Comprehensive Assessment in Occupational Social Work: The Development and Validation of the Corporate Behavioral Wellness Inventory

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Objective: The objective is to report on the development and validation of the Corporate Behavioral Wellness Inventory (CBWSI), specifically designed for use by social workers in occupational social work. Method: One thousand and forty employees from different organizations in South Africa were subjected to the original validation research done on the CBWSI. Results: The results clearly indicate that the different subscales on the CBWSI have good reliability, that the scale is strong enough in terms of its measurement error characteristics to recommend it for use in occupational settings, and that the CBWSI appears to be acceptable in terms of its content and construct validity. Conclusions: The CBWSI is a new assessment tool specifically designed for social workers in occupational practice settings, that can be recommended to serve as a tool for assessing diverse employee strengths or to use as part of service delivery to employees.

Many industries are currently inviting social workers into their service programs to help employees and their families with personal, family, work, and environment problems. Occupational social work is the field of practice in which social workers attend to the human and social needs of the work community by designing and implementing appropriate interventions to ensure healthier individuals and environments. Industrial social work therefore refers to the utilization of social work expertise in meeting the needs of employees and also serving the broader organizational goals of the industry, namely to enhance the productivity of its employees to the highest level possible (Googins & Godfrey, 1987).

Part of the service social workers must render within organizations deals with thorough assessment of employees. In the delivery of services to employees, it is important to gain feedback information that can be used to evaluate the level of employee satisfaction within the organization, as well as

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the level of personal and social problems that the employees may experience that can have a negative influence on their productivity. This information can help social workers to direct prevention, enrichment, and counseling programs to the problems that are experienced the most within an organization.

Standardized assessment instruments can be extremely helpful in this process, but these should be multidimensional instruments that allow occupational social work practitioners easy access to assessments of a range of employee problems. According to Hudson and McMurtry (1997), such instruments should have several features: They should be designed to address problem areas most frequently encountered by social work practitioners; these problems should address areas of personal and social functioning, consistent with a person-in-environment perspective; and they should be able to measure a range of specific personal and social problems without requiring specialized training or a license.

This article introduces a multidimensional assessment tool called the Corporate Behavioral Wellness Screening Inventory (CBWSI) that enables practitioners to focus on the strengths of employees within the corporate environment in 27 different areas of corporate, personal, and social functioning. The major purpose of the article is to provide a description of the CBWSI and to present initial findings concerning the reliability and validity of its subscales. Suggestions are also provided for employing the inventory in practice settings and for conducting further research.

CBWSI Scale

The CBWSI is a paper-and-pencil, self-report measure that is used to evaluate employee strengths within a corporate environment in 27 different areas of corporate, personal, and social functioning. The CBWSI contains 185 items and requires 30 to 45 minutes to complete. Clients respond to each item via a 5-point category-partition scale. The subscales range in length from 5 to 9 items, with each subscale producing its own score. Subscale scores are used to develop a graphic profile of employee strengths that is then employed in organizational practice.

The principal aim of the CBWSI is to serve as a tool for assessing diverse employee strengths within an organization, either as part of a climate study to strategically plan prevention and enrichment programs in an organization or as part of service delivery to employees. The CBWSI can also be used for periodic reevaluation by having employees complete it during later phases of implementation of different programs. When used in this manner, it provides a description of change (progress, stability, or deterioration) that may have occurred during the period between administrations. It is not always

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necessary to use all the subscales of the CBWSI for the periodic reevaluations. After the specific problem areas have been defined in the original assessment done with the CBWSI, the subscales that present the problem areas can be used by themselves as repeated measures to assess change across time. The CBWSI can therefore be used to develop and support corporate wellness objectives within an organization. Finally, the CBWSI can very effectively be used to evaluate prevention, enrichment, and treatment programs by letting employees complete the CBWSI just before the termination of these programs to evaluate progress over the period the program was running.

Practitioners in the field of occupational social work in South Africa were consulted to decide on the areas that needed to be measured with a scale that could be used effectively within the working environment for prevention, enrichment, and counseling programs. Twenty occupational social workers were asked to list their main areas of interest with regard to the wellness of employees when they plan their different professional activities. The lists that were compiled by the social workers were used to decide on the final subscales. The lists were compared with one another; similar areas that were identified by the social workers were selected and named, and areas that were only mentioned by five or fewer social workers were excluded as not important enough to include in the CBWSI. The 27 subscales are briefly described below.

Leadership. This subscale measures the ability of the employee to be a leader in his or her work environment. It investigates the ability of the employee to lead, to guide his or her coworkers toward shared goals, to convince the workers to follow him or her, and to take control in a crisis.

Job satisfaction. This subscale measures the degree to which the employee experiences job satisfaction. It measures aspects such as the commitment the employee feels toward his or her job, the degree to which the employee is interested in his or her job, and the level of frustration the employee experiences in his or her job.

Equality. This subscale measures the degree of discrimination the employee experiences in the workplace. It deals with aspects such as the degree of victimization, equal opportunities, and equal standards that the employee experiences in his or her work environment.

Achievement orientation. This subscale measures the motivation of the employee to achieve. It relates to the tendency of the individual to approach goals that can enhance his or her competence. It also relates to an awareness of his or her own needs and potential and the striving of the employee to reach the goals he or she has set for himself or herself.

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Attitude toward change. This subscale measures the degree to which the employee feels positive about the changes that are taking place in his or her organization. It deals with aspects such as fear to transform, trust in the change process, and the readiness for change that the employee experiences.

