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Preliminary communication

The HCL-32: Towards a self-assessment tool for hypomanic symptoms in outpatients

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Abstract

Background: Bipolar disorders (BP) are frequently diagnosed and treated as pure depression initially; accurate diagnosis often being delayed by 8 to 10 years. In prospective studies, the presence of hypomanic symptoms in adolescence is strongly predictive of later bipolar disorders. As such, an instrument for self-assessment of hypomanic symptoms might increase the detection of suspected and of manifest, but under-treated, cases of bipolar disorders.
Methods: The multi-lingual hypomania checklist (HCL-32) has been developed and is being tested internationally. This preliminary paper reports the performance of the scale in distinguishing individuals with BP ($N=266$) from those with major depressive disorder (MDD; $N=160$). The samples were adult psychiatry patients recruited in Italy ($N=186$) and Sweden ($N=240$).
Results: The samples reported similar clinical profiles and the structure for the HCL-32 demonstrated two main factors identified as "active/elated" hypomania and "risk-taking/irritable" hypomania. The HCL-32 distinguished between BP and MDD with a sensitivity of 80% and a specificity of 51%.
Limitations: Although the HCL-32 is a sensitive instrument for hypomanic symptoms, it does not distinguish between BP-I and BP-II disorders.

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Conclusions: Future studies should test if different combinations of items, possibly recording the consequences of hypomania, can distinguish between these BP subtypes.

Keywords: Hypomania; Major depressive episode; Bipolar disorder; Hypomania checklist; Screening questionnaire

1. Introduction

The APA guidelines on the management of bipolar disorders (BP) state that bipolar-II disorder (BP-II) is frequently misdiagnosed as unipolar major depressive disorder (MDD) and as a result may receive inadequate or inappropriate treatment (American Psychiatric Association, 2002).

This notion is compatible with recent work in the field suggesting several reasons for the under-diagnosis and under-treatment of BP (Akiskal et al., 2000; Angst, 1998; Angst et al., 2003b; Benazzi, 2004; Ghaemi et al., 2002; Hirschfeld et al., 2003c; Judd and Akiskal, 2003; Lish et al., 1994; Szadoczky et al., 1998). First, individuals who experience depression do not always perceive hypomania as pathological, and as such do not spontaneously report it to clinicians (Scott, 2002). Also, the latter do not always make relevant direct inquiries of patients presenting with MDD (Angst and Gamma, 2002). The consequences are that the correct diagnosis and treatment may be delayed by 8–10 years (Hirschfeld et al., 2003c; Lish et al., 1994). Furthermore, the recognition of hypomania may require more subtle inquiry than detailed in the currently available structured diagnostic interviews (SCID, CIDI) and the diagnostic criteria in DSM-IV and ICD-10 may be less reliable and valid than previously believed. An expert group recently concluded that the current diagnostic criteria have high specificity but might have too low a sensitivity and that a greater focus on certain symptoms (such as activation levels) or less emphasis on symptom duration may improve recognition of those at risk of BP episodes (Angst et al., 2003a; Hantouche et al., 1998). Although not all researchers agree with these proposals, there is emerging evidence for a dimensional view of hypomania and mania (e.g. Angst et al., 2003a). As found previously in studies of depressive disorders (e.g. Flett et al., 1997; Haslam and Beck, 1994; Ruscio and Ruscio, 2000), Meyer and Keller's (2003) study failed to find evidence for latent classes for hypomania but did find evidence for a dimensional structure supporting the idea of an affective spectrum from 'normal' highs through to hypomania and mania (Angst, 1999; Korszun et al., 2004).

The above suggests that a self-assessment screening instrument for hypomania would be clinically useful and timesaving as well as aiding epidemiological research. Early attempts to screen for BP focused on the identification of individuals at risk of developing mood disorders in non-clinical populations. The measures targeted personality traits, did not explore the episodic nature of hypomania and failed to incorporate measures of the potential negative consequences of any changes in behavior, affect and cognition (e.g. Alloy et al., 1999; Depue et al., 1981; Meyer and Hautzinger, 2003). Other self-report measures have not been promoted as screening instruments but assess symptoms, such as the Self-Report Inventory for Mania (SRMI) by Shugar et al. (1992), the hypomania subscale of the symptom checklist 90-Revised (SCL-90R; Hunter et al., 2000) and the Brief Bipolar Disorder Scale (Dennehy et al., 2004), or rate the severity of symptoms in individuals with a diagnosis of BP, e.g. the Altman Self-Rating Scale (ASRM) and the Internal State Scale (Bauer et al., 1991; Geiselmann and Bauer, 2000). A specific screening instrument for BP is the Mood Disorder Questionnaire (MDQ) of Hirschfeld et al. (2000, 2003b); on the basis of its content it seems to be sensitive to identify BP-I disorder but probably less so for BP-II disorder (Benazzi, 2003b; Mago, 2001; Zimmermann et al., 2004). The MDQ was tested first in a tertiary care clinical sample and showed a sensitivity of 73% and a specificity of 90% (two thirds of the sample had BP-I); in a population sample (Hirschfeld et al., 2003a) the sensitivity was 28% and the specificity was 97% for BP.

These results and the demands for a screening instrument for the spectrum of bipolar manifestations (Benazzi and Akiskal, 2003b) encouraged us to transform the previously described hypomania checklist-20 (Allilaire et al., 2001; Angst, 1992;

Angst et al., 2003b; Hantouche et al., 1998) into a more elaborate self-administered questionnaire, the hypomania checklist-32 (HCL-32). The primary goal of the HCL-32 is to identify hypomanic components in patients with MDD in order to help the clinician to diagnose BP-II and other BP spectrum disorders (Angst et al., 2003a) presenting in psychiatric and general medical practice. A secondary goal is the development of a final potentially shorter multi-lingual version with established cut-off scores for hypomania.

