

ORIGINAL ARTICLE

# CBA-2.0 and CBA-H: Two broad spectrum questionnaires for psychological assessment in medical settings

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## Abstract

The acronym CBA stands for Cognitive Behavioral Assessment and indicates an overall approach of a group of researchers who developed questionnaires for clinical assessment. This paper presents two such questionnaires and reviews their application in medical settings. CBA-2.0 is a wide-ranging battery, useful to explore most adult cases that are referred for psychological assessment in a clinical setting. It has been used in the psychological assessment of patients with physical illnesses and in psychophysiological research. CBA-H (the Hospital format) is a 147-item questionnaire for both inpatients and outpatients suffering from physical illnesses. Because of the different time lag scales, CBA-H distinguishes between the emotional states and behavioral changes linked to the recent hospitalization (or disease diagnosis) and the patient's pre-existing characteristics. Both CBA-2.0 and CBA-H have been widely used in hospitals in Italy and have succeeded in reconciling the hospital world with clinical psychology interventions. Future development rely on translations and cross-cultural research.

## INTRODUCTION

The number of available psychological test for employment in medical settings is enormous. Many are specifically tailored for patients affected by specific diseases; others assess very specific constructs of great theoretical interest but of modest interest in professional routine practice. However, a few are wide spectrum, adequate, and useful in exploring generic psychological issues and employable with different diseases. For a long time, psychologists who operated in medical settings have made broad use of the MMPI; despite that MMPI was developed underlying psychiatric pathologies, a great and valuable quantity

of data has been collected internationally for medical setting use. In Italy, in the 1980s, the MMPI fell into disuse as the psychological world began to prefer the Battery CBA-2.0. The acronym CBA stands for Cognitive Behavioral Assessment and indicates an overall approach to clinical assessment, not only a series of tests.

The present paper intends to give a brief outline of two questionnaires for broad-spectrum assessment in medical settings. Both instruments have had remarkable diffusion in professional practice and have resulted in more than 50 research studies documented in Italian scientific journals or presented at medical and psychological conferences.

## CBA-2.0 BATTERY

The core of the CBA-2.0 Battery is a detailed autobiographical record card that guides the patient along the reconstruction of his or her personal history and any psychological problems currently experienced. This card allows for a self-administered standardized anamnesis. A series of scales and inventories develop around this core; some were devised by Italian researchers and some are translations of well-known questionnaires, such as the State-Trait Anxiety Inventory (STAI) and Eysenck Personality Questionnaire (EPQ). There are four validity indexes that allow decisions about whether the answers supplied by a specific patient can actually be considered valid and reliable. Overall, it is a wide-ranging battery, useful to explore exploring most adult cases that are referred for psychological assessment (Sanavio *et al* 1986).

The book *Un modello di valutazione psicologica in Medicina Riabilitativa (Psychological Assessment in Medical Rehabilitation)* (Bertolotti *et al* 1994a) illustrates normative data and analyses in medical centers for physical rehabilitation for cardiac respiratory and neuromotor diseases – including obesity, focal dystonia, alcoholism, and work-related diseases.

Over the years, many research studies have utilized the CBA-2.0 Battery in medical settings. Below is a list of the different problem issues focused on:

- Before and after coronary artery bypass.
- Before and after kidney transplantation.
- Blepharospasm.
- Bronchial asthma.
- Cancer.
- Cephalgia.
- Chronic obstructive pulmonary disease (COPD).
- Chronic pain.
- Epileptic patients.
- Fecal and urinary incontinence.
- Focal dystonia.
- Gynecological patients.
- Head injury patients.
- Health psychology.
- Heart transplantation.
- HIV patients.
- Impact of oxygen therapy on quality of life.
- Impact of anti-hypertension therapy on quality of life.
- Impact of low-dose Interferon in patients affected by chronic hepatitis C.
- Obesity.
- Obstructive sleep apnea syndrome (OSAS).
- Patients with gastroenterological problems.
- Patients undergoing dialysis.
- Pregnant women.
- Preventive and occupational medicine.
- Professional cramps.
- Rehabilitation medicine.
- Spasmodic torticollis.

- Smoking.
- Spina bifida.
- Stress.
- Type-A behavior.

CBA-2.0 has been created for offering a general psychological assessment useful and adequate for the clinical practice; nevertheless, CBA 2.0 has been useful in research on the differences of psychophysiological reactivity and on behavioral risk factors of cardiac diseases (Bertolotti *et al* 1994, 1995; Tavazzi *et al* 1986; Zotti *et al* 1991).

## CBA-H

The CBA-H (Hospital or Health) form was developed to allow a more rapid assessment, specifically contextualized in health and in somatic disease.

The CBA-H form consists of 147 short, simple items. The answer system is the True/False kind and is the same for all test sections. Administration takes about 10 to 20 minutes. CBA-H is articulated over four cards:

*Card A* (21 items): focuses on the present time (i.e. hospitalization or being told of a diagnosis) and investigates emotional state, anxiety and depression reactions, health fears and worries.

*Card B* (23 items): asks the patient to focus on the previous three months. The items examine emotional state, dysphoria, and possible psychophysiological disorders and stress.

