envisaged.[49,64] or, as in any other pathology, that any new series of sessions

Selection of population to be treated	
Age	French adults aged to 18 to 75 inclusively (demographic data based on ∼45,356,000 subjects)
Diagnosis	Severe or recurrent CMHDs as assessed by the CIDI-SF and the SDS (Pure MDE>6 months, SDS=4; Pure or comorbid GAD SDS=4; Other anxiety disorders, SDS=7)
Proportion of patients who would agree to and undergo psychotherapy, based on the methodology of the *IAPT Programme*	30% of the population consulting a health professional for and with a CMHD

Proportions and numbers of patients to treat	
Among French people (18-75 yrs): use of any professional for mental health reasons, in the past year	**31.61% (CI=20.9-32.4)**
→ Among these: proportion of patients suffering from severe / chronic disorders	→ **24%** (24% of 31.61% = 7.6%); MDE = 35%; Anxiety disorders = 65%
→ Among these: proportion of patients would accept/ undergo psychotherapy	→**30%** (30% of 7.6% = 2.28%)
Percentage and number of patients to treat, per year	**2.28%** of the French population aged 18 to 75 = **1,033 million**

Estimation of the costs of psychotherapy, per patient, according to symptom profile	
Estimation of the number of sessions required, per patient: based on NICE recommendations according to symptoms and severity of the disorder (See Table 2)	**12.1 sessions** MDE = 17.6; Anxiety disorders = 9.6
Cost per session, based on charges by sector 1 psychiatrist)	**41€**
Level of reimbursement by compulsory health insurance scheme, based on reimbursement rates for medical auxiliaries	**60%**
Estimation of overall cost of psychotherapy	**498€** per patient (12.1 sessions costing 41€ each) MDE=723€; Anxiety disorders= 395€
Costs of psychotherapy for the compulsory health insurance scheme	**299€** (reimbursement at 60% of 498€) MDE = 434€ ; Anxiety disorders = 237€
Costs of psychotherapy for the complementary insurance schemes or for the patients	199€ (40% of 498€)

Yearly costs for psychotherapy	
To treat 1.033M patients	**514M** € (1.033M psychotherapies (or patients) costing 498€ each) MDE = 178M€; Anxiety disorders = 336M€
Cost for compulsory health insurance scheme	**308M€** (reimbursement at 60% of 514M €)
Cost for the complementary insurance schemes or for the patients	206 M€ (40% of 514M €)

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(*continued*)

Estimation of costs avoidable as a result of psychotherapies*	
Costs generated by CMHDs as estimated by Andlin-Sobocki *et al*. (2005)[53]	MDE = **4,702€**; anxiety disorders = **1,500€**
Breakdown of cost and benefit estimations estimated by Andlin-Sobocki *et al*. (2005)[53] and Sobocki *et al.* (2006)[54]	MDE: direct medical costs = 26%; medication = 9%: indirect costs = 65% Anxiety disorders, taking GAD as basis: direct costs = 67%; indirect costs = 33%
Estimation of remission rates attributable to psychotherapy, with sensitivity analysis, based on a review of the literature enabling estimation of the benefit attributable to psychotherapies (See **Table 3**)	**30% +/–10%**
Reminder: Overall cost of psychotherapy	MDE = **723€** Anxiety disorders = **395€**
Costs avoided according to level of remission attributable to psychotherapy, per person*	30% (remission rate, with sensitivity +/- 10%) of costs generated by CMHDs MDE = **1,411€** (940-1,181) Anxiety disorders = **450€** (300-600)
The costs avoidable as a result of psychotherapies, without the costs associated with psychotherapy*	*Costs generated by CMHDs – Costs associated with absence of remission attributable to psychotherapies – Costs invested in psychotherapies* MDE: 688€ (217€ –1,158€) Anxiety disorders: 55€ (–95€ –205€)

Cost-benefit ratio for psychotherapies for the community*	
According to symptom profile (with sensitivity analysis +/–10%)	*Costs saved by psychotherapies, according to level of remission attributable to psychotherapy / Amounts invested in psychotherapies* Depression : 1.95€ (1.30-2.6); Anxiety disorders : 1.14€ (0.76-1.52)

* Several calculation examples are provided in **Table 6**.

Figure 1. Medico-economic Model and Key Results.

might require approval from the Health Insurance advisory medical officer.