2. Methodology

2.1. The hypomania checklist (HCL-32)

J.A. and T.M first conceptualized the HCL-32. It comprises a checklist of possible symptoms of hypomania that are rated yes (present or typical of me) or no (not present or not typical) by the subject. A German version was created that was translated into English by a professional translator and then re-translated back into German (by T.M. and J.A.). The English version was distributed for re-drafting by all co-authors and the final agreed-upon version was re-edited by an English psychiatrist (J.S.). This version served for the translations into French, Italian, Spanish, Portuguese, Swedish and Norwegian. Translation into each language followed the same process as outlined above, e.g. F.B. translated the English version into Italian, it was then independently translated back into English (to check the translation), and then a final Italian translation was produced. The Swedish version of the HCL-32 was created from two translations produced independently by R.A. and P.S. Consensus was reached on a final version that was subjected to the translation–re-translation process. (The English version of the HCL-32 is reproduced in Appendix A, and the Italian and Swedish versions in Appendices B and C).

2.2. The Italian study

The first study applying the HCL-32 for self-assessment was undertaken in a private practice outpatient clinic in Italy (by F.B.). This setting is more representative of mood disorders (apart from psychotic mood disorders) usually seen in clinical practice in Italy than tertiary care clinics. Two hundred and forty consecutive cases with a putative diagnosis of MDD were interviewed using the Structured Clinical Interview for DSM-IV Axis I Disorders-Clinician Version (SCID-CV; First et al., 1997), as modified by Benazzi and Akiskal (2003b) to increase the sensitivity to BP-II disorders. Cases were then classified as BP-I, BP-II, and MDD. When interviewed, 39% of the patients were in an episode of MDD and 61% were in remission. After the interview patients were given the Italian version of the HCL-32 and asked to complete the self-rating and return it by post. One hundred and eighty six subjects (77.5%) returned their questionnaire within 2 weeks. The data check, data entry and processing were undertaken in Zurich (by A.G. and J.A.).

2.3. The Swedish study

The psychiatric clinics of the University Hospital of Umea University (catchment area ca. 125,000) and Sunderbyn's hospital (catchment area ca. 140,000) participated in the study. Both clinics have units for affective disorders. The diagnostic process was similar at the two hospitals, including an extended semi-structured interview (based on DSM-IV criteria), performed either by the senior psychiatrists (R.A., P.S.) or by trained research nurses (September 2003–April 2004). For the diagnoses of a mood disorder the criteria of DSM-IV were adhered to, except for BP-II, where one of the DSM-IV criteria for hypomanic episode was left out: the criterion for duration. The psychiatrists reviewed all interviews performed by the nurses and all available records were studied. The HCL-32 was administered to patients with BP-I ($n=75$), BP-II ($n=67$), and major depression, recurrent type ($n=98$). Seven inpatients completed the questionnaire, but for all other subjects the HCL-32 was administered at an outpatient follow-up/consultation appointment or it was sent to the patient by post. Due to difficulties in filling out the questionnaire, data from two manic patients and a BP-II patient who was currently depressed were excluded from the study, as was data from individuals with schizoaffective disorder ($n=14$), and from one patient with BP-II disorder who withdrew consent.

2.4. Statistics

The analyses in this paper are restricted to the checklist of hypomanic items and, with the exception of a question about current mood state, do not include analysis of any other questions regarding the HCL-32 (see appendices). All analyses were done in STATA 8.2 for Windows. A "principal factors" factor analysis and subsequent varimax rotation (Harman, 1976) were applied to the Italian and Swedish samples separately and then to both samples combined. Factors with Eigenvalues greater than 1 were initially retained, but clinical considerations also decided the final number of factors. A total score was obtained by summing all items of the HCL-32. Subscale scores for each factor were obtained by summing all items that loaded higher than 0.4 on the corresponding factor. The reliability of HCL-32 total and subscale scores was assessed using Cronbach's alpha. Kruskal–Wallis tests were applied to continuous data. Gender and profiles of single (dichotomous) items were compared using χ^2 tests. Relative risk (risk or odds ratio) is given as an effect size measure for age and gender differences. Since these results are merely descriptive, no correction for multiple testing was applied. Spearman correlations were used to correlate current mood state (relative to usual mood state) and HCL-32 total and subscale scores. A Receiver-Operating-Characteristic (ROC) analysis yielded the sensitivity and specificity of the scales to discriminate between MDD and BP. The area under the ROC curve was also computed as a composite measure of discriminatory power. Since there were significant differences in age between the groups in the Swedish sample, we undertook three linear regressions, one each for the HCL total score and the two subscale scores, including patient group and age as predictors, in order to evaluate whether group differences remained significant when taking into account the effects of key sociodemographic variables.

3. Results

3.1. Description of samples

The two samples are described in Table 1. The Italian sample included 27 patients with BP-I, 97 with BP-II and 62 with MDD. There were significant gender differences in the sample, with the highest proportion of women among BP-II, and the lowest proportion among BP-I patients. The Swedish sample included 75 patients with BP-I, 67 with BP-II and 98 with MDD. Subjects with BP-II were significantly younger than those with MDD and BP-I.

3.2. Symptom profiles of diagnostic subgroups

3.2.1. Italian sample

Analysis of the % of BP and MDD patients endorsing the individual items of the HCL-32 demonstrated statistically significant between-group differences on 17 item ratings (see Fig. 1).

