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The European Consultation-Liaison Workgroup (ECLW) Collaborative Study[1]

I. General Outline

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Abstract: *Previous C-L psychiatric service research is seriously limited by its parochial nature; very few results can be generalized outside of the hospital in which the original study was performed because of differences in the nature of the hospital and the type of C-L service. This article presents the general outline and methodology of a European multicentered C-L service delivery study effected by the European Consultation-Liaison Workgroup for General Hospital Psychiatry and Psychosomatics (ECLW). The study is unique in its kind as it allows the comparison of very different C-L services; for example, some services are run by C-L psychiatrists, others are run by C-L psychosomaticists and the study encompasses a large variety of different settings. As a result, both common factors in C-L service delivery and specific local patterns can be explored. The overall hypothesis tested in this study was that the most developed services would see (as well as more patients) a wider variety of clinical problems than small services. The implication is that the absence of well-developed C-L services in a general hospital may mean that there are patients with unmet mental health needs. In separate articles the training and reliability testing of the new Patient Registration Form (PRF) and the Institutional and Provider characteristics will be described. The former includes the use of ICD-10 in the general hospital setting. This study is a collaborative effort made by 226 consultants from 56 psychiatric C-L services in 11 countries. Each consultant recorded details of 1 year's caseload leading to a thorough description of 14,717 patients collected between 1991 and 1993. The advanced methodology included a multicentered international approach, rigid training for all participating consultants, and the development and testing of new instruments. This will allow us to assess the impact of important structural and process variables on the outcome of C-L service delivery in several European countries. These results will be reported in papers both in the international and national literature of the participating countries.*

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Introduction

Background

This article describes a European Community-funded study to assess the extent and quality of consultation-liaison (C-L) psychiatric services across the European countries. The first aim of the study was to describe the different service delivery patterns with a view to developing minimal standards for C-L services in Europe. The second aim was to test a specific hypothesis relating service delivery pattern to patients seen (see below). The third aim was to collect information that will allow planning of future multisite intervention research projects, by indicating centers with similar services and similar case mix.

Previous studies have been mainly conducted at a single site, which does not allow comparison of the effects of different service patterns on the nature and extent of referrals [1].

The study aimed to highlight the discrepancy between the most and least developed C-L services in Europe, with a view to illustrating the nature and extent of a well-developed service, some of which have proven efficacious in separate experimental projects. It was felt that a more systematic database documenting the state of C-L services across countries should stimulate further service development [2–8].

Initiation of European Collaboration on C-L Health Service Research and the Primary Goals of the ECLW Collaborative Study (Table 1)

The large multicentered standardized study was initiated and organized by the European Consultation/Liaison Workgroup (ECLW) for General Hospital Psychiatry and Psychosomatics [2].[3] The central hypothesis to be tested by this study concerned the relationship between the type and extent of the C-L service and the patients referred; specifically, it was hypothesized that the most developed services would not only see more patients but would also see a wider variety of clinical problems, thereby reaching a much wider range of mental health problems in the general hospital. In order to test such an hypothesis, there were a number of subsidiary objectives that needed to be achieved, most notably designing a standardized patient registration form for each patient and gaining high inter-rater reliability across consultants at different centers.