Labor unions. This subscale measures the affect of labor unions on the employee's work performance and the degree of control or power that the labor union has over the employee. It measures the perceptions of the employee toward the labor unions in terms of looking after one's interests, respect for the opinion of the employee, and support that employee experiences from the unions.

Relationship with colleagues. This subscale measures the degree to which the employee has a positive relationship with his or her work associates. It measures aspects such as the trust the employee has in his or her coworkers, the degree to which the employee feels part of the team, and the respect he or she has for his or her coworkers.

Effective management. This subscale measures the degree to which the employee experiences management as effective. It measures aspects such as the degree of effective communication between management and coworkers, the manner in which management deals with conflict, and the degree to which the employee experiences management as people who care about him or her as a person.

Gender respect. This subscale measures the degree of gender respect the employee experiences in the workplace. It deals with aspects such as the telling of sexually offensive jokes, the display of sexually offensive pictures, and the demand of sexual favors from other employees in the workplace.

Job security. This subscale measures the degree to which the employee experiences job security. An employee who experiences job security feels that the work situation is certain, that there is still career opportunities for him or her in his or her job, and that he or she will not lose his or her job in the near future.

Working conditions. This subscale measures the degree to which the employee is positively affected by his or her working conditions. It deals with aspects such as the safety of the environment and the noise level and the temperature in the work environment that can have an effect on the employee's work performance.

Relationship with clients. This subscale measures the quality of the relationship the employee has with his or her clients. It deals with aspects such as the respect the employee has for clients, the way in which he or she deals with difficult clients, and his or her attitude toward clients in general.

Flexibility. This subscale measures the ability of employees to cope with multiple demands in the workplace. It mainly deals with the amount of stress

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tolerance that an employee has in terms of dealing with demands under difficult circumstances and general functioning under pressure.

Independence. This subscale measures the degree of independence an employee shows in his or her job. It deals with the ability of the employee to trust his or her own abilities, to work independently from others, and to make his or her own decisions.

Originality. This subscale measures the ability of the employee to think creatively in his or her work. It deals with the ability of the employee to create fresh and new ideas in the work environment and to be unique in his or her solutions.

Energy levels. The aim of this subscale is to evaluate the strength of the employee's energy levels. An employee with energy enjoys life and is cheerful, busy, and in control of his or her life.

Coping ability. This subscale measures the ability of the employee to cope with difficult circumstances. An employee who finds it difficult to cope experiences that his or her coping abilities have been under excessive stress for too long and that he or she wants to run away from his or her problems. Such an employee finds it difficult to sleep or relax and experiences concentration problems.

Anger management. This subscale measures the ability of the employee to manage his or her anger in a constructive manner. It deals with the way he or she acts when angry in terms of controlling, criticizing, scaring, and demanding behavior.

Alcohol use. This subscale measures the degree to which the employee experiences himself or herself to be in control of his or her drinking habits. It deals with the reasons why he or she drinks and the amount of problems he or she experiences because of his or her drinking.

Drug use. This subscale measures the degree to which the employee experiences that he or she has a problem with the use of illegal drugs, prescription drugs for nonmedical use, or habit-forming substances. It deals with the reasons why he or she uses drugs and the amount of problems he or she experiences because of his or her drug habits.

Financial management. This subscale measures the degree to which an employee manages his or her finances responsibly. Responsible management of finances implicates the drawing up of a budget and the spending of money according to the budget. Aspects such as planning, saving, punctual payments of accounts, and not buying on credit are all important in the managing of one's finances.

Self-esteem. This subscale measures the ability of the employee to feel secure and valued as a person. The employee with a good self-esteem thinks that he or she is important, special, loved, respected, and needed.

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Responsibility. This subscale measures the responsibility experienced by employees. A person with a strong sense of responsibility accepts responsibility for his or her own life, choices, and happiness. This person believes in the potency of his or her decision-making power and experiences a sense of control over circumstances in his or her life. A person with a strong sense of responsibility has a healthy level of independence and confidence in dealing with problems.

Relationship with partner. This subscale measures the experiences of the employee in his or her relationship with a romantic partner. It deals with aspects such as the level of trust experienced in the relationship, the communication between the partners, and the feelings of love and respect experienced.

Relationship with children. This subscale measures the experiences of the employee in his or her relationship with his or her children. It deals with aspects such as the love and respect the employee has for his or her children, the time he or she is spending with his or her children, and his or her experience of the demands that his or her children are placing on him or her.

Relationship with family. This subscale measures the experiences of the employee in his or her relationship with his or her family. It deals with aspects such as the way in which the employee experiences his or her family as a happy family who can sort out problems, who can communicate effectively, and who has healthy boundaries in place.

Relationship with friends. This subscale measures the experiences of the employee in his or her relationships with his or her friends. It deals with aspects such as the way in which the employee experiences his or her friends as people he or she can trust and respect, the level of support he or she gets from his or her friends, and the control his or her friends have on him or her.

The item content of the different subscales was designed to follow the principles of the domain-sampling model of measurement. According to this model there is theoretically an infinite number of items that can be used to create a scale that measures the different constructs. The skill lies in choosing a sample of this population of items that best represents the population. (See Nunnally & Bernstein, 1994, for more information on the domain model of measurement.) For the different subscales, item content was determined based on behaviors and emotions that have been associated with the different constructs, as reported in the literature.

