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The Validity of the French Version of the GHQ-28 and PSYDIS in a Community Sample of 20 Year Olds in Switzerland

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Summary. The 28-item GHQ (General Health Questionnaire) and the 43-item PSYDIS (Psychic Distress) were translated into French and administered to a community sample of 233 young adults. Of the two tests, the GHQ was shown to have the better correlation with the clinical assessment. For PSYDIS, specificity was 72,8, sensitivity was 64.2, but the misclassification rate rose to 29.2. The GHQ misclassified 18.5% of the respondents at the best cut-off point (5/6), with a specificity of 91.1 and a sensitivity of 49.1. The corrections C-GHQ (Goodchild and Duncan-Jones method of scoring) and simple Likert scoring improved sensitivity, although this was still unsatisfactory with males. Considering the lability of troubles in a young population, the GHQ should be applied with caution for epidemiological purposes.

Key words: General Health Questionnaire (GHQ) – PSYDIS – Validity – Screening test – Community study

Introduction

Epidemiological studies require scales that are comparable in order to make valid mental health diagnoses. To this end, the majority of British and American researchers use questionnaires and tests in the form of symptom checklists. The General Health Questionnaire (GHQ) and the PSYDIS (Psychic Distress) are two such instruments.

The GHQ (Goldberg 1972, 1978) was designed to be a self-administered screening test aimed at detecting minor psychiatric disorders; the PSYDIS (Uhlenhuth et al. 1983) is a more detailed mental health evaluation instrument, permitting estimates of the prevalence of disorder based on DSM-III criteria.

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Successively shorter versions (30, 28 and 12 items) of the GHQ-60 have been validated, in community settings (Finlay-Jones and Murphy 1979; Tarnopolsky et al. 1979; Goldberg 1980; Benjamin et al. 1982), in general practices (Goldberg and Blackwell 1970; Tennant 1977; Marks et al. 1979; Katschnig et al. 1980), in hospitals (Rabins and Brook 1981; Vásquez-Barquero et al. 1985) and for various age groups, including adolescents and young adults (Mann et al. 1983; Banks 1983; Radovanović and Erić 1983). In addition, the GHQ has been translated into 16 languages and validated in 13 different countries; although validity coefficients in non-English-speaking populations are lower, the instrument seems to be relatively culture-free (Goldberg 1985). Nevertheless, Fontanesi et al. (1985) reported a recent study using an Italian version of the 30-item GHQ with relatively unsatisfactory specificity rates that might be explained by cross-cultural differences in the expression of feelings. A validation of a French version has not yet appeared in the literature, however.

For the PSYDIS, Glass et al. (1978) and Mellinger et al. (1983) have demonstrated that this instrument provides reasonably valid data on anxiety, depression and other conditions in general population surveys. A 90-item French version of the PSYDIS has also been used (Peyras et al. 1984).

In this paper we report the results of a validation study of the French versions of the 28-item GHQ and the 43-item PSYDIS, against a clinical interview in a community sample of 20-year-old young adults. The aim of this study was to compare the two questionnaires in order to obtain a standardized instrument in French for clinical research. Furthermore, the purpose was to evaluate the effect of sex difference on the tests and to decide which method of scoring gives the best coefficients. This report is a part of a more inclusive retrospective study on antecedents of psychological distress in young adults.

Methods

Population. The population studied was a subset of 20 year olds ($n = 233$: 128 men, 105 women) from a random sample of 300 young people living in the canton of Vaud, a region of French-speaking Switzerland with approximately 500,000 inhabitants, (Bettschart and Henny 1978)[1], who were examined at the age of 9 and again at the age of 20[2]. The dropout rate from t_1 to t_2 was 22.3% (44 non-compliances, 22 departures from Switzerland, 1 subject died). Nevertheless, the sample is representative of 20 year olds for marital status of the parents, number of brothers and sisters and educational level; on the other hand, girls, as well as young people from lower socio-economic classes or immigrant families, are slightly under-represented.