Table 1. The specific objectives of the ECLW CS study

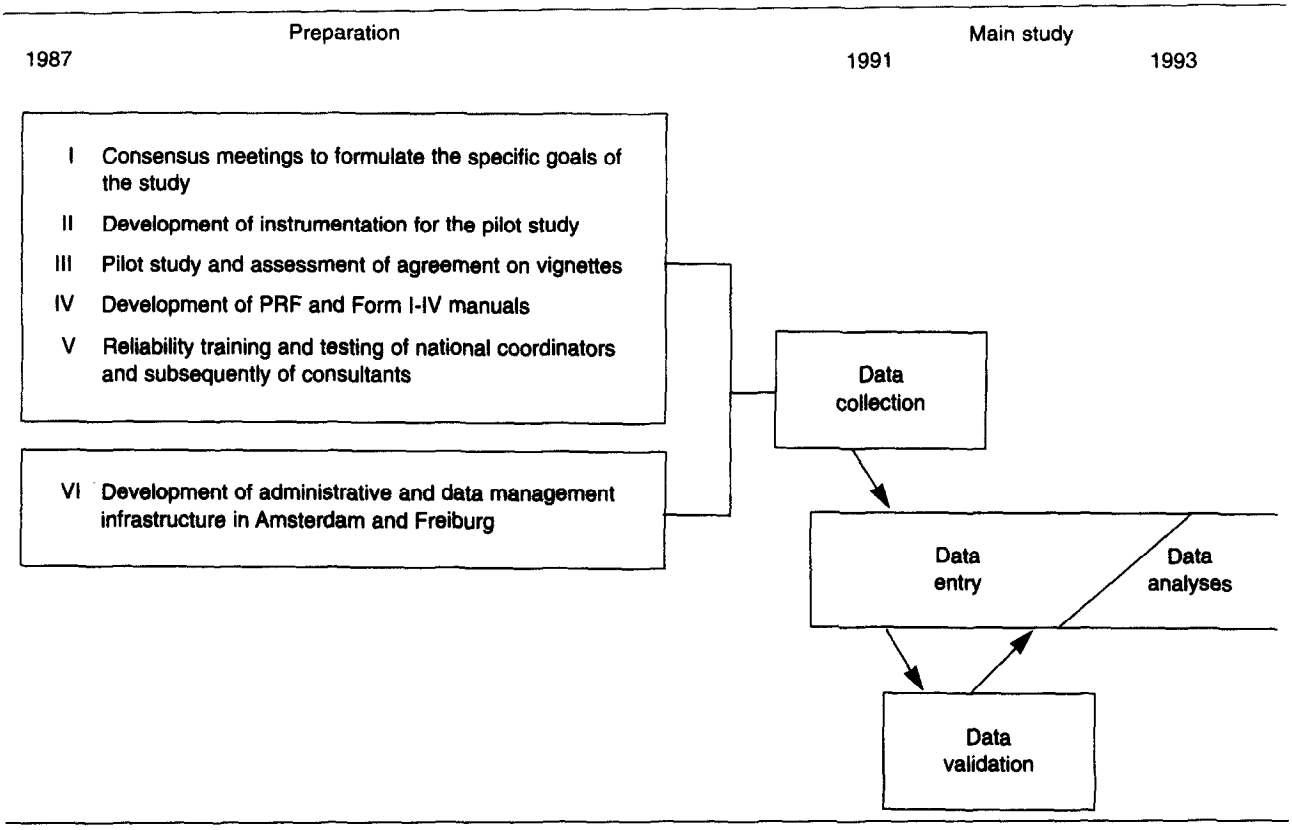
Instruments
Development of reliable and valid instruments for patients, C-L services, the consultants and their hospitals
Patient level
Description of patients referred in relation to referring department
Description of their clinical course and outcome
Identification of high risk groups
Assessment of its relation with consultants characteristics
C-L services level
Assessment of differences in service delivery patterns
Assessment of the relation among the patients referred, the services delivered, and availability and orientation of C-L services
Description of prototypical C-L services regarding structural and functional variables
Estimation of costs of C-L services
National and international level
Assessment of differences in and between countries in types of patients referred and interventions delivered

Goal of the European Funding

The study conforms to the aims of the European Communities' 4th Medical and Health Research Program, section COMAC-Health Service Research [13]. The objectives of the study with respect to this program were to 1) increase the efficiency of the health service research in the general hospital setting through involvement of highly motivated experts in a pan-European coordinated study; 2) improve scientific and technical knowledge of C-L

[3] In the study, both psychiatrists and psychosomatists have participated. Among the last were nonpsychiatrist physicians trained in psychotherapy in the medically ill. For further details, one is referred to pertinent publications [3,9–12]. The vast majority of participants had been psychiatrists. When in this article the term psychiatrists is used, it should be read as both psychiatrist and psychosomatist.