The distribution of costs remaining to be covered between complementary schemes and patients was not detailed, on account of the numerous economic models that could be envisaged. Indeed, the reimbursement rates for healthcare vary across the complementary insurance schemes that coverage 92% of the population,[65] and vary according to the packages offered (from 100% to 200% of the basic social security reimbursement depending on the complementary package chosen).

Severity and chronicity thresholds for care in the different disorders could be set lower, for instance so as to provide care for individuals for whom the impact on daily living is less severe, or where MDE duration is under 6 months. It can be hypothesised that in real-life situations, psychotherapy could be offered to patients where chronicity or impact is lower than the thresholds used in this study, following agreement from the advisory physician working for the compulsory health insurance scheme.

Concerning methodological limitations relating to the evaluation of benefit attributable to psychotherapies, the results derived from the literature review exhibit the limitations specific to meta-analyses (heterogeneous study inclusion periods and patient groups, different weighting systems according to sample size),[66] where results vary according to RCT selection methods. The scores for clinical efficacy in RCTs vary according to symptom profiles, the diagnostic scale used, the therapeutic method implemented[41,67] and the moment at which remission or relapse are recorded. The RCTs included in our review mostly studied the benefit of treatment in subjects under 65, while our estimation integrated subjects aged 65 to 75, which could notably reduce the benefit in terms of productivity.

The benefit attributable to psychotherapies was estimated for CMHDs as a whole, without distinguishing the different

Table 4. Prevalence Rates according to Symptom Impact on Daily Life among Patients Consulting for Severe or Recurrent CMHDs (N=1,604).

	High			Moderate			Mild			Total		
	%	CI	N	%	CI	N	%	CI	N	%	CI	N
Pure MDE >6 months, SDS = 4	1.26%	0.99-1.60	88	3.23%	2.77-3.75	221	1.22%	0.96-1.54	87	5.70%	5.10-6.36	396
Comorbid GAD and MDE, SDS = 4	0.35%	0.28-0.63	22	1.29%	1.09-1.49	88	0.96%	0.77-1.15	66	2.60%	2.20 - 3.06	176
Pure GAD, SDS = 4	0.32%	0.26-0.38	22	2.03%	1.76-2.30	141	2.47%	2.03-2.91	167	4.82%	4.28-5.42	330
Other anxiety disorders, SDS = 7	3.25%	2.68-3.82	202	3.10%	2.69-3.51	207	4.53%	3.74-5.32	293	10.88%	10.01-11.83	702
Total	5.18%	4.21-6.15	334	9.65%	8.29-11.01	657	9.18%	7.49-10.87	613	24.00%	22.82-25.21	1,604

pathologies, because four studies out of eleven did not distinguish the different symptom profiles, and also because data on the different anxiety disorders is sparse. To compensate for these limitations, the sensitivity analysis was introduced to take account of these different sources of variation.

Despite these limitations, the study confirms the fact that financial participation in health insurance coverage for psychotherapies would be a cost-effective investment for the community in the short and long term. The case is even stronger in view of the fact that the medical and economic benefits of psychotherapies were estimated in the lowest range. Indeed, (i) costs generated by CMHDs were minimised because they were based on costs that also included mild disturbances, while the costs of psychotherapies concerned severe or recurrent CMHDs. Thus for MDE, costs relating to moderate to severe disorders can be 12% higher in relation to MDE overall[68] and comorbid disorders can cost 60% more than a non-comorbid disorders.[53,55] (ii) In addition, two types of costs that are avoidable as a result of psychotherapies were not included in the calculation – collateral costs generated by somatic disorders interacting with mental disorders, such as cardio-vascular disease, musculoskeletal disorders and diabetes, which all represent a heavy burden,[69,70] and intangible costs such as those associated with the impact on persons close to the patient.[71]

Data on the breakdown of costs show that the larger part (61%) of the costs generated by MDE relates to sick leave and early retirement. Thus for this patient group, the benefit of providing coverage for psychotherapy is particularly worthwhile from the point of view of employers (who are, it should be said, the main funders of the health coverage sector of the social security scheme[72]) via a reduction in absenteeism and in productivity losses.

The existing offer in terms of psychotherapists – clinical psychologists, and psychoanalysts, estimated to be 14,270 equivalent full-time practitioners[22] should be sufficient to provide for the 1.033 million patients requiring treatment. More in-depth study would be worthwhile in order to estimate the number of psychotherapists required to treat patients with CMHDs if the diagnostic threshold is set below that envisaged here, or the number required to treat patients with other mental pathologies.

