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Research paper

The relevance of the International Classification of Functioning, Disability and Health (ICF) to mental disorders and their treatment[☆]

Intérêt de la Classification internationale du fonctionnement, du handicap et de la santé (CIF) pour les troubles mentaux et leur traitement

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Abstract

This article examines the potential usefulness of the ICF in the treatment of mental disorders. We suggest that there is a poor fit between the nature of mental disorders and the dominant model of health care based on the treatment of acute medical illness. An overemphasis on diagnosis has contributed to a bias toward pharmacotherapy and underuse of psychological treatments for people with mental disorders. Mental disorders are more accurately conceptualized as chronic conditions, in which the person's pattern of functioning rather than diagnosis is most important in determining what services are needed. This is particularly the case for people with serious mental illness, who may have lost the ability to carry out daily tasks, live independently, work, have interpersonal relationships, and engage in leisure pursuits. The ICF is a universal framework for describing the full range of human functioning that is highly consistent with the perspective and treatment approaches of psychiatric rehabilitation. The ICF provides a broad, transdisciplinary framework for treat-

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ment planning, defining goals, assessing progress and outcomes, and allocating resources for people with mental disorders. Extended clinical examples are provided to illustrate the potential application of the ICF in this context.

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Keywords: ICF; Mental disorder; SMI; Psychiatric rehabilitation

Résumé

Cet article examine l'utilité potentielle de la CIF pour le traitement des troubles mentaux. Nous suggérons que le modèle de soins dominant fondé sur le traitement de la maladie aiguë est peu adapté à la nature des troubles mentaux. En accordant trop d'importance au diagnostic on a introduit un biais consistant à privilégier la pharmacothérapie au détriment des traitements psychologiques pour les personnes présentant des troubles mentaux. Les troubles mentaux sont plutôt à concevoir comme des états chroniques, pour lesquels le mode de fonctionnement de la personne, plus que le diagnostic, est de première importance pour déterminer le type de services dont elle a besoin. C'est notamment le cas pour des personnes présentant une maladie mentale grave, qui peuvent avoir perdu la capacité de mener des activités quotidiennes, de vivre de façon autonome, de travailler, d'entretenir des relations interpersonnelles et d'avoir des activités de loisir. La CIF est un cadre universel de description du fonctionnement humain, cohérent avec la perspective et les approches thérapeutiques de la réhabilitation psychiatrique. La CIF offre un cadre transdisciplinaire pour la programmation de traitement, la définition d'objectifs, l'évaluation des évolutions et des conséquences, et l'allocation de ressources pour des personnes ayant des troubles mentaux. Des exemples cliniques illustreront l'application possible de la CIF dans ce contexte.

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Mots clés : CIF ; Troubles mentaux ; Maladie mentale grave ; Réhabilitation psychiatrique

The International Classification of Functioning Disability and Health (ICF) was published by the World Health Organization (WHO) in 2001 (WHO, 2001a). Since then, the implementation of the ICF has been relatively slow. European countries have made more progress in implementing the ICF than many other regions of the world, with the ICF specifically mentioned in laws and policies related to disability in several countries. There has been less focus on implementing ICF in clinical systems and limited attention to its applicability to mental disorders, although these are a major cause of disability.

This article explores whether the ICF can be used to describe significant clinical phenomena in persons with mental disorders, whether this represents a potentially important addition to information that might otherwise be available, and how this information may be useful in assessment, treatment planning, and outcome evaluation. This article examines these issues in a fairly concrete manner, and is aimed primarily at health professionals and leaders of clinical programs. We hope they will find it useful at the clinical level in thinking about their treatment of people with mental health needs and in structuring clinical systems for their care. This article does not provide a review of the empirical literature related to the ICF, nor does it provide an exploration or defence of the ICF at the level of its conceptual model and its relationship to social and disability policy.

An explanation regarding some of our terminology in this article seems important at the outset. First, we use the term *serious mental illness* (SMI) to refer to the conditions of a specific population of people with mental disorders. SMI is a formal technical term used in the policies and legislation of many countries, and generally refers to schizophrenia, schizoaffective disorders, and severe forms of bipolar and unipolar depression. Our use of the term here is not intended to imply a disease model with respect to the disabilities that may arise from these conditions.

Second, we describe an important set of mental health services that we characterize as *psychological treatments*. By this we mean treatments that are primarily psychological or behavioural in nature, most often delivered in the form of talk or other interpersonal and social transactions. The word “psychological” is intended to describe the nature of the treatments, not the professionals who deliver them. Psychological treatments are indeed often the focus of psychologists, but they may also be provided by psychiatrists, social workers, occupational therapists, primary care personnel, and other types of professionals depending on the setting, context, and purpose of the intervention.

Third, in this article we contrast what we describe as a traditional medical model that emphasizes diagnosis and somatic treatment with a more functional model that we argue better suits the nature of mental disorders and the goals of treatments. Our intention is to explore the implications of different conceptual models, and we do not intend our discussion of these models to refer to specific professional groups. There are many physicians whose practices extend beyond the traditional medical model, and many non-physician health professionals—including psychologists—whose practices may be located largely within it.

Finally, it is important to acknowledge that the very terms *mental disorders* and *mental illness* are framed by the medical model, and that alternative ways of viewing the same phenomena have been proposed. In particular, there is a line of thought that views mental disorders diagnoses as socially constructed (e.g., Eisenberg, 1988; Horwitz, 2002), and some have argued that the treatment of mental disorders represents a form of social control (e.g., Szasz, 1961). We consider this to be an important critique, but one that is beyond the scope of this article. Our purpose in this article is to discuss the potential contribution of the ICF within the health care framework, which assumes both the existence of mental disorders and a reasonable consensus regarding the appropriate goals of their treatment. However, we suggest that a functional perspective may help to mitigate some undesirable consequences of a more disease-based view of these conditions.