3.2.2. Swedish sample

Fig. 2 shows the % of MDD and BP subjects endorsing the individual items of the HCL-32. In

Table 1
Description of samples

	Total	MDD	BP-I	BP-II	Significance (p)[a]	Effect size[b] (relative risk (95% C.I.))	
						MDD vs. BP-I	MDD vs. BP-II
Italian sample							
N	186	62	27	97	ns		
% Women	61.8	56.5	40.7	71.1	0.009	1.6 (0.82–3.00)	0.77 (0.57–1.03)
Age (mean+S.D.)	43.2 (13.1)	43.9 (14.3)	43.7 (12.6)	42.6 (12.5)	0.70	1.0 (0.97–1.03)	0.99 (0.97–1.02)
Swedish sample							
N	240	98	75	67	ns		
% Women	58.8	63.3	54.7	56.7	0.48	1.2 (0.87–1.71)	1.2 (0.81–1.70)
Age (mean+S.D.)	51.8 (18.3)	59.4 (18.6)	53.0 (14.4)	39.2 (14.7)	0.0001	0.98 (0.96–0.99)	0.94 (0.92–0.96)

[a] χ^2 test for sex, Kruskal–Wallis test for age.
[b] Risk ratio for sex, odds ratio for age.

this larger sample, statistically significant between-group differences were recorded for 26 items.

3.3. Current psychological state and HCL-32 self-assessment

3.3.1. Italian sample

There were no significant associations (Spearman's correlations, all p-values >0.1) between HCL-32 total and the subjects' rating of current mental state (worse than usual–neither worse nor better than usual–better than usual). As shown in Table 2, the mean total HCL-32 scores did not differ between groups defined according to current mental state ($p=0.80$).

3.3.2. Swedish sample

There were no significant Spearman correlations between total and current mental state (all p-values >0.5). As with the Italian sample (see Table 2), there was no significant difference in mean total HCL-32 score in groups defined by current mental state ($p=0.90$).

3.4. Factor structure of the HCL-32

3.4.1. Italian sample

From the original 32 items of the HCL-32 the last two items asking about drug use and alcohol use had to be merged into one item, because of a misprint in the questionnaire that allowed only a single response to the two questions. A factor analysis of the 31 resulting items initially yielded 18 factors, the first three factors each had an Eigenvalue >1. However, a 2-factor solution was preferred, as only two items, related to sexual desire and activity, loaded substantially on the third factor. The Eigenvalues of the two factors, labeled "active/elated" and "risk-taking/irritable" hypomania were 5.4 and 3.1, respectively, and together accounted for 27.4% of the total variance (Table 3).

3.4.2. Swedish sample

Factor analysis initially yielded 15 factors, but only two had an Eigenvalue >1 (factor 1=5.8, factor 2=2.3). The factor structure was very similar to that

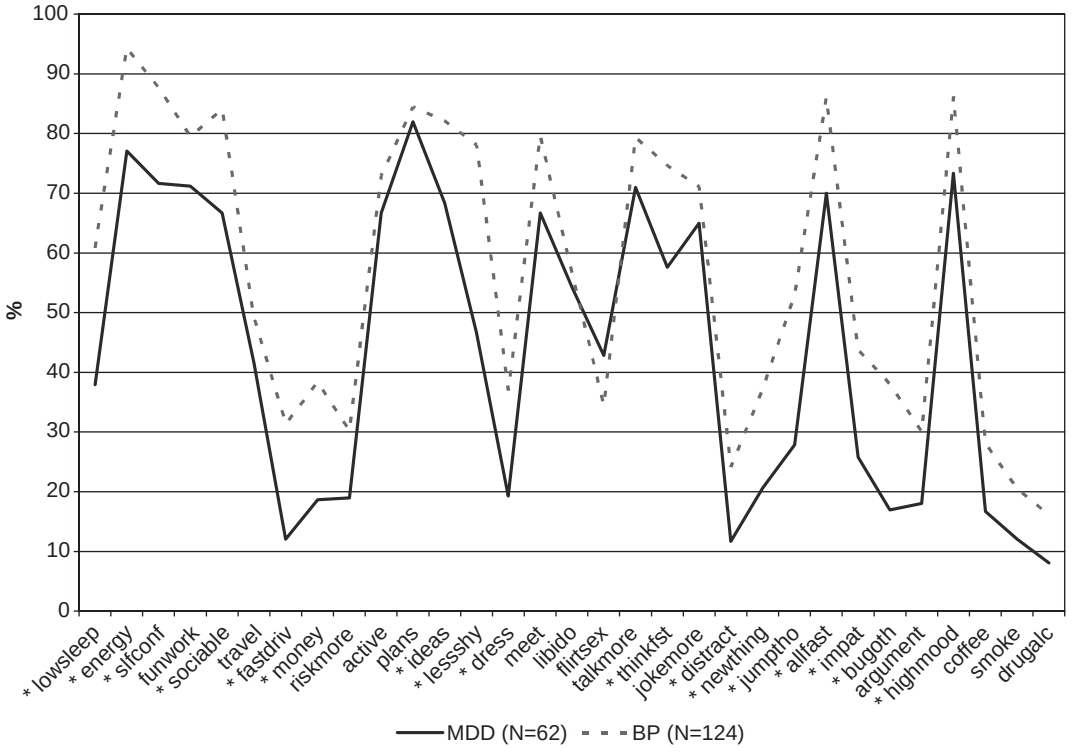

Fig. 1. Item profiles for mood disorder patients in the Italian sample. Stars indicate $p<0.05$, uncorrected for multiple testing.