Finally, more detailed study is required on the cost-benefit ratio of coverage for psychotherapies for the different protagonists involved in this funding (compulsory health schemes, complementary schemes, users, employers) and its consequences and impact (in terms of direct and indirect costs). Further consideration is also needed concerning the proportion of the cost that can be reasonable met by the patient.

Conclusions

In addition to enabling health insurance schemes and the community as a whole to make savings in health costs and improve the quality-of-life of patients and their entourage,

Table 5. Economic Evaluation of Providing Insurance Cover for Psychotherapies, Per Patient and for the Population Requiring Treatment as a Whole.

	Total	MDE including MDE comorbid with anxiety disorders	Anxiety disorders without MDE
Prevalence	2.28%	0.79% (34.61%)	1.49% (65.39%)
Number of eligible individuals	1,032,677	357,408	675,269
Mean number of sessions	12.14	17.63	9.63
Mean cost of psychotherapy per patient:			
Total cost (41€/session)	497.73€	722,83€	394,83€
Cost for compulsory health insurance (60%) (24,60€/session)	298.64€	433.70€	236.90€
Cost remaining to be covered by complementary health insurance and/or patient (16,40€/session)	199.09€	289.13€	157.93€
Cost of providing psychotherapy for the overall population requiring treatment (in thousands of euros)			
Total cost	513,995 k€	252,862 k€	261,133 k€
Cost for the compulsory health insurance scheme (24,60€/session)	308,397 k€	151,717 k€	156,680 k€
Cost remaining to be covered by complementary health insurance and/or patient (16,40€/session)	205,598 k€	101,145 k€	104,453 k€

Table 6. Costs of Psychotherapies Set Against Costs Saved by This Type of Treatment, Per Individual, Symptom Profile and Budget Item.

	MDE including comorbidity with anxiety disorder, including GAD	Anxiety disorders not comorbid with MDE
Total cost of psychotherapy	723€	395€
Estimated financial burden per year for France		
Costs of disorders, per person	4,702€	1,500€
Direct healthcare costs[a]: 26%[b]	1,223€	390€
Medication costs: 9%[b]	423€	
Indirect costs: 65%[b]	3,056€	
Direct costs: 67%[c]		1,005€
Indirect costs: 33%[c]		495€
Costs avoided according to level of remission attributable to psychotherapy, per person		
Estimation with 30% mean remission	[d]1,411€	450€
Direct healthcare costs: 26%[b]	367€	
Medication costs: 9%[b]	127€	
Indirect costs: 65%[b]	[e]917€	
Direct costs: 67%[c]		302€
Indirect costs: 33%[c]		149€
Analysis of sensitivity estimated at +/- 10% of remission rate attributable to psychotherapies		
Estimated at 20% (or -10%)	940€	300€
Direct healthcare costs: 26%[b]	245€	
Medication costs: 9%[b]	85€	
Indirect costs: 65%[b]	611€	
Direct costs: 67%[c]		201€
Indirect costs: 33%[c]		99€

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(*continued*)

Table 6. Costs of Psychotherapies Set Against Costs Saved by This Type of Treatment, Per Individual, Symptom Profile and Budget Item.

	MDE including comorbidity with anxiety disorder, including GAD	Anxiety disorders not comorbid with MDE
Estimated at 40% (or +10%)	[f] 1,881€	600€
Direct healthcare costs: 26%[b]	489€	
Medication costs: 9%[b]	169€	
Indirect costs: 65%[b]	1,223€	
Direct costs: 67%[c]		402€
Indirect costs: 33%[c]		198€
Costs avoidable as a result of psychotherapies (without costs associated with psychotherapy)		
With a level of remission attributable to psychotherapy:		
Estimated at 30%	[g]688€	55€
Estimated at 20% (or –10%)	217€	–95€
Estimated at 40% (or +10%)	[h]1,158€	205€
Cost-benefit ratio		
For 1€ invested in psychotherapy	[i]1.95	1.14
Total cover with sensitivity analysis (+/– 10%)	(1.30; [j]2.60)	(0.76; 1.52)

(a) Hospital consultation
(b) Distribution based on MDE
(c) Distribution based on GAD