*Card C* (61 items): asks the patient to describe his or her stable character and behavior. The items focus on the time before the disease, analyzing stable traits and characteristics: introversion/extroversion, neuroticism, social anxiety, speed and impatience, job involvement, hostility, hard driving, and irritability.

*Card D* (47 items): collects biographical information, explores lifestyle and possible health risk factors: stress events, working, affective and sexual life, smoking, eating and drinking, quality of sleep, physical exercise.

Because of the different time lags, these cards give the opportunity to distinguish between the emotional states and behavioral changes linked to the recent hospitalization (or disease diagnosis) and the patient's pre-existing characteristics.

After scoring the answers, useful patterns of deepening examination are drawn for the interpretation of the protocol and the definition of the deeper psychological examinations and the necessary eventual interventions.

CBA-H includes a software program that has been recently updated (PsySystem4, [www.giuntios.it](http://www.giuntios.it)), and which supplies both quantitative measures and in-depth examination patterns as well as suggestions for suitable interventions in health psychology and behavioral medicine. The program produces a writing report on psychological profile and hypothesis (cues) for the clinical interview.

## GISSI-2 RESEARCH

The origins of CBA-H are especially connected with the GISSI-2 (acronym for Italian Group for the Study of Survival following Myocardial Infarction) research, which in the 1990s assessed the efficacy of streptokinase. Part of the trial aimed at checking the influence of psychological and behavioral variables on the development of acute infarction. CBA-H was administered to 2,710 patients with acute infarction, recruited from 165 coronary units all over Italy. Although the patients were in extremely serious condition, the protocols were filled in and collected without any particular problems.

Many important results were obtained, but here we mention only one: the survival prognosis six months after the myocardial infarction. It is well known that in addition to the biological variables, some psychological variables do impact survival of infarction sufferers, although the mechanism through which this happens is not yet clear. Emotional, personality, and behavioral variables might have an indirect effect, and they are supposed to mediate adherence to therapy and to rehabilitation programs, changes in lifestyle, and reduction of behavioral risk factors.

A multicentered sub-project called GIPSY was included in the GISSI-2 study to systematically assess the impact of the psychological variables and their interaction with biological ones in survival after six months. A rich database emerged on 2,449 infarction sufferers who had filled in the CBA-H; 63 of them died during the six months of the study. Carinci and collaborators (1997) investigated the prognostic power of the survival variables measured by the CBA-H. They isolated two different patterns of risk: The first is given by pooling together the high scores on the Card B scales, vascular damage being equal. Patients reporting such a pattern called "vital exhaustion" at a time immediately preceding the heart attack have a mortality risk 2.2 times higher than other patients. The second pattern presents high dysphoria but with an absence of strong anxiety or vital exhaustion (vascular damage being equal). In that case, patients have a mortality risk 3.2 times higher than other patients.

Carinci and collaborators (1997) underlined that these two patterns can be considered as prognostic risk indexes at the same level as risk indicators such as hypertension, stress test outcome, and other important cardiologic assessments.

## OTHER STUDIES WITH CBA-H

The studies conducted on reliability and validity are illustrated in the original manual by Zotti *et al* (1989, 2000) and in its recent updated version (Zotti *et al* 2010).

With a wide collaboration of more clinical centers, CBA-H was administered to a wide sample of 4,888 subjects affected by different diseases that allowed

the researchers to separate scores in normative groups distended for age and gender.

The recent manual presents norms for the following conditions:

- Patients in rehabilitation following re-infarction, angina attacks, or heart failure.
- Patients with acute myocardial infarction.
- Patients with recent myocardial infarction.
- Patients with coronary artery bypass grafting.
- Patients with heart valve replacement.
- Patients with an implanted cardioverter defibrillator.
- Patients with chronic obstructive pulmonary disease (COPD).
- Patients with degenerative pathology of the nervous central system (i.e. amyotrophic or multiple sclerosis).
- Patients with gastric diseases (i.e., gastroduodenal ulcer, dyspepsia).
- Patients affected by different types of cancer (i.e., breast, lung, colon).
- Healthy volunteers of a prevention study. (Zotti *et al* 2010).

CBA-H has also been used in several other studies with diverse clinical populations:

- Before and after coronary artery bypass graft and heart transplantation.
- Cancer.
- Caregivers of patients in a permanent vegetative state (evaluation of their reactions).
- Chronic acute pain.
- Diagnosis of human immunodeficiency virus (HIV+).
- Ischemic cardiac patients before and after a cognitive behavioral intervention within a rehabilitation program.
- Quality of life evaluation among patients undergoing dialysis. (Zotti *et al* 2010).

## CONCLUSIONS

Both CBA-2.0 and CBA-H have been widely used in hospitals in Italy and have succeeded in reconciling the hospital world with psychological health and behavioral medicine interventions. In some hospitals, especially in rehabilitation centers, the traditional standard practice of referring a limited number of patients to psychological examination has been overcome. It is no longer the hospital ward doctor who refers the patient to the psychological and psychotherapeutic services/units. As a routine procedure, psychologists assess a larger number of patients soon after admission and then inform the doctor of possible problems and the patients' psychological and behavioral characteristics. This work pattern allows the optimal use of health psychology and behavioral medicine interventions while patients are still hospitalized.

For future research, it is the intention of the authors to seek translations and cross-cultural studies.

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