Table 2. Phases of the study



psychiatry, to stimulate programs for quality assurance in C-L services; 3) obtain and coordinate, through the development of standardized instruments and centralized data entry, results from many sites so that large samples may be available in future research projects; and 4) produce benefits in health care more quickly through dissemination of information and results regarding the mental health care of patients in the general hospital.

In this article the methodology, organization, and sampling procedures of the study will be described. Separate articles will report on 1) the structure and reliability of the Patient Registration Form, which was used to document the hospitalization and referral process, the patient characteristics, and the activities of the consultants [14]; 2) the training, reliability, and the validity of the ICD-10 psychiatric diagnostic system applied in the general hospital setting [15–17]; and 3) the structure and administration of instruments used to assess the factors that most influence patient care; that is, the hospital setting, the structure of the C-L service, the availability of other psychosocial C-L services, and the characteristics of the consultants (unpublished data).

Methodology and Organization of the Study

Overview of the Planning and Course of the Study (Table 2)

In 1987, at the time when the ECLW was founded, no European C-L network existed. Representatives of European countries were selected on the basis of pertinent publications and/or recommendation by key C-L figures. By the end of 1988 representatives of 13 interested countries decided to apply for a European grant [13,18,19]. During the process of the application, according to the guidelines of the 4th Medical and Health Research Program, a Program Management Group (PMG) was formed and national coordinators (NC) were appointed. The NCs informed the C-L psychiatrists in their own countries of this initiative and assessed their willingness and capacity to participate according to the specific guidelines issued by the PMG. These guidelines focused on a reasonable geographical national distribution, as well as an appropriate balance between the university and non-university hospitals.

During 1989, a series of consensus meetings was organized to design a Patient Registration Form and a related manual. In the spring of 1990, a pilot study was run at two centers to assess the feasibility of using a detailed patient registration form, which included details of a patient's psychiatric disorder. It resulted in the decision to use the ICD-10 Chapter V as diagnostic system [16] which required some modification for use in C-L [17]. During the course of 1990, trainings for NCs were arranged to increase familiarity with the psychiatric diagnostic system of the ICD-10 Chapter V, and the use of the Patient Registration Form (PRF). This was followed by reliability testing [14,17]. At the same time, the NCs were instructed how to conduct similar training for their national collaborating C-L services. The ECLW Coordination Center (CC) in Amsterdam was established to support the PMG and to develop the organizational infrastructure required for such a multicentered study.

In order to document the details of the C-L services and the settings in which they operated, four special questionnaires were devised which had to be completed by each national coordinator. The development of these questionnaires required three consensus meetings with NCs, field testing, and definition of final format (unpublished data). These instruments were distributed in June 1992 by the Freiburg branch Coordination Center.

Design of the Study

The study is a cross-sectional field study of health services provided by C-L consultants. The inclusion criteria are shown in Table 3. Patients were only included if they were inpatients on general medical wards and were referred to the C-L service. Hospital C-L services were only included if they could offer a commitment to document details of consecutive referrals over a 1-year period with a minimum caseload of 26 cases during the period of study. The C-L services also needed to ensure the training and testing of their consultants to strict reliability criteria and to provide pertinent information concerning 1) the hospital, 2) other relevant services (psychiatric/psychological/psychosomatic) which might influence the referral pattern to the C-L service, 3) the participating C-L services, and 4) the participating consultants.

These stringent inclusion criteria meant only that a few hospitals were included in some countries.

In order to assess the generalizability of the results of this study they will be related to available *national surveys* of C-L services. These are available in Germany, The Netherlands, and the United Kingdom [12,20,21,22].

Datacollection, Cleaning, and Validation Procedure

Instruments (Table 4)

The following section describes the instruments devised for the study. Even though the instruments for the collection of patient and consultant-related data could build on earlier work, the manuals and the related training and testing procedures as well as the instruments for data had to be developed from scratch.