Classification in health care settings

Health care settings have traditionally been concerned with two types of classification. First, diagnostic classification, most commonly based on the WHO's *International Statistical Classification of Diseases and Health Related Problems* (ICD-10) (WHO, 1992), is used to identify the patient's illness, injury, or other health condition. In the U.S. and some other countries, the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR) (American Psychiatric Association, 2000a) rather than ICD-10 is used to classify mental disorders. Although there are differences in labels, definitions, and criteria, the ICD and DSM are conceptually equivalent in comprising a system of discrete categories to which morbid entities defined as mental disorders are assigned. Our discussion in this paper is framed in terms of the ICD but is equally applicable to the DSM.

The second type of classification typically used in health care systems is a classification of procedures, which describes the services or treatments that the patient receives. Procedures classification is most frequently based on WHO's *International Classification of Procedures in Medicine* (WHO, 1978) or the American Medical Association's *Current Procedural Terminology* (American Medical Association, 2008), or a country-level adaptation of one of those systems. Diagnostic classification and procedures classification are used together to direct billing and reimbursement and allow for the administrative examination of such questions as whether the treatment provided has been appropriate to the condition the patient has.

The conceptualization of illness and the model of health care that underlie the near-exclusive use of these types of classifications are based on the acute medical treatment process. Within this model, the primary tasks for health professionals are:

- to identify correctly the pathogen or nature of the injury or other disease process;
- and to administer the appropriate treatment for that particular condition.

Information other than the nature of the patient's condition and the treatment provided is largely irrelevant to the clinical process. This model has been appropriate historically for meeting the challenges associated with acute infectious illness, where rapid identification and highly targeted treatments are the keys to success.

However, the health care demands of the world's population are changing. Chronic, disabling conditions – including mental disorders – and injuries that have lasting and pervasive functional consequences (e.g., spinal cord or traumatic brain injuries) now account for the greatest burden on the health systems of developed countries (WHO, 2002a). Even in developing countries, WHO estimates that by 2020 these types of conditions will account for 78% of total disease burden and be the greatest source of health care costs (Mathers & Loncar, 2006). In the context of chronic health conditions and injuries, diagnosis alone is an inadequate conceptualization of health status and a poor predictor of service needs, both at the level of individual treatment planning and at the level of population health policy.

Models of acute care that emphasize diagnosis as the primary basis for clinical decision-making do not fit these conditions well. Regardless of whether an individual's functional limitations are considered to be chronic and lifelong or of limited duration, it is the level and pattern of functioning — more than a diagnosis itself — that is often the best indicator of service needs and treatment outcomes. Interventions in the context of chronic conditions are often more accurately conceptualized as aimed at the improvement or maintenance of functioning, rather than at the elimination of an underlying disease process. For both clinical decision-making and the evaluation of health services and systems, more information is needed than simply the diagnostic category and the nature of the service provided.

Mental disorders and the acute treatment model

Mental disorders are chronic conditions that contribute heavily to global disease burden and disability (Mathers & Loncar, 2006). According to the World Mental Health Survey, between 1 and 5% of people in most countries have serious mental disorders, and between 9 and 17% of people had some episode of mental disorder during the past year (World Mental Health Survey Consortium, 2004). Unipolar depression contributes most to disease burden, in large part because of its prevalence (WHO, 2008). Bipolar affective disorders, disorders related to alcohol and substance use, and schizophrenia also make powerful contributions.

However, most people with mental disorders receive no treatment or treatment that is inadequate (Kohn, Saxena, Levav, & Saraceno, 2004; Wang et al., 2005). Factors contributing to the lack of adequate services include under-resourcing of mental health care systems, stigma, inadequate prevention programming, lack of parity in health financing with disorders considered “medical,” and entanglements between the criminal justice and mental health systems. The onset of mental disorders typically occurs early in life, but those who receive treatment at all have typically lived with their condition for between five and 23 years, depending on the disorder (Wang et al., 2005). Having a mental disorder often has a large impact on a wide range of life choices and opportunities,

so the consequences of failing to receive appropriate treatment are cumulative across the life span, both in terms of individual disability and societal disease burden.

This gap that exists between treatment and need is particularly striking given that treatments of demonstrated effectiveness exist for a wide spectrum of mental and substance use disorders (WHO, 2001b; WHO, 2005). Of people with mental disorders who do receive treatment, a very high proportion are given medication without receiving any psychological treatment (Olfson et al., 2002). This is true even though psychological treatments are often equally or more effective than medication alone (Barlow, 2004; DeRubeis et al., 2005), can have more lasting benefits (Hollon, Stewart, & Strunk, 2006), are often cost effective (Babor et al., 2003; Miller & Magruder, 1999), and are often preferred by consumers if they are given a choice (e.g., Hazlett-Stevens et al., 2002; Zoellner, Feeny, Cochran, & Pruitt, 2003).

There are many factors that likely contribute to over-reliance on medication as the primary therapeutic strategy and the underuse of psychological treatments. We suggest that one such factor is the dominance of a model of health services based on the acute medical treatment of infectious disease, with its strong focus on diagnosis. Mental health problems have been conceptualized in terms of an ever-increasing number of discrete disease entities (diagnoses) with overly specific criteria (Hyman, 2007). This contributes to the illusion that specific and curative pharmacological treatments can be found for each. This idea has persisted in spite of the failure to identify a single neurobiological phenotypic marker or gene that is useful in making the diagnosis of a specific mental disorder (Charney et al., 2002; Kendall & Jablensky, 2003) and the fact that the effects of most psychoactive medications are generally not specific to the treatment of a particular disorder or even a discrete set of disorders (Substance Abuse & Mental Health Services Administration, 2004).

The overemphasis on diagnosis has also inhibited research on psychological treatments because highly specified disorder criteria are used to define the samples for randomized controlled trials (Chambless et al., 1996). These trials are far easier to conduct with drugs than with other forms of therapy and are substantially funded by pharmaceutical companies, who have a major commercial incentive to support the description of new diagnoses (Reed & Eisman, 2006, for a discussion). These studies are then treated as the highest form of evidence for evidence-based practice (e.g., Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000), with the result that non-pharmacological treatments suffer in the evaluation of the evidence base.

