

## **The BEST-Index: A 'life skills' assessment for selecting and monitoring therapy in mental health care**

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**Summary:** Assessing patient functioning in areas of behaviour such as communication and social skills or work and leisure activities is a core field of practice within psychiatric and forensic psychiatric nursing and its outcome is linked to future (violent) behaviour. Difficulties within these areas often entail significant problems related to the treatment of psychiatric and forensic psychiatric patients. Clearly, there is a lack of valid and reliable behavioural measures, but objective assessment is generally difficult without a validated assessment schema. The Behavioural Status Index (BEST-Index) offers such a system of baseline assessment and longitudinal monitoring as a basis for treatment, further specialised assessment, or measurement of outcome during and after interventions. This paper introduces the theoretical background and describes the function and purpose of the BEST-Index.

In recent years it has become apparent that mentally ill people are at increased risk of committing crimes of violence. Research supports the increased prevalence of violence to others in people with a major mental disorder, with substance abuse, particularly combined with a personality disorder, putting discharged psychiatric patients at risk of violence to others (**Appelbaum, Robbins and Monahan, 2000; Brennan, Mednick and Hodgins, 2000; Hodgins and Janson, 2002; Monahan, 2000; 2001; 2002; Wallace et al, 1998**).

Relating to the link between mental illness and crime, the capacity of clinicians accurately to predict violent behaviour has not been satisfactory (**Otto, 1992; Lidz, Mulvey and Gardner, 1993; Litwack and Schlesinger, 1999; Monahan, 2000**). A major difficulty in psychiatric and forensic psychiatric care is the shortage of appropriate instruments with which to carry out valid and reliable therapeutic assessments which are behaviourally based and therefore appropriate for use within varied psychiatric contexts. Although many in-patient scales exist, very few are empirically tested or validated and they often show little generalising power. Thus, clinicians often face problems searching for a reliable and valid instrument with wider-than-local provenance (**Monahan and Steadman, 1994**). In their examination of violence and mental disorder in the context of risk assessment, Monahan and Steadman (1994) indicate that assessments need to be systematic and based on the population undergoing assessment (**Monahan and Steadman, 2001**). Identified risk factors need to be broken down into more manageable components, further

recorded through effective treatment planning and outcomes evaluated through recovery status.

However, the clinical reality is different. Many scales suffer from being designed specifically for use with psychiatric in-patients and without reference to normative community groups. Some scales are frankly diagnostic in character, examining behaviour strictly in relation to the presence or absence of symptoms. Others rely exclusively on patient self-rating, tending to leave too much scope for manipulation by the patient. Unfortunately, past conditions of normality have tended to be taken for granted or neglected psychometrically. Outside the field of developmental psychology they have been little researched or described (e.g., **Lerner, Easterbrooks and Mistry, 2003**). They rarely form the focus of assessment within the psychiatric field and usually instruments do not start by looking for the normal response.

Specifically in the context of forensic psychiatric care, there is also need for an instrument which will offer assessors the opportunity to examine possible relationships between criteria of 'social risk' and criteria of more general aspects of social functioning. Such an instrument would greatly facilitate offender evaluation and compilation of systematic actuarial databases which are clinically and practically relevant. From a clinical point of view, it is important to know what the best ways are of preparing a forensic patient for discharge to minimise risk of violent re-offending and what aspects the therapist should concentrate on. It is vital to maintain continuity of care during and after discharge, when the patient has returned home or to some form of community residential care (**Reed and Woods, 2000**).

Such problems are not limited to the forensic context. In more general terms, behavioural prediction should be tackled both *behaviourally* and *observationally*. Behavioural observation is needed to identify key elements of successful or unsuccessful social functioning in normative social groups and to operationalise the description of such behaviours. Therapies can profit from a scientific behavioural assessment, if this additional knowledge is translated into structures facilitating the learning process of the patient about what aspects of personal thinking and behaviour are likely to help or prevent his successful adjustment to normative social living (**Pollock and Webster, 1990**). In forensic psychiatry, the two main approaches, namely clinical and actuarial methods, need

to be combined more effectively, using methods which employ elements of both major assessment strategies (**Quinsey and Maguire, 1986; Webster, Hucker and Bloom, 2002**).