The respondents were interviewed in their homes by a team of experienced psychiatrists, psychologists and sociologists. The psychiatric interview FLORES (in French: Formation, LOisirs, RElations, Santé), the 28-item GHQ and the 43-item PSYDIS were administered in a single interview, lasting approximately 2 h. The interviewer was not informed of the written answers to the tests, in order to avoid contamination bias.

Procedure. From a methodological point of view, the choice of the psychiatric interview is crucial, since it represents the principal criterion of evaluation of psychiatric status. The Present State Examination (PSE) (Wing et al. 1974) was constructed primarily for detecting psychotic syndromes; thus it seemed preferable to evaluate the mental health of a general population with an interview designed specifically for this type of population (Angst et al. 1984). The SPIKE (structured psychopathological interview and rating of the social consequences of psychic disturbances for epidemiology), of which the FLORES is a shortened French version, has the double advantage of having been created and validated recently (Illes 1981; Pfortmüller 1983) and devised for a Swiss population, also 20 years of age.

The FLORES (education, leisure, relationships, health) interview permits the investigation of 19 depressive, neurotic or psychosomatic syndromes (see Appendix 1 for the list of syndromes and symptoms). The first section contains a sociological questionnaire; in the second, the subject is asked an open question concerning any psychological disturbances experienced during the past 12 months, with indications of type, frequency, duration and subjective importance. The subject is then asked specifically about each of the 19 syndromes, with questions permitting definition of the type of disturbance. Problems are considered syndromes only if they are reported "often" or "constantly" and/or are subjectively considered important (as measured on a scale from 1 to 9). The past personal and family history of each syndrome is assessed when disturbances were experienced in childhood and/or in adolescence. Finally, the subject is asked to summarize which three syndromes are considered to be the most important, with their possible repercussions on work, leisure and contacts with peers or family.

A case is defined, in a 12-month period, either by three or more psychic syndromes with high intensity or frequency, or by one or two psychic syndromes with high intensity or frequency, one of which must be depressive mood, with impairment of normal role functioning in the area of work.

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[2] Bettschart et al.: "De l'enfance à l'âge adulte", in preparation

The validation study was done by comparing the results of the structured interview with scores on the four 7-question scales of the GHQ and with the PSYDIS classifications (see Appendix 2). The differences in periods of assessment compared with FLORES (respectively a few weeks previously and 12 months) are discussed in the final section. Both instruments were translated into French[3] and independently verified by two psychiatrists, one of whom was bilingual. In addition, the instruments had previously been pre-tested on a general population of 20-year-old young adults.

Results

The relation between the two tests and the interview is presented in Fig. 1, which distinguishes between FLORES cases and non-cases. For cases, low and high GHQ scores are equally distributed, while high scores are more frequent than low on the PSYDIS. For non-cases, however, we found a large number of low GHQ scores for a small number of high, while the number of high PSYDIS scores is three times greater than high GHQ scores.