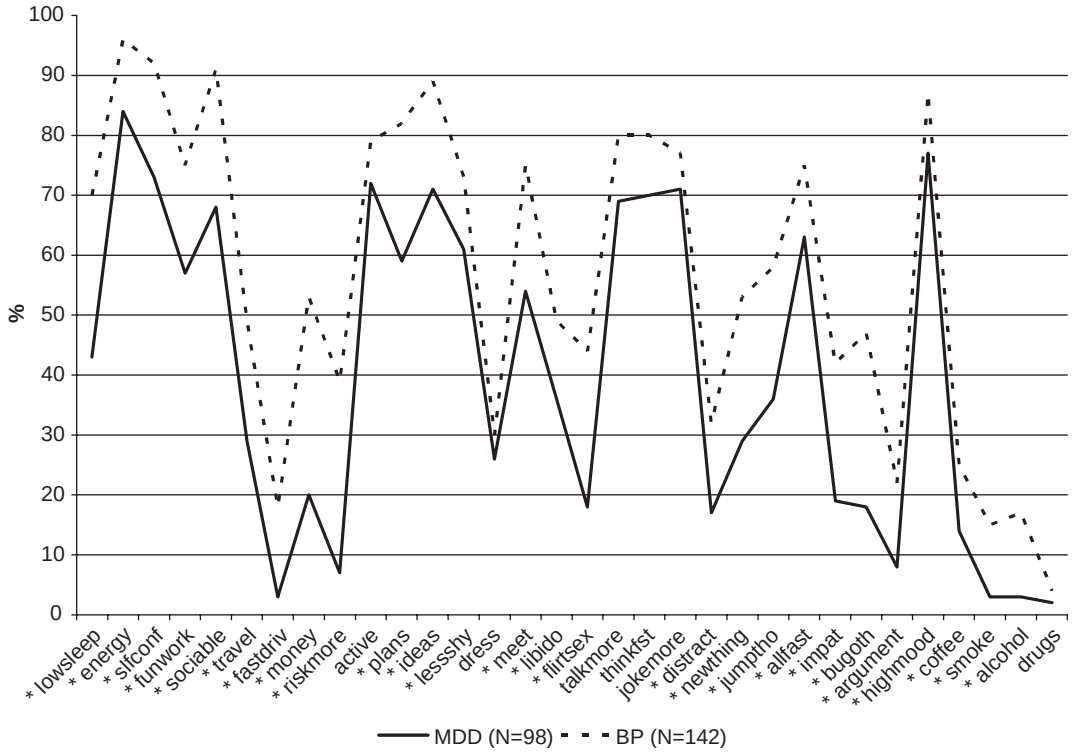

Fig. 2. Item profiles for mood disorder patients in the Swedish sample. Stars indicate $p<0.05$, uncorrected for multiple testing.

of the Italian sample, and the two factors received the same labels of "active/elated" and "risk-taking/irritable" hypomania (Table 3) and accounted for a similar proportion of the total variance (25.3%).

3.4.3. Combined sample

As the previous analyses gave similar results we decided to merge the samples for a further analysis. As shown in Table 3, the two-factor solution accounted for 26.8% of the variance and the Eigenvalues for factor 1 and factor 2 were 5.8 and 2.5, respectively.

3.5. Total and subscale scores of diagnostic subgroups

Subscale scores for each factor were obtained by summing all items that loaded higher than 0.4 on the corresponding factor.

Table 2
HCL-32 scores (mean (S.D.)) for different levels of current mood state

Current mental state	Italian sample		Swedish sample	
	N	HCL-32 total score	*N*	HCL-32 total score
Much worse than usual	5	16.0 (4.8)	12	17.3 (9.5)
Worse than usual	19	15.8 (5.6)	25	15.7 (6.1)
A little worse than usual	14	16.6 (3.0)	42	16.5 (5.8)
Neither better nor worse than usual	35	16.6 (6.2)	99	15.6 (6.2)
A little better than usual	22	15.2 (6.0)	38	16.3 (5.2)
Better than usual	32	17.0 (5.9)	31	16.1 (5.8)
Much better than usual	3	15.3 (3.1)	7	16.7 (4.5)
Significance (Kruskal–Wallis test)	–	0.80	–	0.90

Table 3
Factor structure of HCL-32 after varimax rotation in Italian and Swedish mood disorder patients

	Item	Factor loadings					
		Italian sample ($N=186$)		Swedish sample ($N=240$)		Samples combined ($N=426$)	
		Factor1 ("active/elated")	Factor2 ("risk-taking/irritable")	Factor1 ("active/elated")	Factor 2 ("risk-taking/irritable")	Factor 1 ("active/elated")	Factor 2 ("risk-taking/irritable")
1	I need less sleep	0.28	0.34	0.38	0.21	0.37	0.32
2	I feel more energetic and more active	0.56	0.05	0.55	0.01	0.56	0.08
3	I am more self-confident	0.56	0.23	0.59	0.03	0.59	−0.05
4	I enjoy my work more	0.50	0.02	0.47	−0.11	0.42	−0.06
5	I am more sociable (make more phone calls, go out more)	0.64	0.01	0.44	0.23	0.59	0.06
6	I want to travel and do travel more	0.40	0.06	0.40	0.14	0.43	0.05
7	I tend to drive faster or take more risks when driving	0.17	0.50	0.14	0.44	0.16	0.46
8	I spend more/too much money	0.27	0.38	0.30	0.39	0.30	0.40
9	I take more risks in my daily life (in my work and/or other activities)	0.26	0.29	0.23	0.48	0.24	0.42
10	I am physically more active (sport, etc.)	0.52	0.04	0.48	−0.07	0.50	−0.03
11	I plan more activities or projects	0.62	0.11	0.61	0.13	0.63	0.05
12	I have more ideas, I am more creative	0.69	0.04	0.69	0.04	0.71	0.03
13	I am less shy or inhibited	0.49	0.10	0.47	0.22	0.50	0.11
14	I wear more colourful and more extravagant clothes/make-up	0.31	0.23	0.31	0.21	0.32	0.19
15	I want to meet or actually do meet more people	0.63	0.06	0.43	0.23	0.52	0.10
16	I am more interested in sex, and/or have increased sexual desire	0.43	0.12	0.49	0.11	0.46	0.13
17	I am more flirtatious and/or am sexually more active	0.36	0.05	0.43	0.25	0.37	0.19
18	I talk more	0.38	0.11	0.60	0.14	0.53	0.15
19	I think faster	0.35	0.30	0.55	0.06	0.49	0.10
20	I make more jokes or puns when I am talking	0.58	0.10	0.54	−0.03	0.56	0.02
21	I am more easily distracted	0.23	0.52	−0.05	0.54	−0.13	0.53
22	I engage in lots of new things	0.40	0.21	0.39	0.25	0.40	0.19
23	My thoughts jump from topic to topic	0.01	0.57	0.13	0.45	0.08	0.49
24	I do think more quickly and/or more easily	0.51	0.03	0.51	−0.04	0.54	−0.02
25	I am more impatient and/or get irritable more easily	0.08	0.66	−0.06	0.63	−0.07	0.64
26	I can be exhausting or irritating for others	0.11	0.65	0.10	0.41	0.04	0.56
27	I get into more quarrels	0.06	0.65	0.01	0.49	−0.01	0.56
28	My mood is higher, more optimistic	0.53	0.24	0.55	−0.13	0.59	−0.17
29	I drink more coffee	0.12	0.31	0.07	0.21	0.09	0.24
30	I smoke more cigarettes	0.16	0.36	0.04	0.41	0.11	0.36
31	I drink more alcohol[a]	0.07	0.31	0.09	0.43	0.01	0.41
32	I take more drugs[a]			−0.10	0.24		