The method introduced in this paper uses a combination of clinical and actuarial methods. If a solely actuarial approach is used, based on statistical variables, this can have few implications for treatment planning with psychiatric patients, since such approaches are essentially not about *individuals*, but about *populations*. In the case of forensic psychiatric patients, there is a risk for the dangerous individual that his perceived dangerousness becomes based solely on previous recorded violence, neglecting pro-social behavioural aspects that could be used as resources for the therapeutic process. By contrast, the research instrument introduced in this paper draws heavily on normative developmental psychology and social skills theory, utilising institutional monitoring of behaviour, focusing on the individual, and thus allowing for appropriate modification of behavioural components otherwise regarded as being static (**Woods and Reed, 1997**).

### **The Behavioural Status Index (BEST-Index)**

The rationale underlying development of the Behavioural Status Index may be defined as follows: In order to meet the need for a normatively-based instrument capable of monitoring changes in individuals in response to specific therapies, the nature of this instrument is critical. It needs to reflect behavioural and attitudinal changes in response to a wide range of therapies and to do this with clinical relevance and reliability. This approach to assessment is fundamentally different from the more usual, clinically oriented one and also from the experimental one. The rationale is to examine a range of 'normal' behaviours and to see to what extent each patient has 'fallen away' from the normative in specific social behaviours, insights and personal skills (**Woods and Reed, 1999a, b; Reed and Woods, 2000; Woods, Reed and Collins, 2001**).

The BEST-Index is a behaviourally based instrument with the central purpose of assessing risk and related daily behaviour. The *explanation* of individual behaviour is highly relevant in relation to dangerousness and it is logical that treatment needs and treatment potential should be examined through systematic clinical assessment appropriate to the patient population (**Pollock and Webster, 1990; Borum, 1996**). Such global definitions as the above must be analysed into their components if health care professionals are to gain

realistic baseline measures, plan effective treatment programmes and evaluate outcomes and recovery (**Monahan and Steadman, 1994**). These forensic care goals also clearly comply with the clinical goals of the BEST-Index within the wider context of mainstream psychiatry.

The instrument has developed from previous research carried out by Magoub and Reed in the 1980s (**Mahgoub, 1988**). The original instrument, initially known as the Behavioural Recovery Index, was developed to assess therapeutic impacts during bridging therapy as patients moved from hospital to community-based psychiatric care. This instrument sought to assess four areas of behavioural components: insight; communication and social skills; self and family care; and work and recreational activities. The version of the Behavioural Status Index introduced in this paper (**Reed and Woods, 2000**) is a substantially reworked and extended combination of six related sub-scales, dealing respectively with social risk (for inclusion in the forensic field); insight; communication and social skills; work and recreational activities; self and family care; and empathy (see also **Robinson, Reed and Lange, 1996**). According to the proposed model, these then become the main focal areas for treatment planning. The theoretical propositions underpinning this combination are that such variables are essentially interrelated and that they are in some sense predictive of one another (see **Frey, Hirschstein and Guzzo, 2000**).

## **BEST-Index scale descriptions**

***Social risk sub-scale:*** As is the case with 'normal' behaviours, there appear to be few, if any, assessment scales recording empirical concomitants of dangerous behaviours which could form the basis for individual treatment planning (**Monahan, 1988**). The social risk sub-scale of the BEST-Index has been developed to meet this need. It is not concerned with the causes of specific acts of dangerous or 'risky' behaviour, but with identifying *predictive* behaviours and displaying them in a scale which records systematic evidence of health status for assessing baseline and reassessment data. The scale consists of twenty items measuring constructs associated in the literature with dangerousness, such as family support; various forms of physical and verbal violence, with or without trigger events, towards self, others or property; breaches of security; disruption; inappropriate sexual behaviour; obsessive behaviour surrounding the offence; substance abuse; and history of psychiatric disturbance (for detailed item descriptions see **Woods, Reed and Robinson, 1999; Woods, Reed and Collins, 2001a**).

The ***insight sub-scale*** consists of twenty items which examine the individual's cognitive constructs of reality. An eclectic perspective is adopted, derived from cognitive-behavioural, psychodynamic, and phenomenological theories (**Esterson, 1970; Misiak and Sexton, 1974; Meichenbaum, 1978; Malan, 1979; Wolpe, 1990; O'Donohue and Henderson, 2001; Izard, 2002**). It is concerned with such constructs as the ability to identify states of personal tension; presence or absence of coping strategies; self-appraisal; prioritisation of problems; goal planning; realism of expectations; compliance with therapy; identification of preadmission events; sense of personal responsibility; and the ability to identify events which evoke feelings of security or insecurity (**Woods, Reed and Robinson, 1999; Woods, Reed and Collins, 2001b**).