***Patient Registration Form Including ICD-10 Psychiatric Diagnoses* (Tables 4 and 5).** A manual-based comprehensive instrument for the detailed description of each patient referred to the C-L service. This exercise could build on previous work in the United States, the Netherlands, and Germany [5,7,8,12,23]. Intensive consultations in the European group were needed to allow for the inclusion of very different types of service.

As psychiatric diagnoses in medically ill patients presented special problems, the World Health Organization International Classification of Diseases

Table 3. Inclusion criteria

Patient level
Inpatients
Adults (16+)
Provider level
Period of study (1 year)
Minimum caseload (26 cases)
Strict reliability criteria
Provision of institutional and provider background information

Table 4. Overview of the instruments used in the ECLW study

Patient registration form (PRF)
- Admission characteristics
- Referral characteristics
- Sociodemographic variables
- Medical and psychiatric history
- Up to three medical diagnoses (ICD-9)
- Up to three psychiatric diagnoses (ICD-10)
- Clinical state at C-L intake and discharge
- C-L input (time, diagnostic and therapeutic interventions)

Consultant questionnaire (Form IV)
- Sociodemographic variables
- General professional experience, training, status, and theoretical orientation
- C-L related experience, training and attitudes
- Actual job description

Description of C-L-service (Form III)
- Institutional characteristics
- Personnel characteristics
- Types and extent of existing C-L cooperation
- Special services provided
- Availability and organization of services
- Use of documentation and diagnostic systems
- Research

Description of other psychosocial services (Form II)
- Detailed description of other (concurring) psychosocial services

Description of hospital (Form I)
- Type of hospital and owner
- Populations served
- Treatment places and specialties present
- Number of admissions and length of stay
- Way of calculating costs/way of payment
- Patient characteristics (by department)
- Personnel characteristics (by department)

National survey of C-L services
- General hospital characteristics
- C-L service characteristics
- Relevant experiences with C-L
- Documentation and diagnostic system, research

ICD-10 chapter F "Mental Disorders and Behavioral Dysfunction" was adapted and specified for use in the general hospital environment through development of a manual which includes operational definitions [14,17]. Further details of the development, training, and reliability testing of the PRF, including the ICD-10 chapter V, have been described in detail elsewhere [14,17].

The variables included in the PRF are detailed in Tables 4 and 5. The main domains are 1) administrative: to quantify time from admission to referral and duration of liaison consultation; 2) details of the referral itself; 3) sociodemographic details of the patient; 4) health care utilization (both physical and psychiatric) prior to admission; 5) physical and psychiatric diagnosis and measures of severity of illness at the time of consultation; 6) the nature of the intervention resulting from the liaison consultation; and 7) details of the patient at discharge. The PRF included the Reaction Level Scale (RLS), the Global Assessment of Functioning Scale (GAF), and the V-codes of the DSM-IIIR [24,25].

Recruitment, Training, and Testing of Participating Consultants

A standardized procedure for training and testing was developed for the project based on case vignettes to be used for both the PRF and the ICD-10