The items are either structured as problematically worded statements about the different constructs (e.g., "Some coworkers receive special favors") or worded to reflect nonproblematic situations (e.g., "I am given equal opportunity to advance in my career"). The items use simple, straightforward language that is appropriate for use with employees from management levels to

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Answer Key

1 = Never
2 = Sometimes
3 = Half the time
4 = Often
5 = Always

Leadership

1._____I prefer to lead my co-workers.
2._____I like to guide my co-workers.
3._____I convince my co-workers to follow me.
4._____I like to show my co-workers the way by taking the lead.
5._____My co-workers accept my instructions.
6._____I take control in a crisis at work.
7._____I direct my co-workers towards shared goals.

Job Satisfaction

8._____I like my job.
9._____I find my job interesting.
10._____I feel happy about my job.
11._____I am committed to my job.
12._____My job gives me satisfaction.
13._____My job is a joy to me.

Equality

13._____I am given equal opportunity to advance in my career.
14._____At work I receive the same treatment as others.
15._____Management only promotes the career of certain workers.*
16._____I feel that I am accepted in the same way as the people I work with.
17._____At work I am treated in the same way as others.
18._____The same standards are applicable to everyone in the workplace.
19._____Some co-workers receive special favours.*

Figure 1: The first three subscales of the Corporate Behavioral Wellness Screening Inventory.

unskilled workers. The scale items were ordered with a table of random numbers on each subscale. Each item was then scaled to indicate a degree or level associated with the item. It was decided to use a 5-point category-partition scale to make it easier for unskilled workers to respond. Previous research indicated that unskilled workers can find it difficult to respond to a 7-point category-partition scale (Faul, 1997). Figure 1 presents an example of the first three subscales of the CBWSI.

The different subscales are scored to have values ranging from 0 to 100. Due to the CBWSI being a strength-oriented measurement tool, lower scores represent the relative absence of strengths in a specific area of corporate, personal, and social functioning, whereas higher scores represent the presence

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of strengths in that area. To score the different subscales on the CBWSI, one must first reverse score all the negatively worded items that are marked with an asterisk by changing a score of 1 to 5, 2 to 4, 4 to 2, and 5 to 1; a score of 3 is not changed. After all the problematically worded items are reverse scored, the total score, *S*, is computed:

$S = (\text{Sum}\,(Y) - N)\,(100) / [(N)\,(4)]$, where Y is the score for an item and N is the total number of items correctly completed by the respondent; omitted items are ignored. An advantage of this scoring formula is that it produces scores ranging from 0 to 100 regardless of the number of items that the respondent omits or scores improperly. Although the score range from 0 to 100 is always preserved, it is recommended that a score obtained from a respondent who fails to answer at least 80% of the subscale items should not be used.

In developing a scale for use in clinical practice, determining a meaningful cutting score for a scale is important. According to Hudson's (1982) methodology for establishing clinical cutting scores, "The issue is not whether we are completely free of any personal or social disfunction but whether the severity or magnitude of a problem reaches a level that it can be regarded as being clinically significant" (p. 121). To develop a useful cutting score, the assumption is made that a measurement tool will produce the same, or approximately the same, cutting score for a very large proportion of respondents. According to Hudson, if this assumption is made, it must be possible

> to locate a score along the measurement continuum that effectively divides or separates individuals, samples, or populations into at least two group: those who have a clinically significant problem in the area being assessed and those who do not have such a problem. (p. 121)

Scores above a cutting score on a strength-based continuum indicate little or no evidence of a clinically significant problem, and scores below a cutting score indicate a clinically significant problem in the area being assessed.

The basic methodology for establishing the cutting score for a newly developed measurement tool is described by Hudson (1982) and is similar to the methods used to investigate known-groups validity. The judgment of practitioners regarding the presence or absence of a serious problem in the specific area that is being measured is used as the basis for the establishment of clinical cutting scores. The steps involved can be described as follows:

1. Practitioners independently classify their clients as either having a serious problem in the area being assessed or as being free of such a problem.
2. The clients of the two different groups complete the newly developed scale.

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3. A separate cumulative frequency distribution for the scale scores is prepared for the two criterion groups.
4. The two cumulative frequency distributions are used to prepare two line graphs representing the distribution of each criterion group. These graphs are then plotted on a chart to locate the particular scale score, which if used as the cutting score would minimize the sum of false positives (the proportion of cases known to be free of the problem being assessed that were erroneously classified as having a problem when depending on the optimal cutting score) and false negatives (the proportion of cases known to have a problem in the area being assessed that were erroneously classified as being problem-free when depending on the optimal cutting score). That score is then chosen as the optimal cutting score.

The most important disadvantage of the above method used to create clinical cutting scores for the CBWSI is that the scores are sample dependent and can therefore vary from one sample to the next. To gain confidence in cutting scores, systematic research evidence of these scores needs to be gathered over years with different samples. Recommended clinical cutting scores for a new scale such as the CBWSI must therefore always be augmented by the clinical judgment of the user.

With the above limitation in mind, 13 different human resource practitioners at the organizations where the research was done were asked to complete a questionnaire on the employees who are known to them, indicating whether they had problems in the specific area reflected by the different subscales. They had to indicate whether the problems were, in their opinion, clinically significant. There was an option to mark uncertain if they did not know the group status of a specific person. Such a person was not included in the analysis. All the therapists had been trained in the use of the CBWSI and were therefore familiar with the conceptualization of the different constructs. After the practitioners had completed the questionnaire, the employees completed the CBWSI.