[a] Due to misprint in the Italian questionnaire, these two items were combined into a single item.

3.5.1. Italian sample

The first subscale consisted of 15 items and the second of 6 items. Both total and subscale scores were significantly lower in MDD than in BP patients. The BP-I patients had the highest scores on the risk-taking/irritable subscale, while BP-II patients scored highest on the active/elated subscale. The risk-taking/irritable subscale and the total score discriminated between MDD and BP subjects. None of the scales discriminated between BP-I and BP-II patients (see Table 4). There were no statistically significant gender differences in HCL-32 total or subscale scores (all p-values >0.45, Kruskal–Wallis test).

3.5.2. Swedish sample

The first subscale consisted of 16 items and the second of 9 items. As in the Italian sample, total and subscale scores were significantly lower in MDD than in BP patients. Again, BP-I patients had the highest scores on the risk-taking/irritable subscale, and BP-II patients scored highest on the active/elated subscale. In contrast to the Italian data, all scales discriminated between MDD and BP subjects. Interestingly, in the Swedish data, the risk-taking/irritable subscale discriminated between BP-I and BP-II patients (see Table 4). There were no significant gender differences in HCL-32 total or subscale scores (all p-values >0.10, Kruskal–Wallis test). A linear regression demonstrated that age was significantly negatively related to HCL-32 scores, but did not alter the pattern of significant differences in HCL-32 scores between diagnostic groups.

3.6. Reliability

3.6.1. Italian sample

The first subscale had a Cronbach's alpha of 0.83, the second subscale a Cronbach's alpha of 0.75, and the total scale had a Cronbach's alpha of 0.82.

Table 4
Total and subscale scores in mood disorder subgroups

Italian sample	*N*	Total score (31 items)	Subscale 1 score ("active/elated" hypomania) (13 items)	Subscale 2 score ("risk-taking/irritable" hypomania) (6 items)
MDD	62	13.37 (5.56)	9.46 (4.25)	1.07 (1.46)
BP	124	17.47 (5.05)	11.26 (3.04)	2.16 (1.85)
BP-I	27	18.15 (5.54)	10.86 (3.14)	2.54 (1.93)
BP-II	97	17.28 (4.93)	11.37 (3.03)	2.05 (1.82)
Total	186	16.12 (5.55)	10.66 (3.59)	1.80 (1.80)
p-values Kruskal–Wallis test				
BP vs. MDD		0.0002	0.02	0.0001
BP-I vs. MDD		0.003	0.25	0.001
BP-II vs. MDD		0.0005	0.01	0.0006
BP-I vs. BP-II		0.58	0.52	0.27
Swedish sample	***N***	**Total score (32 items)**	**Subscale 1 score ("active/elated" hypomania) (16 items)**	**Subscale 2 score ("risk-taking/irritable" hypomania) (9 items)**
MDD	98	12.84 (5.35)	10.06 (4.29)	1.15 (1.33)
BP	142	18.20 (5.56)	12.46 (3.42)	2.90 (2.26)
BP-I	75	18.32 (5.68)	12.21 (3.30)	3.33 (2.40)
BP-II	67	18.06 (5.45)	12.73 (3.55)	2.42 (2.00)
Total	240	16.01 (6.07)	11.48 (3.97)	2.19 (2.11)
p-values Kruskal–Wallis test				
BP vs. MDD		0.0001	0.0001	0.0001
BP-I vs. MDD		0.0001	0.0006	0.0001
BP-II vs. MDD		0.0001	0.0001	0.0001
BP-I vs. BP-II		0.8	0.2	0.03

3.6.2. Swedish sample

The first subscale had a Cronbach's alpha of 0.85, the second had a Cronbach's alpha of 0.72, and the total scale had a Cronbach's alpha of 0.86.

3.7. Sensitivity and specificity (ROC analysis), and predictive power

3.7.1. Combined sample

A primary goal of the HCL-32 is the increased recognition of BP-II among subjects meeting criteria for MDD. The ROC curves in Figs. 3–6 show the ability of the HCL-32 total and subscale scores to discriminate between MDD and all BP cases, MDD and BP-I, and MDD and BP-II. Data on sensitivity and specificity of the total scale suggest that a score of 14 or more yields the best combination of sensitivity (80%) and specificity (51%) to distinguish between BP and MDD. The positive and negative predictive power for this cut-off was 73% and 61%, respectively. For the recognition of BP-I as compared to MDD, a score of two or more on the "risk-taking/irritable" hypomania subscale of the HCL-32 had a sensitivity of 76%, a specificity of 62%, and positive and negative predictive power of 76% and 57%, respectively. However, the HCL-32 subscales did not distinguish between BP-I and BP-II disorders (see Fig. 6).