The ICF as a system for describing mental disorders

In contrast to the disease model, the ICF is a comprehensive tool that focuses on *human functioning* and provides a system to enable description of the components of functioning that are impacted by a health condition. In other words, the ICF allows for the collection of data about *how* people with a health condition function in daily life, not only their diagnosis or the presence or absence of disease. The ICF is based on a biopsychosocial approach that is equally applicable to mental and “physical” disorders. The ICF allows users to document the varied components of human functioning from biological, individual and societal perspectives, and particularly aims to encompass the social and environmental aspects of disability and health.

The ICF classification system is comprised of two parts. Part one, titled *Functioning and Disability*, includes two components: a) *Body Structure and Function*; and b) *Activities/Participation*. The second part, *Contextual Factors*, also includes two components: a) *Environmental Factors* and b) *Personal Factors*. The ICF allows for the collection of data about *how* people with a health condition function in daily life, not just the presence or absence of disease. The ICF integrates the

social and environmental aspects of disability and health, provides a framework that is equally applicable for mental and physical disorders, chronic disorders, and injuries, and has enormous potential as a common global framework for organizing and communicating information on human functioning (Peterson, 2005, for an overview of the ICF from a psychological perspective).

Case example: two women with depression

The following clinical example, aggregated from real cases, is intended to illustrate some of the ways in which the ICF can be useful in describing the consequences of a health condition and the relevant parameters for treatment from a psychological point of view.

Elizabeth is a 39-year-old white female with a history of recurrent depressive disorder. She is currently depressed, and her current episode is described as moderate. She exhibits some somatic symptoms, such as sleep and appetite disturbance. Using ICD-10, her diagnosis would be coded as F33.11 (recurrent depressive episode, current episode moderate, with somatic symptoms). Jennifer is also a 39-year-old woman with a history of recurrent depressive disorder, currently moderately depressed with somatic symptoms and assigned the ICD-10 diagnostic code F33.11.

The information above is typical of what one might find in a clinical record or chart, and is likely to be the only type of information that would be captured in an administrative database, be considered in the authorization of a particular form of treatment, or be used as a basis for evaluating care. From a diagnostic point of view, these two women are exactly the same. Many health systems and most psychiatric guidelines (e.g., American Psychiatric Association, 2000b) would indicate that antidepressant medication is the most appropriate form of treatment for both these women. In some cases, psychological treatment might also be offered, but only after repeated failures of different antidepressant drugs.

Only by looking beyond the diagnostic information, however, can a more complete picture be obtained of the aspects of these women's current circumstances and functioning most relevant to the planning, focus, method, and goals of treatment. Elizabeth's depression began when she was a teenager, and was a contributing factor in her dropping out of high school. She has never been married and does not have a steady relationship. She has three young children from two different partners, who are not currently involved in their lives. The children are now living with Elizabeth's mother because she finds it overwhelming to care for them in her current condition. Elizabeth reports that she has been irritable and argumentative for the past several weeks, and was recently fired from her job after arguing with her boss about her persistent lateness to work. Since then, she has been also been neglecting self-care and household tasks. She has not bathed in several days and is sloppily dressed for the interview. She says she has not cleaned her house for two weeks, for example allowing dirty dishes to accumulate during this period. She also reports that she has begun having several glasses of alcohol at night, as this is the only way that she is able to get to sleep.

Jennifer, on the other hand, has an advanced degree and a successful career as a university professor. She reports that she is not able to be as productive when she feels depressed, writing less and sometimes getting behind on preparation for her classes. She has been married for 15 years and describes the marriage as a good one, but says that lately she has been feeling less emotionally close to her husband and they have not had much of a sexual relationship. She has two children who Jennifer's husband reports are doing well at school and who he says are well adjusted socially. Jennifer has participated in psychotherapy before, where she learned coping strategies that she says help her to "keep things together" during difficult times. She is well groomed, and both

she and her husband describe the household as orderly and as having established routines and responsibilities. Although Jennifer has been taking antidepressant medication for the past five years, she says that she still sometimes gets depressed, though not as often or as deeply as before she was taking the medication.

Based on this additional information about their functioning, it becomes clear that these two women are really not similar at all. In fact, their ICD-10 diagnosis seems to be one of the only things they have in common. They do not have the same immediate needs, and the same treatment strategies and goals would not be most appropriate for both. The ICF provides a way to go beyond their diagnoses in describing their needs and their situations. Table 1 shows codes from the ICF that might be used in describing these two women, based on the small amount of information presented. (Other relevant codes would likely be identified in a more detailed description). The main point in this example is not the codes themselves, but rather the way in which the ICF can be used to more completely describe the situations, needs, appropriate treatments, and therapeutic goals of these two women in a systematic and standard manner.

Table 1
ICD and ICF coding for two cases of recurrent depressive disorder.

Elizabeth		Jennifer	
<u>ICD Code</u>		<u>ICD Code</u>	
F33.11 Recurrent depressive disorder, current episode moderate, with somatic symptoms		F33.11 Recurrent depressive disorder, current episode moderate, with somatic symptoms	
<u>ICF Codes</u>		<u>ICF Codes</u>	
Body functions		Body functions	
b134.2	Sleep functions, moderate impairment	b134.2	Sleep functions, moderate impairment
b1302.2	Appetite, moderate impairment	b1302.2	Appetite, mild impairment
b1521.2	Regulation of emotion, moderate impairment	b1522.2	Range of emotion, moderate impairment
		b640.2	Sexual functions, moderate impairment
Activities and participation		Activities and participation	
d510.2	Washing oneself, moderate limitation	d7701.1	Spousal relationships, mild limitation
d540.1	Dressing, mild limitation	d8502.1	Full-time employment, mild limitation
d640.2	Doing housework, moderate limitation		
d570.2	Looking after one's health, moderate limitation	Environmental factors	
d660.3	Assisting others, severe limitation	e1651+3	Intangible assets (e.g., education, skills), substantial facilitator
d6700.3	Parent–child relationships, severe limitation		
d7400.3	Relating with persons in authority, severe limitation		
d8451.4	Maintaining a job, complete limitation		
Environmental factors			
e1651.2	Intangible assets (e.g., education, skills), moderate barrier		

Note: The ICF codings for these and other cases in this article are intended only to illustrate the use of the ICF. They are not intended to be definitive based on the limited amount of information presented. For activities and participation codes, only performance in lived environment (1st qualifier) is coded.