Table 5. Domains and variables of the patient registration form

- Administrative
  - Date of admission
  - Date of consult request
  - Date of consult
  - Date of last consult
  - Date of discharge
  - Consultant Id
  - Time spent on first consult
  - Number of follow-ups (FU)
  - Average time spent during FU
- Referral data
  - Referring department
  - Patient staying on multiple departments
  - Type of referring service (inpatient, ICU, and so forth)
  - Type of referral (normal ad hoc, contract, and so forth)
  - Timing of referral
  - Urgency
  - Staff consultation
  - Primary reason for referral
  - Additional reasons for referral
- Sociodemographic
  - Sex
  - Age
  - Marital status
  - Present living situation
  - Educational level
  - Type of occupation
  - Employment status
- Health care organization and patient status before admission
  - Psychiatric care last 5 years
  - Physical care last 5 years
  - GAF best and worst last year (DSM-III-R)
  - Motility status best and worst last year
  - MH outpatient treatment status at admission
  - Inpatient treatment status at admission
  - Known at own service
- Health care organization and patient status at first consult
  - Reaction level scale (RLS85) (Starmark et al 1988)
  - GAF
  - Motility status
  - Other psychosocial services involved
- Somatic diagnosis (ICD-9)
  - Somatic diagnosis at first consult
  - Additional somatic diagnoses (two)
  - Etiology
  - Tractus
  - Specific treatment modalities
  - Pregnancy
- Psychiatric diagnosis (ICD-10)
  - Psychiatric disturbance leading to referral
  - Additional psychiatric diagnoses (two)
  - V-codes
- Interventions/management of care as initiated by consultant
  - Diagnostic action
  - Obtain information from external sources
  - Influence level of medical management
  - Medication initiated by consultant
  - Medication changed or stopped by consultant
  - Psychological and behavioral approach
  - Most important target of intervention
  - Written information for the consultee/wardstaff
  - Nonmedical consultations
- Health care organization and patient status at discharge
  - Reaction level scale (RLS85)
  - GAF
  - Motility status
  - Death of patient
  - Influence discharge date
  - Formulation of postdischarge treatment plan
  - Way of communication with postdischarge health care
  - Inpatient health care status after discharge
  - Outpatient MH care arrangements after C-L intervention

classification of psychiatric disorders [14,17]. After the training session, a set of case vignettes was sent to each prospective participant and the reliability of the ratings was compared with a "golden standard." For acceptance as participant in the study, the participant had to reach an overall reliability coefficient of 0.7 or above for the ICD-10 psychiatric diagnosis and the other items of the PRF [14,17]. The national coordinators (NCs) together with the Program Management Group (PMG) provided the

training which required an investment from each consultant of approximately 40 hours, including testing. Where reliability criteria were not met, further training and close case by case supervision by reliable participants was required.

***Institutional and Provider Information* (Table 4).** Four forms were developed as a basis of the comparison between sites. The *description of hospital (Form I)* is a descriptive tool necessary to provide an indication of the base population, i.e., patients in the hospital. For example, large hospitals with many specialized units will include a different population of inpatients than smaller district hospitals and this may influence the nature of C-L referrals. The detailed assessment of *other psychosocial services (Form II)* that might take direct referrals independent of the C-L service was necessary to assess the effect of these services on referral pattern.

The *description of C-L services (Form III)* is essential for the study's main question comparing these service characteristics with number and nature of referrals. A *consultant questionnaire (Form IV)* was designed to compare standards of training questions relating the influence of consultant experience on diagnostic and therapeutic procedures.

It is recognized that, partly depending on the research question, no direct comparison of patients referred to different C-L services should be made without taking into account the effects of these background variables (e.g., size and nature of the hospital, the extent of other psychosocial services, and the type of C-L service itself and the experience of the consultant). In addition, this part of the study provides a reliable "complete" description of all psychosocial services in the general hospital and an estimate of their possible relative contributions to overall MH care.

Administrative and Data Management Infrastructure and Quality Control

The size of the study has required specific facilities for its coordination and data management. Three separate, but linked, software systems have been developed: 1) an administrative management system (hospital, consultant, C-L service, and national coordinator; 2) a patient data management system (PRF); and 3) a data entry system for the background information (Form I-IV).

Administrative Management System. A software package—a database in MS DOS environment—was designed for the administrative and organizational management of the study to disseminate information quickly to all the participating centers and their consultants. This system also documented the pertinent information on all participating consultants, such as reliability testing and its results, and a continuously updated record of the number of patient data returns and their completeness. Incomplete forms were returned and progress chasing was monitored with this administrative system. In this way the Program Management Group had updated information on all consultants—a necessary requirement for the management of such a study.