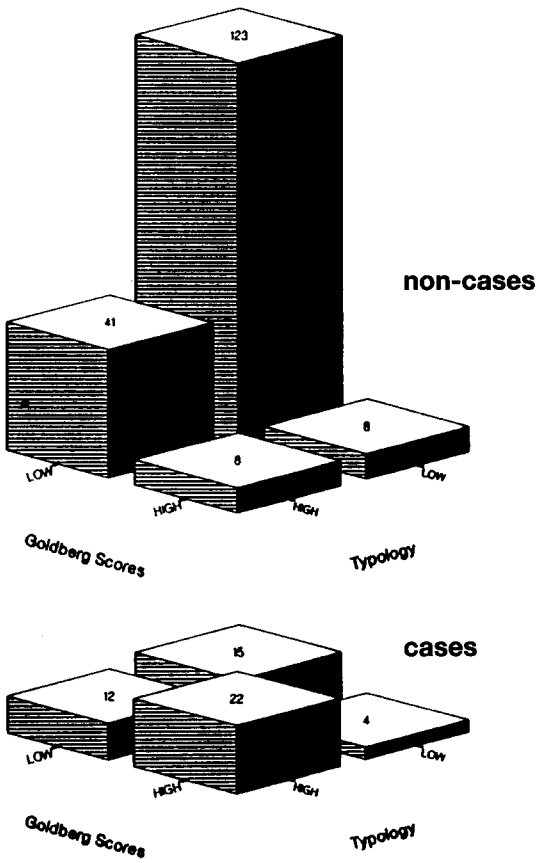

Fig. 1. PSYDIS typology versus Goldberg GHQ. Goldberg scores: low = 1–5; high = >5. PSYDIS typology: low = 2–4; high = 1

[3] Copies available from authors on request

Table 1. Validity coefficients of the GHQ versus psychiatric interview (FLORES) with two cut-off points

a) Cut-off point 4/5

	Psychiatric assessment		
Screening test GHQ	Not case	Case	Total
GHQ low (0–4)	157	25	182
GHQ high (5 +)	23	28	51
Total	180	53	233
Specificity:			87.2%
Sensitivity:			52.8%
Misclassification rate:			20.6%
Probability of a high score being a case:			0.55
Probability of a low score being a case:			0.14

b) Cut-off point 5/6

	Psychiatric assessment		
Screening test GHQ	Not case	Case	Total
GHQ low (0–5)	164	27	191
GHQ high (6 +)	16	26	42
Total	180	53	233
Specificity:			91.1%
Sensitivity:			49.1%
Misclassification rate:			18.5%
Probability of a high score being a case:			0.62
Probability of a low score being a case:			0.14

Table 2. Validity coefficients of the PSYDIS test versus psychiatric interview (FLORES)

a) PSYDIS syndromes

	Psychiatric assessment		
PSYDIS test	Not case	Case	Total
No syndrome	146	33	179
Syndromes[a]	34	20	54
Total	180	53	233
Specificity:			81.1%
Sensitivity:			37.7%
Misclassification rate:			28.8%
Probability of a high score being a case:			0.37
Probability of a low score being a case:			0.18

b) PSYDIS typology

	Psychiatric assessment		
PSYDIS test[b]	Not case	Case	Total
Low, low medium, high medium	131	19	144
High	49	34	83
Total	180	53	233
Specificity:			72.8%
Sensitivity:			64.2%
Misclassification rate:			29.2%
Probability of a high score being a case:			0.40
Probability of a low score being a case:			0.13

[a] Syndromes = depression (9), agoraphobia (12), other phobia (13), general anxiety (20)
[b] Cf Appendix 2

A satisfactory correlation of phi = 0.44 was found between GHQ and interview scores. Correlations are only 0.33 between the interview and typology classification or 0.19 using the PSYDIS syndrome classification.

Table 1 gives more detail concerning the specificity, the sensitivity, the misclassification rate and the predictive values of the GHQ. The specificity is the proportion of normal persons correctly identified by the GHQ, the sensitivity is the proportion of cases correctly identified by the test and the misclassification rate the proportion of persons wrongly classified. The best values for both sensitivity and predictive value are attained with a cut-off point of 5/6. PSYDIS evaluations (with classifications by syndrome and by typology) are given in Table 2. Both evaluations result in high misclassification rates and very low positive predictive value; in addition, classification by typology greatly overestimates the number of positive subjects. Comparison of the two tests thus clearly demonstrates that for both misclassification rate and positive predictive value the GHQ is more satisfactory than the PSYDIS as a screening instrument with a sample of young adults.

Misclassifications

False-positives are high GHQ scorers not considered as potential cases by the interview, whereas false-negatives are considered as potential cases by the interview without being high GHQ scorers.

There were 16 false-positives (6 males, 10 females), with GHQ scores ranging from 6 to 11 points. For 10 of these, more than half of their score was obtained solely on the questions concerning somatic syndromes (the seven items on the first scale). Two others reported temporary problems associated with stress due to school examinations, while 4 others expressed feelings of anxiety masked by strong defences during the interview. With the exception of the latter, these respondents fit the description of false-positives suffering from minor transient disturbances (Goldberg et al. 1976).