As shown in Table 1, although these two women would be assigned the same ICD-10 code, a series of ICF codes can be used to document clearly the differences in their functioning. In the ICF codes (Table 1), the alphanumeric sequence before the decimal point is the code itself. For ICF codes related to Body Functions and Activities and Participation, the numbers following the decimal point represent ratings of impairments in body functions, limitations in activities, or restrictions in participation on a 5-point scale ranging from 0 (no impairment, limitation, or restriction) to 4 (complete impairment, limitation, or restriction). For example, in the sequence d640.2, d640 represents the code for *Doing housework*, and the 2 following the decimal point indicates a moderate limitation. The numbers following the code for Environmental Factors codes represent the extent to which that factor is a barrier to functioning or a facilitator, also using a 5-point scale from 0 to 4. For barriers, a decimal point is used after the code, followed by the qualifier rating. For facilitators, the decimal point is replaced by a “+” sign. In Table 1, for example, *Intangible assets* are coded as representing a moderate barrier for Elizabeth (e1651.2) and a substantial facilitator for Jennifer in Table 1 (e1651+3).

As shown, the functional descriptions provided by these ICF codes provide a more useful and more complete basis for the identification of treatment goals and treatment strategies than the diagnosis alone. This could help in targeting resources appropriately, rather than simply giving the two women the same treatment because they have the same diagnosis. The ICF codes provide a relatively complete description of the functional status of both women. In contrast to narrative descriptions, the ICF provides this information in a form that is more usable by data systems and by those responsible for the authorization of treatment and the allocation of resources.

In this example, it becomes clear that current diagnostic systems for mental disorders confound functional impairments and diagnostic symptoms. In fact, in DSM-IV, functional impairment is itself a criterion for a diagnosis of mental disorder. Functional impairment is also explicit or implicit in the descriptions of many mental disorders in the ICD-10. Given that brain dysregulation is not directly observable—at least in a diagnostically specific way—and that there are no definitive biological markers, mental disorder diagnoses are made largely based on symptom presentations. These symptoms often relate to body functions, so can generally also be coded using the ICF (Üstün, 2007). Therefore, several of the ICF codes listed in Table 1 might be viewed either as symptoms of a disease (e.g., sleep disturbance, appetite, changes in emotional functioning), or as functional impairments. Assigning ICF codes to diagnostically relevant symptoms of depression seems at first glance to be providing nothing more than redundant information. This may be true if a symptom is a defining feature of the diagnosis, such as mood disturbance in depression. However, in this example the patterns of other symptoms for Elizabeth and Jennifer are quite different, and this information can be conveyed by ICF codes.

This has important implications for treatment. Considering these deficits only as disease symptoms is more likely to lead to somatic treatment strategies (i.e., medication) ostensibly aimed at the underlying disease process. Considering them as functional problems, on the other hand, supports the consideration of additional or alternative treatment strategies. The ICF allows for a more precise and descriptive classification of the functional aspects of mental health conditions, thus providing a broader and transdisciplinary framework for treatment planning, defining goals, and assessing progress and outcomes.

Serious mental illness and psychiatric rehabilitation

As noted, SMI is a legislative and policy term that refers to a group of mental disorders including schizophrenia, schizoaffective disorders, and severe forms of bipolar and unipolar depression. SMI

is estimated to affect about 3% of the population of most countries (WHO, 2001b). “Treatment as usual” for SMI typically involves long-term psychoactive medication, minimal social support services, and, frequently, institutionalization.

In contrast, psychiatric rehabilitation (PR) is a holistic, integrated approach to treatment of SMI, described in several comprehensive texts (e.g., Liberman, 2008; Mueser, Bond, & Drake, 2007). According to the PR perspective, it is the pattern of functional impairments, limitations, and restrictions rather than the diagnosis *per se* that is the defining characteristic of the SMI population. People with SMI have often lost skills in many areas of functioning, including self-care, homemaking, interpersonal relationships, occupational functioning, engaging in leisure pursuits, and participating in community life. This has profound implications for subjective distress, psychological well-being, and quality of life.

PR conceptualizes SMI as a set of functional disabilities common to a variety of mental disorder diagnoses, and particularly focuses on persistent, disabling impairments in personal and social functioning. The overarching goal of PR is to overcome disability and regain personal and social functioning, rather than to cure or eliminate a disease. Since the 1990s, the evolution of PR has converged with the *recovery movement* in mental health, which values recovery over “cure” and the goal of achieving a higher quality of life over that of controlling symptoms. Although clinical assessment in PR includes psychiatric diagnosis, diagnosis has limited utility *within* the SMI population. PR includes treatment with psychoactive medications, but the choice of specific pharmacological agents and dosages in PR is more heavily informed by ongoing functional assessment of the therapeutic and side effects of particular psychoactive medications than by specific diagnoses. The person receiving treatment is an active member of the PR treatment team, and his or her personal goals and preferences often provide the specific criteria for recovery goals, such as “get and keep a job,” “have a good friend,” or “live independently.”

In the clinical practice of PR, multiple treatments are organized and coordinated through integrated assessment, treatment planning, and progress evaluation. The primary approach to clinical evaluation in PR is *functional assessment* (Spaulding, Sullivan, & Poland, 2003). Functional assessment is a formal, systematic process of identifying specific behavioural impairments or limitations, the treatments or interventions that affect them, behavioural and environmental barriers, and behavioural and environmental assets that promote recovery. Functional assessment identifies a set of relatively independent clinical “problems” or barriers to recovery. People with SMI tend to have multiple problems in unique combinations, spanning the full range of human functioning from neurophysiological dysregulation — the primary focus of pharmacotherapy — to socioenvironmental conflicts and problems in accessing available resources. *Case formulation* identifies systematic causal relationships among functional problems and is used to plan strategic interventions accordingly. The person with SMI collaborates in developing a highly individualized *treatment and rehabilitation plan*, consulting with the team about the effects of medication and participating in a range of problem-focused interventions.