The ***communication and social skills sub-scale*** consists of thirty items principally of the 'social skills' type focused around adaptive social behaviour and influenced by examples offered in the work of **Weitz (1974); Trower, Bryant and Argyle (1978)** and **Argyle (1988)**<sup>1</sup>. Its components include the human ability to communicate in various ways, both verbal and nonverbal, such as habitual facial expression (*facial expression, eye contact*); various aspects of proxemics (*orientation to others, body posture, expressive gestures, social distance*); paralinguistic features (*tone of voice, voice modulation, verbal delivery, conversational initiative, amount of speech, fluency*); aspects of conversational interaction (*turn-taking, listening skills, response to questions, conversational topics, egocentric conversation, frankness, expressing opinions*); potential conflict (*disagreement, arguments, making requests, assertiveness*); self presentation (*self presentation, social activities*); and interpersonal skills (*emotional control, relationship with others, ease of communication, sociability and support, deferring to others*) (**Woods, Reed and Collins, 2001c**).

The ***work and recreational activity sub-scale*** consists of twenty items. Here, paid work is not necessarily a feature and the section is concerned with those constructive activities with which a wide range of individuals could identify. These are described predominantly according to social skills or cognitive-behavioural theories. Items are *attendance, timekeeping, sickness absence, adaptability, concentration, team work, interest, quality of work, initiative, responsiveness, leisure pursuits, leisure and relaxation, planning leisure activities, suitability of selection, participation in leisure, hobbies and*

*interests, interest in shared leisure, motivation to shared leisure, gender interaction, potential sexual partners (Reed and Woods, 2000).*

The ***self and family care sub-scale*** consists of thirty items pertaining to diurnal and socially important areas such as personal hygiene, cooking and other aspects of self-care; care for other members of the family or group and family/group relationships (Leff, 1982; Connelly and Dilonardo, 1993; Reed and Woods, 2000; Evert *et al*, 2003).

The ***empathy sub-scale***, consisting of thirty items, was designed to assess the capacity of patients to empathise with others, more especially those who have been victimised. The development of empathetic skills is generally thought to be highly relevant for the treatment of forensic patients and has thus become a vital component of psychodynamic and cognitive-behavioural treatment programs for offender populations. It was developed using concept mapping techniques (Trochim 1989a, b; Johnsen, Biegel and Shafran, 2000) with a representative sample of multidisciplinary professionals working in the field of forensic mental health care. The scale measures empathetic features such as *imagining oneself in the life-world of another person; understanding the feelings of another person, distinct from those of oneself; sensitivity to others; expressing sympathy for the wishes and needs of another person; pleased for others; allowing others to express themselves; interest in social 'give-and-take'; dealing with conflict; sharing conversations; and curbing self-interest.*

Throughout the sub-scales, each behavioural component is analysed by breaking down standard communicative and interactive skills into stepwise increments. This has proved extremely valuable, giving a marked impetus to the normative model of assessment used (Reed and Woods, 2000). Thus, ordinal descriptions of some widespread human characteristics and skills which help individuals to succeed with others in the social environment are used. In addition to 'best case' and 'worst case' scenarios, the BEST-Index includes descriptive statements covering three intermediate levels of functioning. Each scalar item is thus sub-divided into five relatively fine-grained divisions, each representing a specific functional level. In **Table 1**, the method applied to all six subscales (comprising a total of 150 items) is exemplified on Item 17 of the communication and social skills subscale (Reed and Woods, 2000).

**Table 1: Communication and social skills subscale**

Item 17: *Egocentric conversation*; definition and illustration of stepwise assessment.

*Definition:* The patient replies is able to conduct a substantial part of his/her conversation without self-reference; only introducing personal issues when asked about these or when they are directly relevant to the discussion. (NB: Information for scoring this item may come both from psychiatric interview and from others involved – the patient, relatives, nurses or other caretakers).

*Detailed Note:* *On most occasions* means for at least twenty-five minutes of the observed half-hour of social interaction. *Occasionally* means for at least five minutes of the observed half-hour of social interaction. *Most of the time* means that the skill is sustained for most of the half-hour.