The preliminary clinical cutting scores are provided in Table 1 for all the subscales, along with the error classification for each of these subscales in terms of false negatives and false positives. The sample *N* for both criterion groups is also specified. It is clear from the table that the problem groups are small and also much smaller than the no-problem groups. Furthermore, some of the error classifications are high for certain subscales, specifically in terms of the false negatives. The results from these findings must therefore only be seen as a preliminary investigation into the clinical cutting scores for the different subscales. More data need to be gathered to get more precise information. It must however be noted that the data-gathering procedures for the establishment of clinical cutting scores are very complex and data must be gathered from practitioners over a long period of time to get a more

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TABLE 1: Expected Clinical Cutting Scores for the Subscales of the Corporate Behavioral Wellness Inventory

	n					
Subscale	*Problem Group*	*No Problem Group*	*Cutting Score*	*False Negative*	*False Positive*	*Overall Error*
Leadership	98	106	61	9	7	8
Job satisfaction	45	115	65	21	10	16
Equality	23	130	57	25	9	17
Achievement orientation	67	140	56	12	9	11
Attitude toward change	78	99	59	9	4	7
Labor unions	89	112	65	10	5	8
Relationship with colleagues	54	124	69	30	12	21
Effective management	88	99	69	7	5	6
Gender respect	35	160	62	28	12	20
Job security	78	98	65	29	14	22
Working conditions	37	55	60	6	4	5
Relationship with clients	29	134	58	21	10	16
Flexibility	45	90	59	9	5	7
Independence	65	78	59	8	5	7
Originality	34	89	60	12	9	11
Energy levels	78	132	62	13	8	11
Coping ability	69	79	60	6	4	5
Anger management	74	101	63	12	5	9
Alcohol use	47	140	75	21	7	14
Drug use	31	152	83	25	6	16
Financial management	78	103	61	8	3	6
Self-esteem	87	98	72	11	7	9
Responsibility	56	132	64	21	15	18
Relationship with partner	45	154	78	15	9	12
Relationship with children	35	121	55	13	5	9
Relationship with family	46	143	57	16	7	12
Relationship with friends	32	132	61	18	9	14
Mean	57	115	64	15	8	11

acceptable sample size. The preliminary cutting scores and their potential application are discussed in the CBWSI technical manual (Faul & Hanekom, 1999), which can be obtained from the author of this article.

Clients' scores are most readily comprehended and applied to planning and assessment tasks by presenting them in the form of a graphic profile. An example of such a profile is shown in Figure 2, which presents the scores obtained from an employee who participated in the testing of the instrument.

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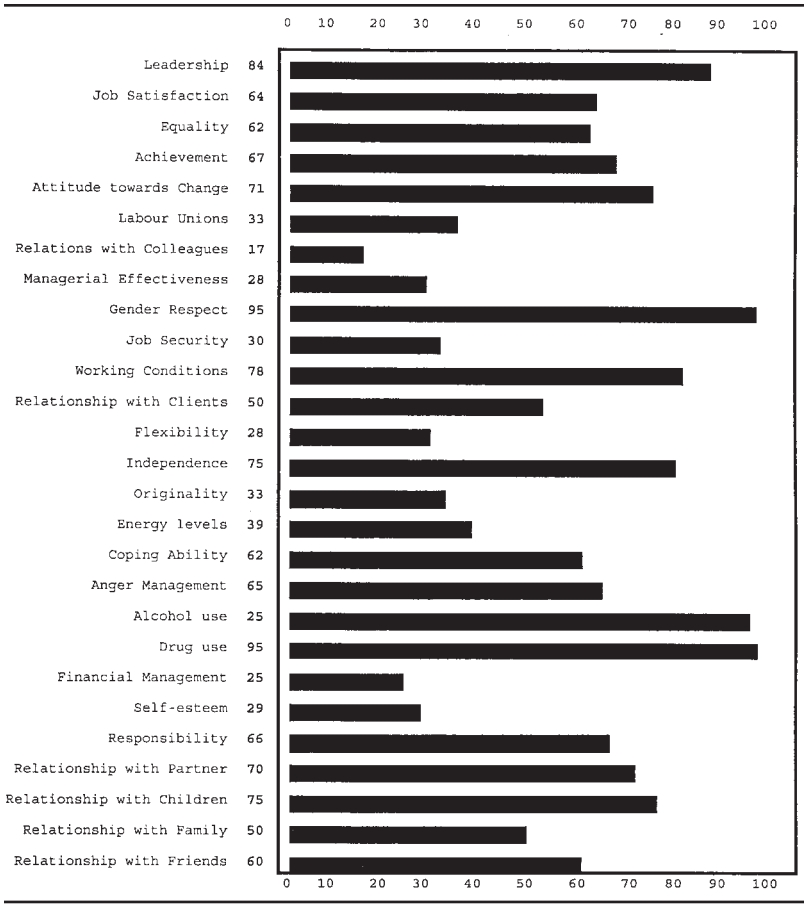

Figure 2: Example of the graphic profile of client scores obtained on the Corporate Behavioral Wellness Screening Inventory.

Although the scoring and graphing procedure for the CBWSI is not difficult, the inventory's length does mean that scoring takes considerable time. On average, it takes about 45 minutes to score the CBWSI manually and prepare a graphic profile such as the one shown in Figure 2. Especially within a corporate environment, where professional time is of the utmost importance, this can be seen as a disadvantage. However, the scale developers also developed a computer program that is used primarily for scoring and graphing purposes and can reduce the time for these tasks to only 5 minutes. The computer

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package is used to score the CBWSI, to prepare a graphic profile of an employee, and to write short explanatory notes on the interpretation of each subscale according to the cutting scores calculated for each subscale. The use of this computer package is also discussed in the CBWSI technical manual (Faul & Hanekom, 1999).

The remainder of this article describes an initial study conducted to obtain information about the psychometric performance of the CBWSI. After the research methodology is presented, major emphasis is given to findings on the reliability and validity of the inventory.