Extensive evidence supports the specific practices of PR and the view that PR is the treatment of choice for SMI (President’s New Freedom Commission on Mental Health, 2004; Substance Abuse & Mental Health Services Administration, 2004). PR as a set of treatment technologies is inseparable from recovery as a social movement and a cultural consciousness. Both the recovery movement and the emerging data support a view that the debilitating features of SMI are largely a product of social and cultural neglect and disenfranchisement. Given the right opportunities, people with SMI can recover. Unfortunately, it is still commonly believed in most parts of the world that SMI is “incurable” and that it is a waste of resources to provide anything more than custodial care. In the context of the current discussion, this leads to the question of

whether the ICF can help to make the case for the implementation of psychiatric rehabilitation services.

Psychiatric rehabilitation and the ICF

The ICF is based on two important principles that have significant implications for how health services are conceptualized and structured. The first of these is *universality*, that is, the view that disability is a phenomenon that is characteristic of the human condition, affecting all people in some way and at some time in their lives. This is in contrast to the view of disability as a defining characteristic of specific minority groups. The second underlying principle of the ICF is *continuity*, or the view that disability in any area exists along a continuum, based on the interaction of the person, the health state, and the environment. This is in contrast to a view of disability as a categorical phenomenon, that is, something intrinsic to the person that he or she either does or does not have. The values that underlie the ICF include: (1) the dignity and worth of all people; (2) the inclusion of people with disabilities in society to the fullest extent possible; and (3) the need for advocacy to provide people with disabilities the best opportunity to maximize their independent functioning. In all of these ways, there is a high degree of compatibility between the ICF and the PR perspective on SMI.

Some of the specific treatment approaches used in PR are listed below, along with an indication of the parts of the ICF that correspond to the aspects of functioning that are conceptualized as the focus or goal of each type of treatment.

Social skills training

Highly developed versions of social skills training have been designed specifically for people who live with schizophrenia and related SMI conditions. Studies are consistent in showing that formal social skills training improves personal and social functioning, reduces hospital recidivism, and moderates symptoms in people with SMI (Benton & Schroeder, 1990; Corrigan, 1991). The ICF contains a chapter on *Interpersonal interactions and relationships* that includes codes related to basic personal interactions, formal relationships, and informal relationships and a chapter on *Communication* that includes codes such as Conversation and Discussion. These ICF codes provide a conceptual framework that is highly consistent with the therapeutic parameters and goals of social skills training.

Independent living skills training

People with SMI often lose or fail to develop skills associated with routine daily living, such as basic personal healthcare, grooming and hygiene, keeping a daily schedule, housekeeping, cooking, management of personal funds, and using public resources (transportation, libraries, etc). Acquisition of these skills contributes heavily to the ability to live safely and comfortably as members of the community. Empirical verification of the effectiveness of independent living skills training has been provided by separate controlled trials, as well as assessments of more comprehensive rehabilitation programs that include or emphasize living skill training (Lieberman et al., 1998; Michie, Lindsay, & Smith, 1998). The ICF chapters on *Self-care*, *Domestic life*, and *Community, social and civic life* provide a range of codes that could be used as a systematic and standard framework for defining goals and monitoring progress in independent living skills training.

Occupational skills training

Occupational functioning incorporates both “work and play.” In the “work” domain, occupational skills are generally understood to be those that are important for any work-related activity, such as punctuality, proper workplace grooming, staying on task, following instructions, and managing relationships with coworkers and supervisors. Leisure and recreational skills, including identifying interests and planning activities, are as important to stable functioning and good quality of life as work skills. Research supports the effectiveness of occupational skills training for improving work-related performance (Durham, 1997) and enhancing leisure and recreational functioning (Pestle, Card, & Menditto, 1998) in people with SMI. In addition, skills training focused specifically on working has shown effectiveness in helping recovering people get and keep jobs (Marwaha & Johnson, 2004; Twamley, Jeste, & Lehman, 2003). The practice of supported employment, which developed as a placement technique for persons with severe disabilities, has emerged as an effective strategy for people with SMI in several published clinical trials (Bond, 2004; Cook, Leff, Blyler, Gold, & Goldberg, 2005). The ICF includes codes on Work and employment (in the chapter on *Major life areas*) and Recreation and leisure (in the chapter on *Community, social, and civic life*) that could be used as a treatment and evaluation framework for vocational training programs.

Illness/wellness management skill training

Gaining the ability to manage one’s own psychiatric illness is central to the rehabilitation and recovery perspective (Mueser et al., 2002). There is a growing recognition that specialized skills are needed to self-manage psychiatric disorders, comparable to skills needed to self-manage other chronic and potentially serious illnesses such as diabetes. A number of original studies and reviews confirm the effectiveness of skills training focused on illness/wellness management for improving adherence to treatment among people who live with SMI (Dolder, Lacro, Leckband, & Jeste, 2003 for a review). This is an area that the ICF does not capture quite as specifically, but the ICF does include codes that focus on Taking care of one’s health, Judgment, Insight, Making decisions, and other parameters relevant to self-management of SMI.

Family consultation, education and therapy

In a number of controlled outcome trials, family services focused on psychoeducation, reduction of expressed emotion, behavioural management, and social support have been found to reduce relapse and recidivism rates among people with SMI (Lam, 1991; Pilling et al., 2002). The ICF contains codes that focus on the functioning of the individual being treated in terms of *Interpersonal interactions and relationships*. Moreover, the Environmental Factors section of the ICF contains codes on *Support and relationships* and on the *Attitudes* of others, including family members, which may act as barriers or facilitators in functioning and recovery.

Neurocognitive therapy and environmental engineering

Although pharmacotherapy can reduce the cognitive disorganization of acute psychosis, stabilized and optimally medicated people with SMI often have significant residual neurocognitive impairment. More than any other factor, residual neurocognitive impairment is a strong predictor of poor rehabilitation outcomes and is what makes SMI a chronic, disabling condition. Studies

have shown positive effects of neurocognitive therapy with respect to a variety of outcomes, including social competence, psychotic symptoms, and work performance (Silverstein, Menditto, & Stuve, 2000). Target behaviours include appropriate motor orientation, eye contact, disregard of ambient distraction, and performance of elemental group-related tasks. These functions are well captured in the ICF chapters on *Mental functions* and *Learning and applying knowledge*. In addition, the Environmental factors chapter on *Products and technology* include codes related to assistive products and devices that may facilitate functioning in this area.