Score 1 (worst case)	Score 2	Score 3	Score 4	Score 5 (best case)
Always talks about him/herself all the time	Talks about him/herself <b>most of the time</b>	<b>Occasionally</b> talks about him/herself <b>most of the time</b>	Restrains talk about him/herself to socially appropriate levels <b>on most occasions</b>	Always talks about him/herself only when appropriate

**Previous studies using the Behavioural Status Index**

Studies using a revised and modified Behavioural Status Index (**Robinson, Reed and Lange, 1996; Woods and Reed, 1998; Reed, Woods and Robinson, 1999; Woods and Reed 1999a, b**), were taken up in forensic psychiatric contexts in 1995, using a large sample (**N=503; Woods, 2000**), and with the addition of a twenty-item 'social risk' sub-scale. For purposes of the study, social risk and 'dangerousness' were defined as: 'a propensity (on the part of the patient) to cause serious physical injury or lasting psychological harm to others' (**DHSS, 1975**).

## Validity and Reliability

The behavioural instrument has been substantially studied in the United Kingdom, and shows good construct validity, emergent predictive validity, excellent test-retest reliability and robust structure.

### Validity

**Face and content validity** of the BEST-Index have been established through study of the literature, by clinical consultations and by submitting draft versions to experts and clinicians in the subject areas and by means of item analysis. Relevant comments have been considered and appropriate modifications included in subsequent versions.

**Predictive validity** of global BEST-Index scores has been subjected to preliminary testing in the prediction of violent behaviour by Hollin and Holmes at Rampton Hospital (**Hollin and Holmes, 1999**). A sample of 117 patients who showed violent behaviour during 1996-1997 were compared with a matched control sample of 117 patients not displaying violent behaviour (total **N=234**). Omitting the median band (scores 221-260 on the BEST-Index), scorers in the two lower-scoring bands (with scores of  $\leq 220$  showing a tendency to worst-case on global BEST-Index scores) appeared significantly more frequently among the violent group ( $\chi^2 = 9.59$ , df 1,  $p < .01$ ). Conversely, scorers in the two higher-scoring bands (with scores of  $\geq 261$  on the BEST-Index) occurred significantly more frequently among the non-violent group ( $\chi^2 = 9.76$ , df 1,  $p < .01$ ). These are highly interesting results hinting at sensitive prediction of violence by the BEST-Index and will be examined further as longer-term and pooled cross-cultural data become available (**Reed, 2000**).

### Reliability

**Test-retest reliability** has been found to be satisfactory in a sub-sample of **n=100**. For repeated measures taken at two intervals of a fortnight each, scalar results were as follows: risk sub-scale  $r_s = .89$ ; insight sub-scale  $r_s = .84$ ; and communication and social skills sub-scale  $r_s = .88$ . For individual items, results again indicate acceptable levels of test-retest reliability for all of the seventy items, at  $r_s = .77$ . (**Woods and Reed, 1999b; Woods; Reed and Robinson, 1999; Woods, 2000**).

**Inter-rater reliability** studies have been undertaken with sub-samples of **n=37** for the risk and insight sub-scales and **n=35** for the communication and social skills sub-scale. Whilst



less robust than test-retest scores, results show the possibility of achieving inter-rater scores as high as +0.993 to unity when assessment is accompanied by high motivation, good inter-rater *rapport* and effective educational strategies. (**Woods and Reed, 1999b; Woods, 2000**).

**Internal consistency** is high for all the sub-scales: risk sub-scale  $\alpha = .90$ ; insight sub-scale  $\alpha = .97$ ; and social skills sub-scale  $\alpha = .95$  (**Woods and Reed, 1999b; Woods, 2000**).

## Item Analysis

Within a large clinical sample (**N=503; Woods, 2000**), all items correlate significantly with their respective sub-scale total scores. This indicates that each item is contributing positively to its specific scalar score. The risk sub-scale shows nineteen items to be correlating very highly ( **$p \leq .001$** , two-tailed) and the remaining item correlates at  **$p < .01$** , two-tailed. The insight sub-scales shows all items correlating very highly ( **$p \leq .001$** , two-tailed). Finally, for communication and social skills items, all thirty correlate very highly ( **$p \leq .001$** , two-tailed). Validity, reliability and error rate studies will continue as data accrue during progress of the cohort studies.