Patient Data Management System. Earlier American experience in the field of C-L psychiatry with automatized data management systems for medical audit purposes (MICRO-CARES) included the use of an optical mark reader (OMR) [26]. This has resulted in the use of a comparable European OMR system (Kaiser, Germany) with related software (Farrington, The Netherlands) allowing for direct linkage to standard statistical packages, for instance, SPSS and SAS. The OMR scannable PRF was designed and produced in an English and German version.

When PRFs were completed by the consultant and submitted to the Amsterdam Coordination Center, they were visually checked and data were entered using the OMR system. This allowed for quick data entry and rapid feedback, which was first used for individual consultants' reliability. In the main study, this generated data validation reports for the participating centers, ensuring continuous evaluation of the quality of submitted data. These validation reports highlighted missing or incorrect data. When the missing and corrected data were returned on new PRFs, they were added to the existing database. In addition to this first level of data cleaning, an extensive series of checks was performed on the completed data set. This included a second feedback loop to check on data inconsistencies with site coordinators.

Quality Control During the Conduct of the Study. Sixty percent of the PRFs did not have any missing data. For the remaining 40%, missing data reports were generated and returned to the consultants. The missing data were entered onto new forms which were scanned so that the missing data were integrated with the original data set. In this

manner, 3579 missing reports have been included (50% of the 40% missing data reports). This resulted in a mean of 0.96 missing items by PRF of all cases (SD ± 1.76) of which 60% did not have any missing data. After the closure of the database there was a check for logical inconsistencies (e.g., date of referral earlier than date of hospital admission). Problem lists of such inconsistencies were prepared by the coordination centers and dealt with, as necessary, by 41 of the 56 site coordinators. Initially, all data have been entered and saved on an individual C-L service level. In a second phase, all data were merged in a total patient data set.

The hard copies of all OMR forms and on all pertinent communications have been saved in a library ordered on a consultant level for the purpose of easy access.

Institutional and Provider Information (Form I-IV) Management System. These Institutional and Provider data have been entered through an SPSS data entry system and underwent the same validation procedure (a visual check, resulting in a second call for missing information before data entry). Where needed, NCs have been involved with the provision of these data. It became apparent that certain detailed information (e.g., staff sickness absence by unit) was not available in some of the hospitals, reflecting the different patterns of routine data collection across European centers (unpublished data).

The development of these systems has been crucial for the active control of the day-to-day management of the study and the data entry and validation at relatively low costs.

Statistical Considerations

Each specific research question requires its own set of statistical analyses; these will be reported as such in the separate substudies. Here the basic principles of the exploratory approach to the data will be described. The first step with the large data set was to derive meaningful condensed variables which could be used for statistical analysis. For example, some variables were only recorded on a small number of patients and therefore had to be grouped before they could be analyzed (e.g., subcategories of psychiatric diagnoses and departments such as hematology). This first step allowed any consultant in the study to have access to the data. This is available in the form of several code books with a clear description of the variables, which may be subjected to statistical analysis. The cleaning of the hospital data has followed a similar pattern. Consequently, by the fall of 1994, two data sets had been distributed—one for participating C-L centers and a national hospital data set for national coordinators.

In order to structure the hierarchy of the analyses, the framework of quality assurance research has been used: structural, process, and outcome quality. These have been applied to the organization of the data structure, i.e., the patient and the providers [19]. According to these distinctions the following classification of analyses appears.

The Patient Case Level. 1) The *structural* variables include referring department, reason for referral (liaison or contract consultations); *sociodemographic* variables include psychiatric and somatic diagnoses. 2) The *process* level indicates such characteristics as the time between hospital admission and referral to C-L service and the time between referral being received and the patient being seen by the C-L consultant; it also includes diagnostic and therapeutic actions of the consultant. 3) The *outcome* level includes length of stay, changes in mental and physical state, and postdischarge arrangements.

The Provider and Institutional Level. These data reflect a *structural* level, influencing the process and the outcome of the patient referral and C-L service delivery and a *process* level that includes certain consultant characteristics. In addition to this classification the statistical analyses need to take into account the multicentered and international nature of the study.