Table 3. A comparison of the results obtained with three different methods of scoring the GHQ

	Score assigned to each column[a] (a) (b) (c) (d)	Best cut-off score	Mis-classification rate	Specificity	Sensitivity	Positive predictive value	Negative predictive value
GHQ score	0 – 0 – 1 – 1	5/ 6	18.5	91.1	49.1	0.62	0.14
C-GHQ	0 – 1 – 1 – 1	11/12	21.5	91.1	54.7	0.53	0.13
Simple Likert	0 – 1 – 2 – 3	22/23	18.0	90.6	52.8	0.62	0.13

[a] (a) Less so than usual. (b) No more than usual. (c) Rather more than usual. (d) Much more than usual

Table 4. Validity coefficients of the GHQ versus psychiatric interview with the two best scoring methods

	Men		Women	
	GHQ	Likert	GHQ	Likert
Specificity:	95.1%	93.2%	85.7%	87.0%
Sensitivity:	36.0%	44.0%	60.7%	60.7%
Misclassification rate:	16.4%	16.4%	21.0%	20.0%
Probability of a high score being a case:	0.64	0.61	0.61	0.63
Probability of a low score being a case:	0.14	0.13	0.14	0.14

Of the 27 false-negatives (16 males, 11 females), 17 were suffering from chronic problems of variable gravity. Five were going through a difficult period linked with relationships with the opposite sex, while the scores of 5 others were relatively high, almost reaching FLORES limits for the definition of cases. This group corresponds to the description of Goldberg et al. (1976), which associates false-negatives with cases of longstanding illnesses. The GHQ has, in fact, been criticized for failing to detect chronic neurotic problems (Finlay-Jones and Murphy 1979). We have tried to correct for this by verifying the hypothesis by which "no more than usual" responses to negative items describing symptoms (19 out of 28 items) could be an indication of chronic disturbances (Goodchild and Duncan-Jones 1985). We found that the mean scores of the false-negative group differed significantly from those of the group of low GHQ scores ($t = 2.14$, $df = 36.0$, $P < 0.039$). The results of the application of the C-GHQ and of the simple Likert score, which should allow inclusion of chronic cases, are presented in Table 3. Unfortunately, when all of the coefficients are taken into account, only the simple Likert scoring represents a slight overall improvement.

Sex Differences

Table 4 shows the marked difference observed between men and women, especially in the sensitivity of the test. Modifying the scoring to 3/4 increases sensitivity respectively to 75% for women and 48% for men; on the other hand, positive probability coefficients are negatively affected for both (0.48 and 0.54). For men as well as for women, the modification made by simple Likert scoring gives the best results.

Discussion

In most cases the GHQ has been used to differentiate better between psychiatric patients and those who would consider themselves in good health (Goldberg and Hillier 1979). However, the results obtained show that the test is less satisfactory when used in population studies where the morbidity rate is low than in population studies in primary care settings (Goldberg 1985). The methodological aspects of this problem have been discussed by Tarnopolsky et al. (1979), who demonstrated the GHQ's decrease in sensitivity from 78%, if calculated in a population with an equal number of high and low scorers, to 54% in a population which contains 22% high scorers. Thus it is relevant to note that Goldberg and Hillier's validation was based on a population with 41% high scores, whereas our sample has only 18%.

Another methodological explanation for the fall in sensitivity lies in the differences of periods of assessment. GHQ refers to "the last few weeks" and "recently", whereas FLORES takes into account a period of 1 year. Thus, the probability of reporting syndromes in the interview is greater than in the GHQ test. In addition, epidemiologists should always take into account the following factors which are especially important with young adults: the lack of ability of available instruments to discriminate between transitory, particularly intermittent symptoms, and those which are more chronic and men's lesser expressiveness compared with women's at this age.