The ICD can be used to provide a standard conceptual and assessment framework for functional assessment, case formulation, and individualized treatment and rehabilitation plans. The ICF can provide specific criteria for describing recovery goals and a universal basis for documenting clinical improvement. The framework of the ICF can provide a basis for communication among health professionals of different disciplines, as well as communication with consumers or users of PR services, encouraging and facilitating collaboration (Rentsch et al., 2003). Such a framework promotes a better understanding of the contribution and responsibilities of each practitioner. Integral to the ICF is the consideration of the sociocultural and other environmental factors that are central to the PR approach. The ICF can also be used to provide an alternative operational basis for the organization of care and health services research, in which patients are grouped according to functional needs rather than psychiatric diagnosis.

ICF coding: case examples

Following are two extended case examples intended to illustrate the application of the ICF to provide a framework for describing the functional characteristics and needs of people with mental disorders, and the goals and outcomes of mental health treatment.

Case example: Shirley

Shirley is a 45-year-old woman with bipolar disorder currently in a manic phase. She was persuaded to come to the hospital for evaluation and treatment by her brother, who accompanied her to the interview. Shirley refuses to take any medications. She is currently living independently in an apartment. At the time of the assessment, she appeared unkempt, and she acknowledged not having slept in the past 48 hours and not having bathed for one week. Her speech was highly circumstantial, tangential, and rapid in pace. She expressed some delusional thoughts, such as stating that she was invincible and unable to be injured in any way. She was agitated, pacing back and forth, and wringing her hands throughout the interview. Her affect was particularly labile and generally euphoric.

During the past week, she had spent over \$10,000 on clothing and had engaged in risky behaviors, such as speeding excessively while driving (approximately 180 kilometers per hour) and attempting to cross a freeway on foot. She was able to identify alternate means for crossing the freeway, but insisted that the “direct approach” was faster, and therefore, more desirable. Despite the interviewer’s attempt to point out the pain and worry her behavior had caused her family; she remained giddy and giggling, and seemed to have little awareness of the consequences of her actions. Her brother noted that Shirley had previously been in interpersonal therapy, which had given her the support necessary to adhere to a medication regimen that kept her manic symptoms at bay, greatly reducing her risky behaviors. However, her health insurance had refused to cover continuing interpersonal therapy, so Shirley was not able to continue with it for financial reasons.

Table 2
Case example coding: Shirley.

<u>ICD code</u>	
F31.2 Bipolar affective disorder, current episode manic with psychotic symptoms	
<u>ICF Codes</u>	
Body functions	
b1340.3	Amount of sleep, severe impairment
b1400.3	Sustaining attention, moderate impairment
b147.2	Psychomotor functions, moderate impairment
b1520.3	Appropriateness of emotion, severe impairment
b1521.2	Regulation of emotion, moderate impairment
b1600.3	Pace of thought, severe impairment
b1601.3	Form of thought, severe impairment
b1644.3	Insight, severe impairment
b1645.3	Judgment, severe impairment
Activities and participation	
d177.3	Making decisions, severe impairment
d510.3	Washing oneself, severe impairment
d540.2	Dressing, moderate impairment
Environmental factors	
e310+3	Immediate family, substantial facilitator
e5801.3	Health systems, severe barrier (insurance policies)

Note: Qualifier 2 (capacity) would be coded as “8” (not assessed) for all activities and participation in this case example.

Coding: Shirley

On the ICD-10, Shirley would be assigned a diagnostic code of F31.2 (Bipolar affective disorder, current episode manic with psychotic symptoms).

Based on the information in the case example, Shirley can be described much more fully using ICF codes, as shown in Table 2. Note that the information provided in the case example, and therefore the codes assigned, relate primarily to mental health issues. Codes from other parts of the ICF would also be assigned based on a more comprehensive evaluation. Also, because information available in the case study relates only to Shirley’s functioning in her current environment and not to functioning on a formal or standard evaluation environment, only the first qualifier, Current Performance, has been coded for Activities and Participation.

Case example: Thomas

Thomas is a 25-year-old man diagnosed with Paranoid Schizophrenia who was referred to an inpatient Psychiatric Rehabilitation Program, following six weeks in an inpatient psychiatric unit.

History

Thomas graduated from high school with good marks, particularly in math and science. His parents worried that he was too immature emotionally to go away to college, so Thomas began attending a local university while continuing to live with his parents and younger brother. During this period, Thomas began to experiment with drugs, although at first no more than many of his friends. However, unlike his friends, Thomas became socially withdrawn and his school perfor-

mance deteriorated. He began experiencing auditory hallucinations and intense, unexplainable emotional arousal and anxiety. He developed a belief that classmates were persecuting him, and these beliefs became increasingly elaborate and bizarre. He eventually became convinced that the Central Intelligence Agency was involved in a conspiracy against him and had developed a machine to be able to read his mind. Thomas's family and friends became alarmed and attempted to get him treatment but he refused, denying that anything was wrong with him. Following this episode, Thomas dropped out of school, left home, and disappeared.

Many months later, Thomas reappeared in a psychiatric hospital, under a Mental Health Commitment Order arising from his becoming involved in a physical altercation with a worker at a convenience store. Over the subsequent five years, Thomas was hospitalized on several occasions, each time under civil commitment triggered either by physical altercations or by law enforcement interventions in response to an apparent inability to care for his basic needs (grave disability). On admission, he was typically described as incoherent, disheveled, belligerent and aggressive. While hospitalized, his aggressive behavior had sometimes resulted in his being locked in seclusion to prevent injury. Following each discharge from the hospital, Thomas dropped out of outpatient treatment, took his prescribed medications only sporadically, and resumed using alcohol and street drugs. Following the first two hospitalizations, Thomas was discharged to live with his family, but left home within several days. Subsequently, he refused to return there, and resisted any attempt on the part of hospital staff to involve his family in the treatment or discharge process. For most of the past five years, Thomas had been homeless, living as a street person, occasionally taking jobs but not holding them, and using whatever alcohol and drugs he could obtain.