METHOD

Procedure

The research used to obtain initial validation information was based on a convenience sample of 1,040 employees from different corporate organizations in South Africa. These organizations include the South African Police Service, a consulting engineering firm, a factory that produces handicraft, and an educational institution. Although the aim was not to represent any specific and well-defined population or to describe this population, it can be stated that the population was nonclinical in the sense that the sample was not specifically selected from among individuals who have sought help for one or more specific problem. Convenience sampling better ensures heterogeneous responses to the CBWSI and reduces the risk of underestimating the reliability for a new instrument by small standard deviations and inter-item correlations within the scale (cf. Nunnally & Bernstein, 1994).

The study began with a letter sent to the heads of the human resource departments at the different corporate organizations, requesting their permission to ask their employees for voluntary participation in the study. After permission was granted, the research questionnaires were distributed among the employees.

The research questionnaire consisted of three documents. The first was a cover letter that requested voluntary participation in the study and ensured that personal responses would be anonymous and confidential. The second document was a brief survey form used to gather information on the respondents' age, gender, language, years of school, family income, marital status, number of times married, years with current spouse or partner, number of children, and family size. The third document in the research questionnaire was the CBWSI.

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Respondents

Of the 1,040 respondents, 56% were male, and 44% were female. The age of the respondents ranged between 18 and 68, with a mean age of 28.32 years. Most of the respondents (37%) had an education level between 8th and 11th grade, with 32% having a 12th grade education level. Only 24% of the sample had a tertiary education. The years of education for the sample ranged between 4 and 24 years, with a mean of 12.76 years and 65% of the sample who studied between 10 and 14 years. The mean monthly income for the sample was 3,125 South African Rands (more or less $500), which represents a fairly low monthly income. Most of the respondents (44%) were unmarried, with 40% being married. The mean number of times married was 1.14, and for those currently married, the mean number of years with the current spouse was 8.21. The average number of children was 2.3, and the mean family size of the respondents was 3.86.

Means across all respondents for each of the 27 subscales are shown in the second column of Table 2. The most important aspect of these results is the indication that the clinical cutting scores recommended in Table 1 are for most of the subscales consistent with the means of respondents in this study (which can be defined as a nonclinical group of respondents). For 24 out of the 27 subscales, the means for the nonclinical sample are higher than the recommended cutting scores. The only exceptions are the managerial effectiveness subscale, the labor unions subscale, and the leadership subscale, where the respondents' means were below the recommended clinical cutting scores. Recent studies in South Africa have found that these aspects are currently major problems within industrial organizations, which can provide a possible explanation for these low scores obtained with the nonclinical sample (cf. Bowen, 1997; Faul, 1998a, 1998b; Maeli, 1999). Means from a randomly selected representative sample from the bigger population will be needed to create normative scores for a nonclinical sample; however, these results already show some preliminary evidence that the recommended clinical cutting scores are effective in identifying clinical and nonclinical samples.

Reliability

Because the upper limit of the validity of any measurement device is determined by its reliability, the first step in validating the CBWSI was to examine its reliability. Coefficient alpha was used to estimate reliability because it has a number of highly desirable characteristics: It is easy to compute from the standard deviations of items and the standard deviation of the total score on a

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TABLE 2: Means, Reliabilities, and Standard Errors of Subscales

Subscale	n	M	SD	α	SEM
Leadership	1001	54	25	0.88	2.48
Job satisfaction	1011	75	22	0.87	1.90
Equality	1002	64	25	0.85	2.66
Achievement orientation	1014	75	25	0.90	2.20
Attitude toward change	1004	61	23	0.85	2.54
Labor unions	813	54	27	0.85	2.46
Relationship with colleagues	1006	71	21	0.86	2.17
Managerial effectiveness	1015	57	26	0.88	2.53
Gender respect	1009	89	21	0.91	1.30
Job security	980	69	25	0.80	2.24
Working conditions	1005	67	26	0.86	2.34
Relationship with clients	746	81	22	0.79	2.89
Flexibility	1009	69	23	0.78	3.02
Independence	1011	71	22	0.79	2.42
Originality	1003	64	22	0.84	2.50
Energy levels	1022	75	21	0.87	2.10
Coping ability	1013	75	21	0.81	2.26
Anger management	1003	75	25	0.88	2.47
Alcohol use	999	89	18	0.89	1.66
Drug use	985	94	15	0.95	1.21
Financial management	991	63	24	0.78	2.66
Self-esteem	1016	75	24	0.92	2.41
Responsibility	974	75	21	0.83	2.02
Relationship with partner	829	80	29	0.93	2.06
Relationship with children	588	80	24	0.85	1.88
Relationship with family	939	79	22	0.83	2.54
Relationship with friends	953	79	21	0.84	2.31
Mean				0.86	2.27

measurement scale, it is the mean of all possible split-half reliability coefficients, and it can be used to estimate parallel test reliability (Nunnally & Bernstein, 1994).

Each subscale was investigated separately, and the alpha coefficient for each subscale is shown in Table 2, which also reports the mean of each subscale, the number of respondents who completed the subscale (noting that some subscales are not applicable to all respondents), the standard deviation obtained from respondents who completed the subscale, and the standard error of measurement (SEM). The accepted standard for a scale that is to be used in practice is a reliability of .80 or greater (Nunnally & Bernstein, 1994).

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With regard to the SEM, a rule of thumb has been adopted that it should be approximately 5% or less of the range of possible scores when scored over a range from 0 to 100 (Hudson, 1991). Generally speaking, a good measuring device (from a measurement error point of view) has a large coefficient of reliability and a small SEM in relation to the overall range of possible scores.