Goldberg et al. (1976) noted the effect of age on the GHQ. Referring to data from a large sample of Australian respondents, they found that the highest rate was observed for women aged 15–19 years (24.1% high scores), and for men aged 30–39 years

(18.5%). Mann et al. (1983), in a study of eating habits and psychiatric morbidity, submitted the test to 262 girls, 15 years of age. They reported that the GHQ is less satisfactory as a screening instrument for an adolescent population than for an adult one: with a cut-off point of 5/6 the sensitivity was 42% and the specificity 85%, coefficients relatively close to those we obtained in our study (respectively 49% and 91%).

In another study of adolescents (Banks 1983), validation coefficients were particularly satisfactory, reaching 100% for sensitivity. These results, however, must be regarded with a certain amount of circumspection since only 7 of the 200 17 year olds were considered cases; this represents a prevalence of 3.5%, a morbidity rate which does not correspond to generally observed data. The same is true of the explanation whereby this low rate must be due to the general good health of the adolescent population; prevalence reached 22.7% in our sample, which was also a general population. Identically, the study of Radovanovic and Eric (1983) on a group of Yugoslav medical students presented a high sensitivity coefficient of 95.7% for a low prevalence rate (15.2%); the effects of re-testing (Radovanović et al. 1988) revealed a fall in sensitivity to 64.7%.

Several studies have noted the effect of sex on the response given, either in a questionnaire or in a clinical interview. The differences observed are often associated with a more marked tendency on the part of women than on the part of men to report their symptomatology (Briscoe 1978). High GHQ scores in our sample represent 26.7% of the young women and 10.9% of the young men.

These results contrast with those presented by Vázquez-Barquero et al. (1986), who observed little sex difference, and by Tarnopolsky et al. (1979), who showed that in their study more males than females were identified as cases than the psychiatrist confirmed. Effectively, in our clinical interview the differences almost disappear: 26.7% of the women and 23.0% of the men are identified as cases. It may be that the association of age and sex factors contribute to make it difficult for questionnaires to detect disturbances experienced by young men. One reason is that they may be going through a difficult period, during which they feel they must present themselves as men without faults; another is that their problems may be more socially acceptable and may not therefore be perceived as disturbances. This is particularly the case with the consumption of alcohol and of drugs, more frequent among men than among women.

We can only observe that the PSYDIS seems to be weak where these sorts of problems are concerned. In a comparative study of 244 patients in a general practice, Goldberg et al. (1976) had simultaneously validated the GHQ questionnaire and the SCL, the first version of the PSYDIS (Derogatis 1977). Although the two instruments correlated satisfactorily with clinical assessment, the GHQ was considered as having a slightly better overall performance, since it produced fewer false-positives.

In our evaluation the correlation between the PSYDIS and the clinical assessment was not entirely satisfactory, either for typology, in which too many cases were identified, or for classification into syndromes, in which concordance was weak. In addition, a particularly high morbidity rate was observed compared with data published by the authors of the test (Uhlenhuth et al. 1983), for whom 22.6% of the population fell into the "high" category, compared with 35.6% of our sample. In the same study, 14.8% of the 18- to 34-year-old age group corresponded to the definition of one or another of the four syndromes, while this proportion reached 23.2% in our sample. Considering these differences, which might be explained by cultural differences relative to the dichotic mode of application of the test, we have discontinued the validation, choosing the GHQ as a screening instrument.

Applying the correction of Goodchild and Duncan-Jones (1985) to the 28-item GHQ, we attempted to verify the hypothesis whereby a large proportion of the false-negatives responded "no more than usual" more frequently than others to negative questions. The author of this new scoring tested his method on a 30-item version of the GHQ, demonstrating better results obtained in validations on three different samples. Bellantuono et al. (1987), in applying the correction to a 12-item version, also showed that it improves the performance of the test; Vázquez-Barquero et al. (1986), on the other hand, using the scoring modification on a 60-item version, reported that it did not improve the screening capacity of the GHQ for their data. We arrive at the same conclusions as the latter investigators, even though the proportion of "no more than usual" responses is significantly higher for the false-negatives.