Based on this history, Thomas was assessed to be at continuing risk to himself and others, beyond immediate resolution of the acute psychosis. It was determined that a meaningful change in this pattern of recurring relapse and dangerousness would require comprehensive assessment and resolution of the factors associated with his illness within the context of the inpatient Psychiatric Rehabilitation Program.

Evaluation

A multidisciplinary assessment of Thomas's functioning upon arrival at the Rehabilitation Program indicated that he was in partial and unstable remission of his acute psychosis. He had experienced a significant reduction of agitation and aggressive behavior since beginning his antipsychotic medication regimen during the initial hospitalization. However, he continued to complain of "voices" that fluctuated from an incomprehensible cacophony to vague instructions to leave the hospital and warnings not to trust anyone. During interviews, he demonstrated a moderate degree of odd posturing and grimacing, and a generally suspicious demeanor. He said that he had been sent to the hospital illegally, that he had no mental illness or any other problems, and demanded to be released immediately. When informed of his right and access to legal representation, he refused, saying that "the lawyers are in on it."

Thomas's neurocognitive functioning was found to be substantially and pervasively impaired, consistent with partial recovery from an acute psychotic episode. Neuropsychological testing indicated moderate impairments in attention and short-term memory, and a severe impairment in executive functioning. Memory for remote events was intact. He had difficulty following multiple step commands. On complex tasks, he had marked difficulty shifting between mental sets and tended to perseverate on a particular strategy or response set. He also exhibited deficits on tests of psychomotor speed. The overall level of impairment was sufficient to interfere significantly with personal and social functioning. Thomas' social history suggested that significant residual

neurocognitive impairment was likely to remain even when the acute state had resolved, but this could not be assessed at the time of this evaluation.

Thomas's behavioral functioning was also generally consistent with acute psychosis. Thomas had severe difficulty following a daily routine and performing basic self-care activities, such as bathing and dressing. On the unit, he had difficulty following the schedule because he was often confused about the date and day of the week. Staff also reported that he was very easily annoyed and angered, and prone to rapid and dramatic mood shifts. He was reclusive and socially isolated, and exhibited a moderate degree of odd posturing and talking to himself in the ambient environment. When he did interact with others, he had difficulty initiating and maintaining appropriate social interactions, and became angry over any expressed difference of opinion. He was unable to avoid or resolve interpersonal conflicts, even over the most trivial matters.

Although Thomas expressed interest in making money, he could not identify any specific occupational interest or skill. He had difficulty attending to work tasks, even in the hospital's sheltered workshop, and frequently had to be removed from the workshop due to interpersonal conflicts with supervisors and coworkers. He was also unable to identify any recreational interests, other than using street drugs and alcohol, and expressed very limited knowledge of leisure and recreational opportunities or resources.

All available data indicated that Thomas was not interested in treatment and rehabilitation, and had never acknowledged having a mental illness or a continuing need for treatment. Thomas's parents and brother expressed interest in being involved in rehabilitation, but Thomas was adamantly opposed to this.

Coding: Thomas

As noted, Thomas's was diagnosed using ICD-10 as having Paranoid schizophrenia, episodic with progressive deficit (F20.01). An ICD code related to his harmful use of alcohol and other psychoactive substances was also assigned (F19.1). In addition, the rehabilitation team used the ICF as a framework for creating an integrated picture of Thomas's functioning based on the data from the multidisciplinary assessment and staff observation and discussion of Thomas's functioning in the inpatient Rehabilitation Program. The ICF was used to provide a systematic, structured basis for formulating Thomas's rehabilitation plan and monitoring Thomas's progress over time. The rehabilitation team's initial ICD and ICF coding for Thomas is shown in Table 3.

Not surprisingly, the ICF codes identified from *Body Functions* focused extensively on *Mental functions*, the area of Thomas's primary disturbance. However, a much broader set of codes in *Activities and Participation* was used to describe the pervasive functional impact of his condition. Some of these codes (e.g., d630 Preparing meals, d770 Intimate relationships, d910 Community life) did not represent an immediate focus of Thomas's treatment, but rather represented areas that were likely to be increasingly important as therapeutic objectives as rehabilitation proceeded.

It was expected that when Thomas's psychotic symptoms had further remitted and he was able to engage more fully as a collaborator in the treatment process, he would assist the team in operationalizing and prioritizing these objectives more clearly in terms of his own situation. Thomas's ability to work on some of the more complex objectives likely to be of more direct importance to him (e.g., d850 Remunerative employment) was seen as needing to be based on progress in some of the more basic, constituent functional areas (e.g., d230 Carrying out daily routine, d7202 Regulating behaviors within interactions). In some areas, coding Thomas's level of functioning was deferred (i.e., coded as 8, for 'Not assessed') because meaningful evaluation was not yet possible.

Table 3
Case example coding: Thomas.