4. Discussion

The impetus for this study was the desire to develop a robust self-assessment screening tool for BP that could be used across countries and continents. For this reason great care was taken in the design and selection of questions on hypomanic symptoms, and the translation–re-translation process was used to ensure that the subject could rate items independently and without ambiguity. The samples in both Italy and Sweden used 'softer' criteria for BP reflecting the increasing commitment of the researchers to the concept of the bipolar spectrum. Despite the use of broader and slightly differing criteria for BP-II, the HCL-32 still showed good discrimination between the unipolar and bipolar samples. The cut-off of 14 offered the best trade off between sensitivity (true bipolars) and specificity (true non-bipolars) with the total scale showing a sensitivity of 80% and a specificity of 51% for both BP. The sensitivity is slightly higher and specificity slightly lower than reported for the MDQ in a clinical setting. However, it may be an advantage for a screening tool to have a higher sensitivity than specificity (Zimmermann et al., 2004). Furthermore, the scale had a positive predictive value of 73% and a negative predictive value of 63%, suggesting that

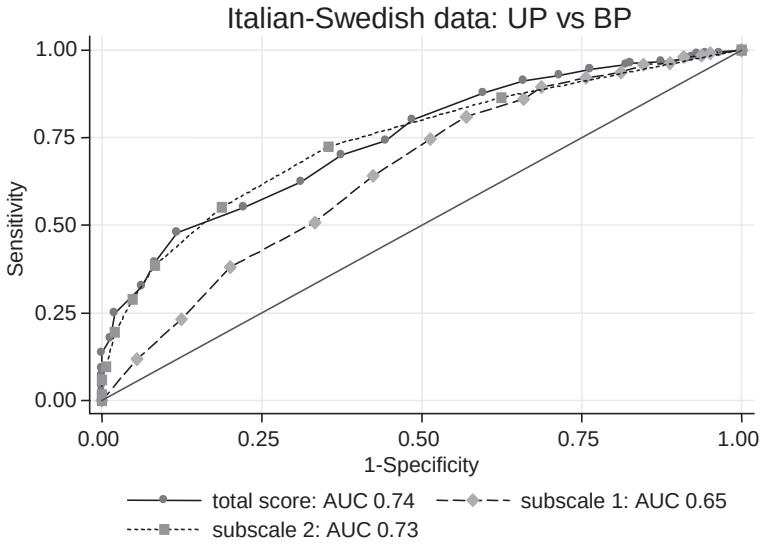

Fig. 3. ROC curves showing the power of HCL-32 total and subscale scores to discriminate between unipolar (UP) and bipolar (BP) patients (AUC=area under curve).

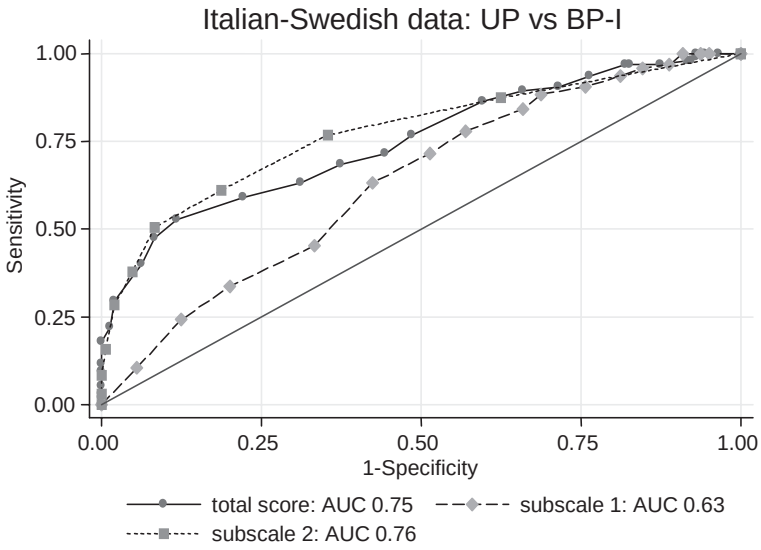

Fig. 4. ROC curves showing the power of HCL-32 total and subscale scores to discriminate between unipolar (UP) and bipolar-I (BP-I) patients (AUC=area under curve).

the discriminatory power of the scale would be maintained to an acceptable degree if the scale was applied in community settings where the overall rates of BP would be lower than in the clinical settings we report here. Interestingly and importantly, current mental state (worse than usual–neither worse nor better–better than usual) had no impact on the self-assessment of hypomanic symptoms. This was the case although quite a number of Italian outpatients were currently depressed. The result suggests that the scale can be used for screening purposes even in currently symptomatic patients

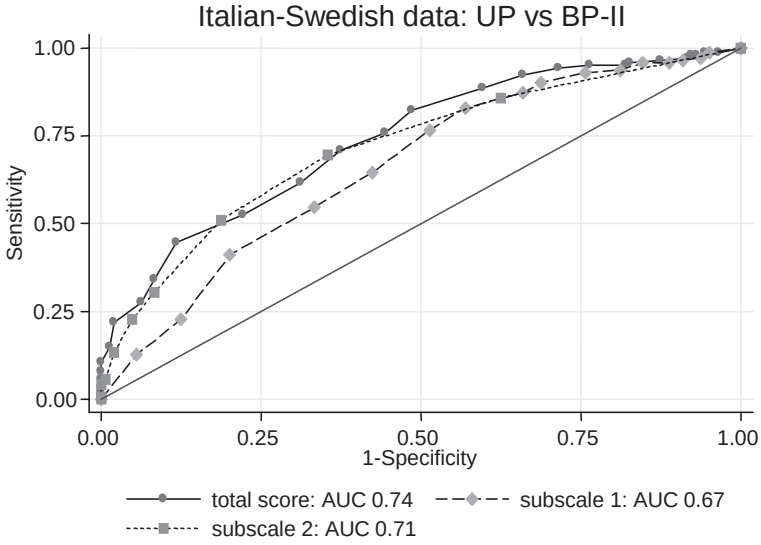

Fig. 5. ROC curves showing the power of HCL-32 total and subscale scores to discriminate between unipolar (UP) and bipolar-II (BP-II) patients (AUC=area under curve).