The findings reported in Table 2 show that 23 of the 27 subscales had alpha coefficient of .80 or greater, with the 4 remaining subscales having reliabilities of .78 and .79, very near the target of .80. The alphas ranged between .78 and .95, with a mean alpha coefficient of .86. The SEM ranged between 1.21 and 3.02, with a mean SEM of 2.27. The CBWSI is being subjected to ongoing psychometric investigation, but the results already obtained suggest that it performs well enough to be useful in its present version.

Content Validity

For an instrument to be useful in assessing individual employee problems and strengths, it must prove to be a valid measure of the construct it was designed to evaluate. The first step is to determine the adequacy with which a specified domain of content is sampled to test for content validity. An item analysis, therefore, was conducted for the CBWSI subscales to determine whether its items significantly contribute to the total scores for the different subscales. Thus, each item on the different subscales was correlated with the total score on the subscale to which it belongs, as well as with the total scores on the other subscales (see Nunnally & Bernstein, 1994, for a detailed discussion of multiple-group confirmatory factor analysis as a form of item analysis that can be used to test for content validity).

Detailed findings concerning content validity are available from the author in the form of 27 tables of item-total correlations. These findings are summarized in Table 3 due to space limitations that prevent the inclusion of such a large number of tables. The table presents results of the percentage of factor-loading failures and successes across subscales. The percentage failure rates were obtained for each subscale by dividing the number of loading failures by the number of items in the specific subscale and then multiplying by 100. The loading success rate is simply 100 minus the failure rate (Hudson & McMurtry, 1997).

The results show a mean failure rate of 0.14% and a mean success rate of 99.86%. Because the subscale items do a good job of correlating with their own total scores and not correlating with the total scores of all other subscales, it is appropriate to conclude that the CBWSI has good content validity.

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TABLE 3: Percentage of Factor-Loading Failures and Successes for Subscale Item Loadings

Subscale	*Failure*	*Success*
Leadership	0.00	100.00
Job satisfaction	0.00	100.00
Equality	0.00	100.00
Achievement orientation	0.00	100.00
Attitude toward change	0.00	100.00
Labor unions	0.00	100.00
Relationship with colleagues	0.00	100.00
Effective management	0.00	100.00
Gender respect	0.00	100.00
Job security	0.70	99.30
Working conditions	0.00	100.00
Relationship with clients	1.39	98.61
Flexibility	0.00	100.00
Independence	0.00	100.00
Originality	0.00	100.00
Energy levels	0.00	100.00
Coping ability	0.70	99.30
Anger management	0.00	100.00
Alcohol use	0.00	100.00
Drug use	0.00	100.00
Financial management	0.00	100.00
Self-esteem	0.00	100.00
Responsibility	0.00	100.00
Relationship with partner	0.00	100.00
Relationship with children	0.00	100.00
Relationship with family	1.06	98.94
Relationship with friends	0.00	100.00
Mean for Scale	0.14	99.86

Construct Validity

Construct validity, as defined by Campbell and Fiske (1959), consists of both convergent and discriminant validity. The item analysis done to test content validity also serves as the basis for the testing of construct validity on the item level of analysis. At the item level of analysis, the CBWSI subscales correlate well with the things they are theoretically supposed to correlate with (their own subscale total scores): convergent validity. Moreover, the CBWSI subscale items tend not to correlate strongly with the things that, theoretically, they should not correlate with (the remaining subscale total scores):

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discriminant validity. Thus, the previous findings concerning content validity also provide good beginning evidence of both convergent and discriminant validity at the item level of analysis.

At the subscale level of analysis, it was hypothesized that the total scores of the different subscales would correlate poorly with the background variables, such as gender, age, years of education, income, times married, years with current spouse, number of children, and size of household. The reason for these a priori predictions is that we know of no theoretical basis for believing that these variables are related to the different constructs measured by the CBWSI subscales. The results are indicated in Table 4.

It is clear from the results that the background variables are good evidence of discriminant construct validity at the subscale level of analysis with a mean correlation of .09 over all the different subscales. Furthermore, all correlations are less than .35, meaning that each variable in the pair accounts for less than 12% of the variance in the other (as indicated by squaring the coefficient).

As a test of convergent validity, it would be desirable to predict a test for relationships between the subscales that are presumably related. Unfortunately, testing such relationships on members of a nonclinical sample may produce inappropriate conclusions with respect to the performance of the instrument with clinical populations. In addition, no one has a good empirical basis for making strong or weak predictions concerning the theoretical relationships between the 27 subscales of the CBWSI. The best solution is to provide the correlations between the subscales so some consideration may be given to these findings in relation to present knowledge in the field regarding interrelations between these various areas of corporate, personal, and social functioning of the employee (Hudson & McMurtry, 1997).