Along these organizing principles (quality assurance and multicentered), the analyses have two sequences: from descriptive results to univariate and multivariate analyses, and from single site to the national and international level, paying close attention to the process of datapooling. The basic strategies will be analysis at the case level: in order to pool data from two or more sites the variation across sites must be controlled for by either using clinically informed logic or empirical methods allowing to test for differences across these strata, and analysis at the consultant and/or site level: in order to test hypotheses concerning the relationship of the hospital or service characteristics to the patient or patients referred to the C-L service or concerning the relationship of consultant variables to interven-

tions used, different univariate and multivariate methods are used depending on the scaling of the data.

Participation

The sample: after establishing the group of national coordinators, through 1988 and 1989, 368 consultants at 103 sites in 13 countries indicated their initial interest in the study; 220 consultants at 83 centers were able to participate in the initial reliability training and testing. Of these, 162 consultants (74.1%) directly passed the criteria for reliability testing; the others have been retrained and retested or supervised. Additional consultants were later trained at new sites so that eventually, 226 consultants in 56 sites from 11 countries collected data for the main study. Data collection finished in July 1993 for the patient registration forms and September 1993 for institutional and provider data. Six sites, which met the study criteria for inclusion, used specific sampling methods. These included two sites in the UK (only one consultant per site), two in Finland (half a year of consultations), one in Portugal (random sampling), and one in Germany (every other week). This resulted in a sample of 14,717 cases, among them 2379 (16.2%) for attempted suicide (Table 6).

Discussion

With regard to the main goal of the study—the assessment of the extent and quality of C-L service delivery in general hospitals in Europe—it can be regarded as extremely successful. It has achieved an unprecedented, multisite, international, collaborative C-L study with an unprecedented rigid methodology. As the design of the study has taken into account a number of possible factors that might confound direct comparison between services, the conclusions to be drawn from this study will be more reliable than most previous studies hampered by local idiosyncrasies. The study goes beyond the simple comparison of referrals. The detailed data concerning background factors, such as institutions and providers, permit a wide range of possible analyses, which will surpass by far those from earlier studies, specifically in understanding the factors influencing the consultation process and its outcome. In contrast to existing literature [27], preliminary analyses [10,11] have already shown that different C-L services are associated with different referral patterns and consultation practices. These probably reflect the way that services have developed and the specific interest of the consultants rather than patient need. If subsequent analyses show this to be the case, this will have serious implications for planning services and training of staff as well as the development of standards and guidelines.

To what extent will it be possible to generalize the results of this study? Through the design and execution of the study, great care has been taken to ensure high reliability of the measures; we have also been aware of possible biases and confounders [1,28].

Table 6. Final sample of the ECLW study

No. countries (11)	No. centers (56)	No. consultants (226)	No. cases (14,717)
Finland	6	31	1255
Norway	3	8	1001
United Kingdom	7	45	1388
Germany	11	31	2645
Netherlands	7	43	1947
Belgium	4	8	802
Greece	4	6	714
Italy	5	20	1606
France	1	4	440
Spain	3	9	1536
Portugal	5	21	1383

Selection Bias

It may be expected that participation in the study reflects a bias towards those who were most eager and best equipped to integrate the study into their clinical practice. Though this is unavoidable in such a study, the recruitment process led to the inclusion of centers across a broad range of services: geographical location, type and size of hospital (e.g., university vs non-university), as well as type and ideology of the services provided (e.g., psychiatric vs psychosomatic and "classical consultation vs liaison). As sites were chosen in each country, the National Coordinators paid specific attention to selecting a representative sample of hospital/services. There was some variation between countries, but overall, this range was achieved to a satisfactory extent. In addition, the results can be checked with the national surveys of C-L services, in four countries, to check whether the participating

services are representative of the services as a whole in that country.