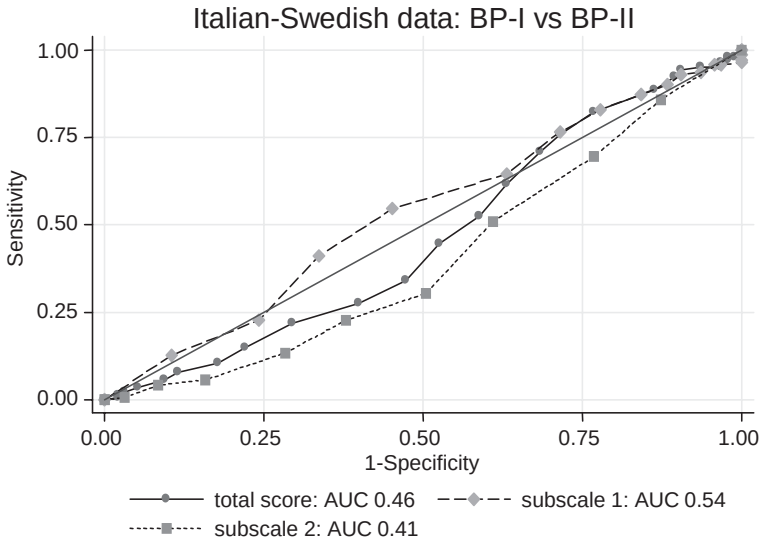

Fig. 6. ROC curves showing the power of HCL-32 total and subscale scores to discriminate between bipolar-I (BP-I) and bipolar-II (BP-II) patients (AUC=area under curve).

(Benazzi, 2003a). The utility in a non-patient community sample of the HCL-32 will be an important future test of the questionnaire.

Analyses of the Italian and Swedish samples independently and together gave similar two-factor structures of hypomania, an "active/elated" factor and a "risk-taking/irritable" factor. The active/elated factor included mainly overactivity, mood elation and improved thinking. The risk-taking/irritable factor included symptoms of risk taking behavior, anger/irritability, and flight of ideas. This factor structure is comparable to the one described by Hantouche et al. (2003) on the basis of the original shorter version of the hypomania checklist (HCL-20) used in the French multi-center EPIDEP study. It is also in line with the factor analysis of hypomania based on the Mood Disorder Questionnaire (Benazzi and Akiskal, 2003a). Clinically, it can be seen that the active/elated subscale measures those at risk for hypomania who may be less likely to recognize the symptoms as pathological. The risk-taking/irritable subscale taps into features more commonly associated with treated BP disorders. However, the two subscales used independently and together did not consistently differentiate the three patient subgroups (MDD, BP-I, BP-II) so further testing will be required to establish how useful the scales are in their own right and whether they can be used as course specifiers within the diagnostic category.

4.1. Limitations

The work presented here on the HCL-32 has strengths and weaknesses. The strength lies in the fact that the HCL-32 has been developed in a way that will allow its use in different languages, and we are gathering data on samples in a number of countries and settings, which will allow further revisions of the scale. The weakness is that it will take much time to do all these studies in order to arrive at a final conclusion about the sensitivity and specificity of this tool, so the current data must be seen as preliminary. The main drawback of the current study is that it may not have adequate power to determine whether the failure of the HCL-32 to discriminate between different subtypes of BP is a function of inadequate statistical power or an inherent characteristic of the structure of the self-assessment scale. A further issue is that differing criteria and selection methods were used to ascertain the clinical samples at the different centers. However, this may be an advantage as it increases the generalisability of the results and adds confidence that the two subscales identified from the factor analysis of the HCL-32 are meaningful and reproducible.

Appendix A. HCL-32 questionnaire, English version

Personal details: Age ☐☐ years

Male ☐ Female ☐

Centre ☐☐☐

Number ☐☐☐

Energy, activity and mood

At different times in their life everyone experiences changes or swings in energy, activity and mood ("highs and lows" or "ups and downs"). The aim of this questionnaire is to assess the characteristics of the "high" periods.

1) First of all, how are you feeling today compared to your usual state:

(*Please mark only ONE of the following*)

Much worse than usual	Worse than usual	A little worse than usual	Neither better nor worse than usual	A little better than usual	Better than usual	Much better than usual
☐	☐	☐	☐	☐	☐	☐

2) How are you usually compared to other people?

Independently of how you feel today, please tell us how you are normally compared to other people, by marking which of the following statements describes you best.

Compared to other people my level of activity, energy and mood...

(*Please mark only ONE of the following*)

... is always rather stable and even	... is generally higher	... is generally lower	... repeatedly shows periods of ups and downs
☐	☐	☐	☐

3) Please try to remember a period when you were in a "high" state.

How did you feel then? Please answer all these statements independently of your present condition.

In such a state:

	Yes	No
1. I need less sleep	☐	☐
2. I feel more energetic and more active	☐	☐
3. I am more self-confident	☐	☐
4. I enjoy my work more	☐	☐
5. I am more sociable (make more phone calls, go out more)	☐	☐
6. I want to travel and/or do travel more	☐	☐
7. I tend to drive faster or take more risks when driving	☐	☐
8. I spend more money/too much money	☐	☐

Appendix A. (*continued*)

In such a state:

		Yes	No
9.	I take more risks in my daily life (in my work and/or other activities)	☐	☐
10.	I am physically more active (sport etc.)	☐	☐
11.	I plan more activities or projects	☐	☐
12.	I have more ideas, I am more creative	☐	☐
13.	I am less shy or inhibited	☐	☐
14.	I wear more colourful and more extravagant clothes/make-up	☐	☐
15.	I want to meet or actually do meet more people	☐	☐
16.	I am more interested in sex, and/or have increased sexual desire	☐	☐
17.	I am more flirtatious and/or am more sexually active	☐	☐
18.	I talk more	☐	☐
19.	I think faster	☐	☐
20.	I make more jokes or puns when I am talking	☐	☐
21.	I am more easily distracted	☐	☐
22.	I engage in lots of new things	☐	☐
23.	My thoughts jump from topic to topic	☐	☐
24.	I do things more quickly and/or more easily	☐	☐
25.	I am more impatient and/or get irritable more easily	☐	☐
26.	I can be exhausting or irritating for others	☐	☐
27.	I get into more quarrels	☐	☐
28.	My mood is higher, more optimistic	☐	☐
29.	I drink more coffee	☐	☐
30.	I smoke more cigarettes	☐	☐
31.	I drink more alcohol	☐	☐
32.	I take more drugs (sedatives, anxiolytics, stimulants...)	☐	☐

4) Did the questions above, which characterise a “high”, describe how you are...
(*Please mark only ONE of the following*)

··· sometimes? ☐ ⇒ *if you mark this box, please answer all questions 5 to 9*

··· most of the time? ☐ ⇒ *if you mark this box, please answer only questions 5 and 6*

I never experienced such a "high" ☐ ⇒ *if you mark this box, please stop here*

Appendix A. (*continued*)

5) Impact of your "highs" on various aspects of your life:

	Positive and negative	Positive	Negative	No impact
Family life	☐	☐	☐	☐
Social life	☐	☐	☐	☐
Work	☐	☐	☐	☐
Leisure	☐	☐	☐	☐

6) Other people's reactions and comments to your "highs".
How did people close to you react to or comment on your "highs"?
(*Please mark ONE of the following*)

Positively (encouraging or supportive)	Neutral	Negatively (concerned, annoyed, irritated, critical)	Positively and negatively	No reactions
☐	☐	☐	☐	☐

7) Length of your "highs"as a rule (on the average):
(*Please mark ONE of the following*)

☐ 1 day
☐ 2–3 days
☐ 4–7 days
☐ longer than 1 week
☐ longer than 1 month
☐ I can't judge/ don't know

8) Have you experienced such "highs" in the past twelve months?

Yes ☐ No ☐

9) If yes, please estimate how many days you spent in "highs" during the lasttwelve months:

Taking all together: about ☐☐☐ days

Appendix B. 32 HCL items, Italian version

	Si	No
1. Ho meno bisogno di sonno	□	□
2. Ho più energie e sono più attivo	□	□
3. Ho più fiducia in me	□	□
4. Mi piace di più il mio lavoro	□	□
5. Sono più socievole (telefono di più, esco di più)	□	□
6. Voglio viaggiare e viaggio di più	□	□
7.Tendo a guidare più velocemente o guido in modo più rischioso	□	□
8. Spendo di più/spendo troppi soldi	□	□
9. Rischio di più nella vita quotidiana (nel mio lavoro e/o in altre attività)	□	□
10. Sono fisicamente più attivo (sport e altre cose)	□	□
11. Penso di fare più cose e/o faccio più progetti	□	□
12. Ho più idee, sono più creativo	□	□
13. Sono meno timido o meno inibito	□	□
14. Metto vestiti o trucco più vivaci e più stravaganti	□	□
15. Ho più voglia di incontrare o realmente incontro di più le persone	□	□
16. Ho più interessi sessuali e/o il mio desiderio sessuale è aumentato	□	□
17. Faccio più approcci sessuali e/o sono più attivo sessualmente	□	□
18. Parlo di più	□	□
19. Il mio pensiero è più veloce	□	□
20. Faccio più battute	□	□
21. Ho più difficoltà a concentrarmi	□	□
22. Faccio molte cose nuove	□	□
23. I pensieri saltano da un tema ad un altro	□	□
24. Faccio le cose più velocemente e/o più facilmente	□	□
25. Sono più impaziente e/o mi arrabbio più facilmente	□	□
26. Posso essere stancante o irritante per gli altri	□	□
27. Litigo più facilmente	□	□
28. Mi sento più su, più ottimista	□	□
29. Bevo più caffé	□	□
30. Fumo più sigarette	□	□
31. Bevo più alcolici	□	□
32. Prendo più farmaci (sedativi, antiansia, stimolanti...)	□	□

Appendix C. 32 HCL items, Swedish version

	Ja	Nej
1. Behöver jag mindre sömn		
2. Känner jag mig mer energisk och aktiv		
3. Har jag ökat självförtroende		
4. Tycker jag bättre om mitt arbeite		
5. Är jag mer utåtriktad (talar mer i telefon, går ut mer)		
6. Ökar min reslust/reser jag mer		
7. Kör jag fortare/tar större risker vid bilkörning		
8. Gör jag av med mer pengar		
9. Är jag mer risktagande i vanliga vardagsaktiviteter, t ex på arbetet		
10. Är jag fysiskt mer aktiv		
11. Planerar jag fler aktiviteter eller projekt		
12. Har jag fler idéer/är jag mer kreativ		
13. Är jag mindre blyg/inbunden		
14. Klär jag mig mer modeinriktat och lyxigt/använder jag mer make-up		
15. Vill jag träffa fler människor/träffar jag fler människor		
16. Är jag mer intresserad av sex/har jag ökad sexlust		
17. Flörtar jag mer/är jag mer sexuellt aktiv		
18. Talar jag mer		
19. Är jag mer snabbtänkt		
20. Är jag mer skämtsam		
21. Blir jag lättare distraherad		
22. Engagerar jag mig i många nya aktiviteter		
23. Hoppar mina tankar från ämne till ämne		
24. Gör jag saker enklare/snabbare		
25. Är jag mer otålig/lättirriterad		
26. Kan jag vara mer tröttsam/irriterande för andra		
27. Råkar jag lätt i gräl		
28. Är mitt humör bättre/känner jag mig mer optimistisk		
29. Dricker jag mer kaffe		
30. Röker jag fler cigaretter		
31. Dricker jag mer alkohol		
32. Använder jag mer droger/ beroendeframkallande medicin		

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