Sample calculation:
The following example of the calculation is given for MDE (including comorbidity with anxiety disorder, including GAD):
1a) The direct and indirect costs avoided according to level of remission attributable to psychotherapy were calculated as follows:
1b) With a level of remission attributable to psychotherapy estimated at 30%: 30% of 4,702€ (*Costs generated by CMHDs)* = 1,411€[d]
1c) With the analysis of sensitivity estimated at +10% (or with a level of remission attributable to psychotherapy estimated at 40%): 40% of 4,702€ = 1,881€[f]
1d) The indirect costs avoided, with a level of remission attributable to psychotherapy estimated at 30%; given that the indirect costs associated with MDE have been estimated to be 65% of the costs generated by CMHDs (65% of 4,702€ = 3,056€): 30% of 3,056€=917€[e].
2a) The costs avoidable as a result of psychotherapies (without the costs associated with psychotherapy) were calculated as follows: 4,702€ (*Costs generated by CMHDs)* – 3,291€ (*Costs associated with absence of remission attributable to psychotherapies: given that the level of remission attributable to psychotherapy = 30%; the level of cost generated by CMHDs and not saved by psychotherapy is 70%; 70% of 4,702*€ = 3,291€) – 723€ (*Costs invested in psychotherapies*) = 688€[g]
2b) With the analysis of sensitivity estimated at +10% (or 40%): 4,702€ – (100-40% of 4,702€ = 2,821€) – 723€ = 1,158€[h]
2c) The cost-benefit ratio of psychotherapy treatment was assessed as follows: *Costs saved by psychotherapies, according to level of remission attributable to psychotherapy* (30%) / *Amounts invested in psychotherapies*: 1,411€ (=30% of 4,702€) / 723€ = 1.95[i]
With analysis of sensitivity estimating the *level of remission attributable to psychotherapy* at 40%: 1,881€ (=40% of 4,702€) / 723€ = 2.6[j]

participation in the financial cost of psychotherapies would make it possible to provide care for individuals whom the financial barrier would have prevented from receiving this treatment.[73]

Promoting access to structured psychotherapies would enable a rapid reduction in the use of medication on its own, and thus would foster better-suited care among patients with CMHDs.

Reimbursing sessions with non-medical psychotherapists would enable better allocation of the resources provided by mental health professionals, and relieve waiting lists for psychiatrists.

With a view to providing suitable psychotherapeutic care for patients, inter-professional collaboration between GPs (with their role in referral) and mental health professionals should be promoted, as well as cooperation between psychiatrists and psychologists.

This work will provide decision-makers in the French health insurance schemes with reliable medico-economic data to back up decisions concerning any policies for providing coverage for psychotherapies. In addition, this model can be replicated for other countries where the health system is sufficiently comparable to the French system, such as Francophone Belgium–Wallonia[36] and the Canadian provinces,[37] which are currently examining the costs and benefits of improved access to psychotherapy for people suffering from CMHDs. Furthermore, our objectives (enabling access to treatment for people with low incomes)[11,30,31,74] and recommendations (collaboration between GPs/ psychiatrists/psychotherapists),[9-16,28,36] are liable to concern the majority of industrialised countries, if this is not already the case.[75]

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Appendix

Use of Professionals for a Mental Health Problem

Questions asked in the "diagnosis" section:

''Did you talk to a doctor about feeling down or sad?''.

''Was the doctor you consulted a GP, a psychiatrist, or another sort of doctor?'' (several answers possible).

''And did you talk about it with any of the following: a psychologist, a psychotherapist who was neither a doctor nor a psychologist, a social worker, a nurse, or some other professional person?'' (several answers possible).

Questions Asked in the "Use of Services" Section:

''I am going to list a certain number of professionals of different sorts who may or may not be doctors. Could you tell me whether, in the last 12 months, you approached one or other of them for psychological or psychiatric problems, or for problems concerning drugs and alcohol? (Several responses possible):

– a GP; a psychiatrist; a specialist doctor who is not a psychiatrist for psychological or psychiatric problems or for problems with drugs or alcohol;
– a psychologist, a psychoanalyst; a psychotherapist who was not a psychiatrist, a psychologist or a psychoanalyst; a social worker for psychological or psychiatric problems or for problems with drugs or alcohol;
– a nurse for psychological or psychiatric problems or for problems with drugs or alcohol;
– an alternative medicine specialist who was not a doctor for psychological or psychiatric problems or for problems with drugs or alcohol;
– a priest, a pastor or another religious officer for psychological or psychiatric problems or for problems with drugs or alcohol''.

Use of Psychotherapies

''At any time in your life have you had psychotherapy for psychological or psychiatric problems, or problems with drugs or alcohol?''.

''Have you had psychotherapy in the course of the past 12 months?''.