Nonresponse Bias

Twenty-one of the 103 sites that originally expressed interest did not proceed with the study. The most common reason for this nonresponse was lack of local research resources to support this study in addition to running the clinical C-L service. Unlike some concerted actions in the fourth medical and health research program, the study was centrally funded, with emphasis on the central coordination of the project. In fact, centers from three countries (Sweden, Switzerland, and France) were unable to be involved for local reasons, and we have no reason to believe that the C-L services in these countries are different from those that have been included. It is likely that the other nonresponders were the least well-resourced services. From the point of view of setting governmental standards, it was important to include a range of services; this has been achieved.

Diagnostic Access Bias

It is important to note that this study is not an epidemiological one concerning psychiatric disorders in the general hospital. The subjects included in the study represent those referred to C-L services—they reflect the tip of the iceberg of mental health problems in the general hospital [29]. Diagnostic differences between patients referred in different services will be linked to the characteristics of the service—it will be assumed that the pool of patients in the general hospitals are similar within groups of hospitals (e.g., University vs district general and so forth).

In the design of the study, full attention was paid to the prevention of measurement bias. The development of the instruments, the training of consultants in their use, and the testing of their reliability as described, should have prevented unreliable and nonvalid results. For instance, the selection of a standard diagnostic instrument, *The ICD-10 Chapter V,* and the related development of the *C-L Psychiatry Clinical Guidelines* has contributed to prevent *criterion variance* through the use of specific sets of criteria for in- or exclusion in psychiatric diagnostic groups.

Expectation Bias

The consultants may have not been entirely accurate in their measurement and recording of some observations according to their own prior expectations. For example, consultants might have overassessed the time spent with patients and the diversity of the content of their interventions, as a socially desirable response bias. Apart from the training and supervision provided to counteract this bias, on-site checks by the coordination center and the national coordinators did not reveal any evidence of this. In fact, in several instances, time spent was underestimated rather than overassessed.

It is evident from the above that the method was specifically designed to counteract all possible sources of inaccuracy, and future publications will refer back to this paper for the details of the method in this respect. We are therefore confident that the main goal of the study, the assessment of the extent and quality of C-L psychiatric service delivery in general hospitals in Europe, has been met.

Conclusion

In its methodology and size this study represents the state-of-the-art study in the field of C-L psychiatric service delivery. Earlier (non) European studies have been restricted to one or two sites and lacked institution and provider information. This study will provide, for the first time, comprehensive data concerning patients referred to different C-L services in a wide variety of different hospital and clinic settings. The rigorous methodology means that we can be confident that comparable data have been collected regarding the process of consultation, the diagnosis and severity of psychiatric and physical illnesses, together with details of the health care settings in which these patients have been referred. These data will be used as a basis 1) for a feedback to individual sites and countries to stimulate service development, 2) the development of standards of care which have been lacking in C-L psychiatry, 3) building a research infrastructure for future multisite trials, and 4) the development of a databased health care policy as requested by the European Ministers of Health as well as by the European office of the WHO [30]. Already there have been three important consequences of this study: First, a European Association for Consultation-Liaison Psychiatry and Psychosomatics (EACLPP) was founded during a conference in Amsterdam October 1992. Second, a further collaborative study has been commenced—the development of a screening instrument for the detection of psychoso-

cial riskfactors in patients admitted to general hospital wards, starting December 1993 [31]. Third, a quality assurance project in C-L psychiatry and psychosomatics is being developed in order to produce a European quality assurance system [32]. Both new projects are funded under the new Biomedical and Health Research Program BIOMED1 (1990–1994) of the Commission of the European Communities.

The present data set will allow us to integrate previous research on C-L service delivery into the context of C-L services overall. For instance, the number of patients with hipfractures, in whom C-L interventions have been shown to be cost effective [33,34], have been included at each center. The contrast between such effective interventions and routine practices will stimulate guidelines for clinical practice and development of C-L services in Europe. It is the long-term goal of this work to stimulate improvement of European C-L psychiatric services so that this gap between research finding and clinical practice is narrow.

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