## Current developments

The Behavioural Status Index is currently being investigated in a large-scale thematic action involving parallel, complementary studies in three EU countries and one associated country<sup>1</sup> (Germany, the Netherlands, the United Kingdom, and Norway). The three-year study employs a longitudinal design with three measurements and its aim is to introduce and develop a unified approach to assessment of social risk and related behaviours in forensic psychiatric offender groups in the EU. It involves parallel cohort studies of offenders in forensic psychiatric care in each country (minimum **N=210**), using the Behavioural Status Index and cross-validators (the HCR-20, **Webster et al., 1997**; PCL-R

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<sup>1</sup> The EU funded thematic network programme named „Developing Community Skills in Offender Groups“ (acronym: COMSKILLS) is carried out by an international consortium led by Friedemann Pfäfflin, Germany. The consortium members are (in alphabetical order by country): Ian Brown, Mick Collins, Anne Dean, Alyson Kettles, Val Reed, Phil Woods, Helen Walker (United Kingdom); Roger Almvik, Dag Østby (Norway); Tom van Erven, Paul ter Horst (The Netherlands); Uwe Dönisch-Seidel, Thomas Ross (Germany).

(Hare, 1991); SCL-90-R<sup>2</sup> (Derogatis, 1992) and BDHI-D<sup>3</sup> (Lange, Deghani and Beurs, 1995). One purpose of this network is to introduce it into cross-border contexts, where it will allow systematic cross-cultural profiling of offenders and ongoing monitoring of their responses to rehabilitative therapy. It is now available in multilingual format suitable for use in the four abovementioned countries<sup>4</sup> and it will facilitate preparation of individual profiles for offenders which can accompany them throughout their subsequent treatment careers. Important elements of the study are improvement of carer assessments, related care planning and delivery, built-in distance learning for assessors, piloting of actuarial 'country profiles' and qualitative studies of carer development and clinical change processes involving analysis of contemporary nursing and other care records. It is posited that more effective and efficient rehabilitation of violent and aggressive offenders in the EU will result. The use of the Best-Index in longitudinal studies will not only provide individual profiles for offenders, but also a substantial database from which inferences may be drawn regarding causative factors and optimal treatments for specific disabilities.

This project's **developmental objectives** are (1) to complete cross-cultural studies using the Behavioural Status Index with other validators (HCR-20; PCL-R; SCL-90-R; BDHI-D); (2) to pilot development of cross-cultural actuarial databases and individual offender profiles using the above methods; (3) to evaluate utility, acceptability and generalising properties of the innovative programme within the European collaborative network; (4) to examine impacts of the change process on attitudes of care staff to

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<sup>2</sup> The SCL-90-R is a ninety-item self-report system inventory developed in the 1970s and 1980s by Leonard Derogatis and designed to reflect the psychological symptom patterns of community, medical and psychiatric respondents. It can be used to follow the patient's progress; and it can also be used as an outcome variable in clinical research. The system has received wide validation over a range of clinical conditions. It is a useful tool in outcome research because it allows quantitative (non-parametric) statistical analysis using a well-validated instrument.

<sup>3</sup> The Buss-Durkee Hostility Inventory (BDHI) is one of the most frequently-used self-report instruments for measuring aggression and a tendency towards aggressive behaviour in the United States. Patients score themselves dichotomously on three parameters: *overt aggression* (maximum possible score 16); *covert aggression* (maximum possible score 19); and *social desirability* (maximum possible score 5). A high overt aggression score is indicative of a high level of aggression expressed physically or verbally, or the existence of a high risk of such behaviour. Similarly, a high score on covert aggression could be indicative of a high degree of repressed aggression and possibly concomitant psychopathology, again indicating a high risk of aggressive or dangerous behaviour. Social desirability items are intended to measure the tendency to respond in accordance with socially acceptable norms and avoid responses which do not correspond with these. High scores on these items may be indicative of some degree of concealment or lowering of scores on overt-covert aggression items.

<sup>4</sup> The Behavioural Status Index (Reed et al., 2002) was recently translated into German (Thomas Ross, Friedemann Pfäfflin and Uwe-Dönisch-Seidel) Norwegian (Roger Almvik and Dag Østby) and a Dutch version has been in use since 1997 (Tom van Erven).

assessment and treatment, and on their ways of working with patients; and (5) to validate a related multilingual educational, assessmental, analytic and profiling infosystem for potential use throughout the EU.

**Clinical objectives** involve carrying out initial, intermediate and final assessments using the instruments, to do inter-rater reliability checks, to collect ordinal numerical data and, in the case of therapists, carrying out and writing-up initial, intermediate and final qualitative assessments. Clinical aspects are completed by collection of clinical archival data on each patient (that is, socio-demographic variables; family history; index offence; psychiatric history; recidivism record; treatment latency and therapy undertaken).

Informal reports taken from the 23 collaborating clinics and associated clinical units are encouraging, indicating that acceptance of the research scheme within the clinical sites appears to be satisfactory.

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