Table 5 shows the correlations between the subscales of the CBWSI. It is clear from the table that although it is difficult to conclude with predictions on the interrelationship between the different subscales, the correlations shown in the table provide evidence of the adequacy of the subscales relative to both convergent and discriminant validity.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK PRACTICE

The evidence in this article indicates that, first, the CBWSI subscales appear to be capable of producing scores with good reliability, under the appropriate circumstances of score heterogeneity. Second, the scale appears

(text continues on p. 68)

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TABLE 4: Discriminant Construct Validity at the Subscale Level of Analysis

Subscale	*Gender*	*Age*	*Education*	*Income*	*Number of Times Married*	*Number of Years with Current Spouse*	*Number of Children*	*Size of Household*	M
Leadership	–0.15	0.13	0.04	0.32	0.10	0.20	0.03	0.03	0.12
Job satisfaction	0.00	0.06	–0.02	0.15	–0.13	0.11	0.13	0.10	0.09
Equality	0.12	–0.04	–0.11	0.11	0.07	–0.08	–0.08	–0.13	0.09
Achievement orientation	0.00	–0.17	0.02	0.19	–0.08	0.23	0.09	0.03	0.10
Attitude toward change	–0.1	0.00	–0.16	–0.2	0.08	0.06	0.14	0.12	0.11
Labor unions	0.00	–0.03	–0.27	–0.26	–0.06	0.07	0.14	0.06	0.11
Relationship with colleagues	0.04	0.14	0.08	0.25	–0.05	0.17	0.09	0.02	0.10
Effective management	0.10	–0.09	–0.13	0.12	0.02	0.05	0.01	–0.01	0.06
Gender respect	–0.13	–0.02	–0.18	–0.17	–0.08	0.01	0.06	0.08	0.09
Job security	0.12	0.01	–0.18	–0.1	–0.12	0.06	–0.01	–0.04	0.08
Working conditions	–0.05	0.10	0.10	0.16	–0.16	0.15	0.05	0.12	0.11
Relationship with clients	–0.12	0.07	–0.06	–0.1	–0.04	0.09	0.13	0.14	0.09
Flexibility	–0.01	–0.08	–0.01	0.18	–0.14	0.02	–0.12	–0.1	0.08
Independence	0.06	0.04	0.15	0.08	–0.15	0.02	–0.13	–0.09	0.09
Originality	–0.16	0.09	0.03	0.13	–0.13	0.15	0.04	–0.02	0.09

Energy levels	–0.05	0.20	0.03	0.09	–0.05	0.26	0.13	0.01	0.11
Coping ability	–0.02	–0.12	–0.01	–0.06	–0.02	–0.12	–0.01	0.02	0.05
Anger management	–0.03	–0.14	–0.01	–0.06	–0.03	–0.08	–0.11	–0.12	0.07
Alcohol use	–0.24	–0.08	–0.07	–0.12	–0.03	–0.04	0.02	0.02	0.08
Drug use	–0.09	–0.05	–0.04	–0.16	0.10	–0.04	0.08	0.09	0.08
Financial management	0.14	0.04	0.09	0.31	0.06	0.07	–0.08	–0.17	0.12
Self-esteem	–0.08	0.19	0.03	0.03	–0.03	0.18	0.1	–0.01	0.08
Responsibility	–0.05	0.04	0.02	0.06	–0.12	0.14	0.00	–0.04	0.06
Relationship with partner	–0.21	–0.09	0.00	0.05	–0.09	–0.13	–0.19	–0.26	0.13
Relationship with children	–0.04	0.00	–0.01	–0.1	–0.04	0.05	0.10	0.15	0.06
Relationship with family	–0.03	–0.12	–0.02	–0.14	0.03	–0.04	0.07	0.16	0.08
Relationship with friends	–0.1	–0.03	–0.09	–0.23	–0.03	0.02	0.13	0.17	0.10
Mean for Scale	0.08	0.08	0.07	0.14	0.08	0.10	0.08	0.09	0.09

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TABLE 5: Lower Triangular Correlation Matrix for Subscale Scores

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*
1. Relationships with colleagues	—																										
2. Job satisfaction	0.57	—																									
3. Effective management	0.59	0.47	—																								
4. Equality	0.47	0.30	0.65	—																							
5. Gender respect	–0.19	–0.24	–0.09	–0.21	—																						
6. Job security	0.39	0.51	0.59	0.56	–0.02	—																					
7. Attitude toward change	0.17	0.34	0.25	0.21	–0.07	0.31	—																				
8. Labor unions	0.16	0.27	0.30	0.32	–0.17	0.42	0.37	—																			
9. Working conditions	0.40	0.30	0.41	0.37	–0.06	0.33	0.14	0.12	—																		
10. Relationship with clients	0.31	0.29	0.13	0.19	–0.30	0.20	0.25	0.22	0.03	—																	
11. Flexibility	0.36	0.32	0.25	0.35	–0.21	0.28	0.34	0.01	0.29	0.40	—																
12. Achievement orientation	0.36	0.44	0.27	0.37	–0.42	0.37	0.34	0.18	0.32	0.39	0.65	—															
13. Independence	0.18	0.07	–0.10	–0.05	–0.01	–0.08	0.03	–0.10	0.08	–0.01	0.32	0.16	—														
14. Originality	0.36	0.31	0.07	0.01	–0.02	0.08	0.18	–0.09	0.10	0.20	0.42	0.43	0.44	—													
15. Leadership	0.31	0.11	0.13	0.07	–0.03	0.00	0.01	–0.08	0.12	0.05	0.20	0.32	0.18	0.66	—												
16. Energy levels	0.54	0.49	0.41	0.27	–0.07	0.43	0.21	0.08	0.28	0.31	0.28	0.43	0.07	0.36	0.34	—											
17. Coping abilities	–0.33	–0.36	–0.19	–0.24	0.23	–0.30	–0.22	–0.07	–0.17	–0.22	–0.41	–0.42	–0.15	–0.16	–0.10	–0.48	—										
18. Anger management	–0.17	–0.28	–0.17	–0.28	0.27	–0.25	–0.30	–0.06	–0.04	–0.39	–0.37	–0.40	–0.01	–0.06	–0.03	–0.38	0.49	—									