ICD Codes									
F20.01	Paranoid schizophrenia, episodic with progressive deficit								
F19.1	Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances, harmful use								
ICF Codes									
<i>Body functions</i>		<i>Body functions, cont.</i>		<i>Activities and participation, cont.</i>		<i>Activities and participation, cont.</i>		<i>Activities and participation, cont.</i>	
b1140.2	Orientation to time Moderate impairment	b1644.3	Insight Severe impairment	d350.83	Conversation Severe limitation	d710.83	Basic interpersonal interactions Severe limitation	d910.84	Community life Complete limitation
b122.8	Global psychosocial functions Rating deferred	b1645.3	Judgment Severe impairment	d355.84	Discussion Complete limitation	d720.84	Complex interpersonal interactions Complete limitation	d920.84	Recreation and leisure Complete limitation
b1304.3	Impulse control Severe impairment	b1646.3	Problem solving Severe impairment	d510.83	Washing oneself Severe limitation	d730.83	Relating with strangers Severe limitation	<i>Environmental factors</i> e310.8	Immediate family Rating deferred
b1400.2	Sustaining attention Moderate impairment	b7652.2	Tics and mannerisms Moderate impairment	d520.83	Caring for body parts Severe limitation	d740.83	Formal relationships Severe limitation		
b1401.3	Shifting attention Severe impairment	<i>Activities and participation</i>		d540.82	Dressing Moderate limitation	d750.83	Informal social relationships Severe limitation	e320.8	Friends Rating deferred
b1440.2	Short-term memory Moderate impairment	d1750.82	Solving simple problems Moderate limitation	d570.84	Looking after one's health Complete limitation	d760.83	Family relationships Severe limitation	e355.8	Health professionals Rating deferred
b1470.2	Psychomotor control Moderate impairment	d1751.83	Solving complex problems Severe limitation	d610.84	Acquiring a place to live Complete limitation	d760.84	Intimate relationships Complete limitation	e5250.8	Housing services Rating deferred
b1521.3	Regulation of emotion Severe impairment	d177.83	Making decisions Severe limitation	d620.84	Acquisition of goods and services Complete limitation	d840.83	Apprenticeship (work preparation) Severe limitation	e5700.8	Social security services Rating deferred
b1560.3	Auditory perception Severe impairment	d210.82	Undertaking a single task Moderate limitation	d630.84	Preparing meals Complete limitation	d845.84	Acquiring, keeping, and terminating a job Complete limitation	e580.8	Health services, systems, and policies Rating deferred
b1602.2	Content of thought Severe impairment	d220.83	Undertaking multiple tasks Severe limitation	d640.84	Doing housework Complete limitation	d850.84	Remunerative employment Complete limitation	e5850.8	Education and training services Rating deferred
b1642.3	Time management Severe impairment	d230.83	Carrying out daily routine Severe limitation	d650.84	Caring for household objects Complete limitation			e5900.8	Labour and employment services Rating deferred
b1643.3	Cognitive flexibility Severe impairment	d240.84	Handling stress and other psychological demands Complete limitation						

Note: Qualifier ratings for activities and participation codes are for *Capacity* based on formal observation and assessment in the clinical environment (second qualifier). *Performance* in lived environment was not assessed, so a rating of 8 (not specified) is assigned for the first qualifier. Clearly, Performance will be a central issue in Thomas's rehabilitation over time. Environmental Factors likely to be of importance in Thomas's rehabilitation were identified, but not rated, as these most meaningfully relate to the lived environment postrehabilitation.

For Body Functions, the ICF uses a single qualifier to indicate the level of impairment, ranging from 0 (“No impairment”) to 4 (“Complete impairment”). Two qualifiers are required for Activities and Participation, using the same 5-point scale.¹ The first qualifier represents *Performance* in the person’s lived environment. The second qualifier represents *Capacity*, which is intended to reflect an objective evaluation of “true” ability when environmental influences are neutralized as much as possible. Clinically, it is most useful to think of these two qualifiers as corresponding to functioning in the person’s normal environment (Performance) and functioning in the assessment or treatment setting (Capacity). Traditionally, the focus in health care settings is on Capacity. However, the ICF’s addition of a specific focus on Performance is important. Gains in structured treatment settings may not automatically translate to gains in the real world, and environmental supports or obstacles may affect functioning in powerful ways. Thomas has been assessed only in the clinical setting, partly through the use of standardized measures, which corresponds more closely to the assessment of Capacity, the second qualifier. Because Thomas has not yet been assessed in a real-world environment, something that will become important at a later state of rehabilitation, the first qualifier is coded as 8 for “Not assessed” for the Activities and Participation codes.²

The ICF Coding also includes a number of codes for Environmental Factors. Environmental Factors can be coded using a qualifier to indicate the extent to which that factor functions either as a barrier or as a facilitator. Environmental Factors codes are generally used to describe the characteristics of the real-world, lived environment that have an impact on functioning. The team included several Environmental Factors codes they believed were likely to be important over time, particularly in Thomas’s transition from the inpatient program. As noted, however, the initial assessment focuses only on functioning inside the assessment and clinical settings, so specific qualifier ratings for these factors were not assigned.

As noted, the rehabilitation team identified a number of functional and environmental areas beyond the immediate assessment that they believed would be important in Thomas’s rehabilitation. Although it is helpful to have these in mind from the initial formulation of a plan, it would also be possible to add additional functional areas with corresponding ICF codes as rehabilitation proceeded.

Concluding comments

The ICF will clearly be the dominant conceptual model of disability for years to come, in spite of imperfections that are generally acknowledged. A report from the influential and normally conservative Institute of Medicine entitled *The Future of Disability in America* (Institute of Medicine, 2007) recommended that: 1) the ICF be adopted as a conceptual framework for disability; and 2) continued refinements to improve the ICF’s scope and utility for disability monitoring and research be promoted. Moreover, if we take the principles of universality and continuity seriously, adopting the ICF as a model of disability means adopting it as a model of the functional consequences of *all* health conditions, including mental disorders. The ICF represents a new way to think about health and about functioning, and a move away from the acute disease model as the primary lens through which health conditions and health care services are viewed. In this article,

¹ Annex 2 of the ICF provides information about coding and additional optional qualifiers.

² Because Thomas is in a relatively long-term inpatient treatment setting, the hospital could also be considered to be his “usual environment” and Thomas’s behavior in that setting could be used as a basis for ratings of performance (Qualifier 1) in activities and participation. This possibility has not been considered in the present example for the sake of simplicity and clarity.

we have attempted to demonstrate why this is particularly important for people with mental health needs.

Obviously, the ICF in itself will not overcome the effects of major structural problems in countries' health care systems, such as reimbursement policies in some countries that favour acute over chronic care, residential over home-based health services, medical over mental health care, and mental health over substance abuse services. However, other countries (e.g., Scandinavian countries, UK, Germany, Argentina) have systems of financing and delivering health care that allow for better integration of health services, including the provision of psychological treatments to people with mental disorders. In such contexts, the ICF may be very useful in helping to target resources appropriately.

The ICF provides an internationally recognized basis for the specification of treatment goals, evaluation parameters, and health care outcomes. It provides a framework for describing the specific characteristics of mental disorders that may require treatment, as well as the broader functional issues likely to be treatment's most important goals. Implementation of the ICF can support better care for people with mental disorders, and better integration of mental health services in health systems and reimbursement policies.

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