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19. Alcohol use	–0.19	–0.11	–0.13	–0.13	0.35	–0.13	–0.07	0.04	–0.03	–0.22	–0.15	–0.17	0.07	0.07	–0.09	–0.33	0.39	0.51	—												
20. Drug use	–0.10	–0.20	–0.05	–0.09	0.51	–0.16	–0.05	–0.06	–0.07	–0.26	–0.26	–0.37	–0.14	–0.09	–0.01	–0.17	0.25	0.34	0.20	—											
21. Financial Management	0.24	0.20	0.19	0.15	–0.24	0.26	0.00	0.13	0.11	0.11	0.20	0.33	0.07	0.16	0.32	0.27	–0.18	–0.17	–0.34	–0.16	—										
22. Self-esteem	0.44	0.32	0.30	0.29	–0.02	0.42	0.20	0.15	0.26	0.25	0.20	0.30	0.03	0.26	0.27	0.66	–0.36	–0.39	–0.26	–0.15	0.37	—									
23. Responsibility	0.42	0.37	0.24	0.17	–0.21	0.40	0.29	0.11	0.18	0.36	0.41	0.46	0.09	0.38	0.31	0.61	–0.39	–0.37	–0.34	–0.25	0.40	0.74	—								
24. Relationship with partner	0.08	0.15	0.12	0.25	0.01	0.18	0.08	0.12	0.15	0.06	0.20	0.18	0.05	0.07	0.07	0.28	–0.25	–0.22	–0.12	–0.15	0.23	0.39	0.23	—							
25. Relationship with children	0.08	–0.01	0.04	–0.12	0.20	–0.04	–0.04	0.12	0.08	–0.07	–0.28	–0.31	0.01	–0.08	–0.16	–0.23	0.39	0.37	0.55	0.24	–0.21	–0.14	–0.18	–0.27	—						
26. Relationship with family	–0.15	–0.10	–0.20	–0.43	0.12	–0.27	–0.04	–0.01	–0.20	–0.18	–0.25	–0.38	–0.02	–0.06	–0.20	–0.39	0.34	0.34	0.38	0.19	–0.16	–0.33	–0.27	–0.32	0.47	—					
27. Relationship with friends	–0.32	–0.22	–0.18	–0.37	0.17	–0.25	–0.06	0.01	–0.27	–0.27	–0.40	–0.48	–0.16	–0.13	–0.20	–0.39	0.43	0.42	0.41	0.13	–0.36	–0.43	–0.35	–0.38	0.47	0.56	—				

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to be strong enough in terms of its measurement error characteristics to recommend it for use in occupational settings. Third, the CBWSI appears to be acceptable in terms of its content and construct validity.

At present the CBWSI is being tested at several organizations where employees with presenting problems are subjected to the scale. The CBWSI is also currently widely used in climate studies at organizations where the need for enrichment programs were identified. Additional research is planned to provide better information on subscale validities and to obtain refined clinical cutting scores for all 27 subscales. Also, studies are being undertaken to assess the concurrent criterion validity of the CBWSI using the known-groups method (cf. Nunnally & Bernstein, 1994).

As an assessment device, an ongoing disadvantage of the CBWSI will be the amount of time required to administer it and compute the subscale scores. However, practical use of the scale has shown that the scoring of the scale can be done very quickly with the computer package that was specifically designed for this purpose. The immediate availability of a profile graph for each client enhances the value of using the computer package for scoring the CBWSI.

Applications in practice have furthermore shown that the time used in administering the CBWSI can be reduced, especially when climate studies are done, by not letting the employees complete certain subscales of the CBWSI. Often, the goal of climate studies is to enhance organizational climate and not to enhance all elements of personal and social functioning of employees. To save time, some organizations have, for example, only asked employees to complete the subscales specifically relevant to change in organizational climate and have left out the subscales that dealt with individual strengths and relationship issues outside the workplace. For individual counseling of employees, practitioners have valued the scale as a whole, due to the comprehensive information provided. In instances such as this, the time used to complete the questionnaire is balanced out by the rich data provided on the graphs.

A second disadvantage of the CBWSI involves it being a self-report measure and therefore being vulnerable to all the shortcoming of such assessment devices, including problems arising from deliberate distortion of answers by the employees and diminished effectiveness with employees who have less cognitive abilities than others to use written instruments. Especially in a working environment, self-report measures are extremely vulnerable to fears from employees that they may lose their jobs if they are not functioning well, that they can be demoted if not functioning well, and that management may receive a bad report on their performance. The only way to overcome these disadvantage is for the practitioners to ensure that the employees who come

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for individual help trust that the information will be used to their benefit and not their disadvantage. When climate studies are done, the best way to ensure honest responses is to let employees complete the CBWSI on an anonymous basis.

The negatives stated above may be outweighed by the many positives that can come from the use of a multidimensional assessment tool. The multidimensional character of the scales is very valuable in helping to spot problems within the organizational climate of the organization, a very important aspect when it comes to the enhancement of job satisfaction and productivity. It furthermore helps corporate organizations to deal more holistically with their employees, by taking their corporate, personal, and social well-being into account. Finally, the multidimensional graphic profile has been reported to be useful in understanding the dynamic interplay between problem areas and between problems and strengths in areas of organizational, personal, and social functioning.

The CBWSI may also be useful for determining the effectiveness of preventive, enhancement, and therapeutic programs within an organization. Some of the organizations who currently use the CBWSI plan to assess their employees on a yearly basis to not only help them establish a profile of organizational climate and employee well-being, but also to indicate if the programs that are being implemented at these organizations to enhance the well-being of the employees are effective.

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