It seems that the "no more than usual" response is indeed used by young people with mild chronic disturbances. On the other hand, more serious or longer-lasting chronicity is not detected by the responses to the test, since the young people concerned experience their chronicity as a form of normality. This is the case, for example, for a young dwarf who had always met with great difficulties in social adaptation; for two subjects who had experienced multiple failures throughout their scholastic careers and who were still dependent on their families; for a girl who lived in conflict between her origins, Italian

immigrants of modest means, and her aspirations for upward social mobility, which would imply rejecting her family. Furthermore, a certain number of young people are at the limit of being considered as cases and are detected as such by the interview, with some reservations as to the probable duration of the disturbances observed. Indeed, at the transition into adult life possible sources of stress are particularly numerous: failing examinations, breaking off romantic relationships, and military service (obligatory in Switzerland) are some of the situations in which certain young people react with feelings of distress without necessarily being cases of grave pathology. This is possibly the explanation for the greater morbidity observed among young people compared with other age groups. The disturbances detected would be qualitatively less serious, hence more difficult to identify correctly.

Even though the C-GHQ modification does not improve the efficiency of the test for our population, the chronicity hypothesis is not to be categorically rejected, since the Likert modification, which also takes into account "no more than usual" responses (but without distinguishing between positive and negative questions), gives the best results.

In conclusion, we note that the GHQ must be applied with prudence to a general population of young adults; this remark applies more specifically to young men than to young women. We must, however, emphasize that:

1. The predictive values of the test in estimating morbidity are particularly satisfactory; thus it can be used for studies attempting to evaluate the prevalence of psychiatric cases.

2. The 28-item GHQ has the advantage of being an easy-to-administer instrument that is not difficult to comprehend; also it is well accepted, especially since it is quickly administered (5–10 min).

It seems to us desirable for the GHQ to be used in other applications in French-speaking populations.

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References

Angst J, Dobler-Mikola A, Binder J (1984) The Zurich study – a prospective study of depressive, neurotic and psychosomatic syndromes. Eur Arch Psychiatr Neurol Sci 234:13–20

Banks MH (1983) Validation of the General Health Questionnaire in a young community sample. Psychol Med 13:349–353

Bellantuono C, Fiorio R, Williams P, Cortina P (1987) Psychiatric morbidity in an Italian general practice. Psychol Med 17:243–247

Benjamin S, Decalmer P, Haran D (1982) Community screening for mental illness: a validity study of the General Health Questionnaire. Br J Psychiatry 140:174–180

Bettschart W, Henny R (1978) L'enfant de 9 ans. Etude clinique épidémiologique. Schwabe, Basel

Briscoe ME (1978) Sex differences in perceptions of illness and expressed life satisfaction. Psychol Med 8:339–345

Derogatis LR (1977) SCL-90. Administration, scoring and procedures. Manual-I for the R (revised) version and other instruments of the psychopathology rating scale series. John Hopkins University School of Medicine, Chicago

Finlay-Jonas RA, Murphy E (1979) Severity of psychiatric disorders and the 30-items General Health Questionnaire. Br J Psychiatry 134:609–616

Fontanesi F, Gobetti C, Zimmermann-Tansella CH, Tansella M (1985) Validation of the Italian version of the GHQ in a general practice setting. Psychol Med 15:411–415

Glass RM, Allan A, Uhlenhuth EH, Kimball C, Borinstein D (1978) Psychiatric screening in a medical clinic: an evaluation of a self-report inventory. Arch Gen Psychiatry 35:1189–1195

Goldberg DP (1972) The detection of psychiatric illness by questionnaire. Oxford University Press, London

Goldberg DP (1978) Manual of the General Health Questionnaire. NFER Publishing, Windsor

Goldberg DP (1981) Estimating the prevalence of psychiatric disorders from the results of a screening test. In: Wing JK (ed) What is a case? McIntyre, London, pp 192–236

Goldberg DP (1985) The use of screening questionnaires by family doctors. In: Pichot P, Berner P, Wolf R, Thau K (eds) Psychiatry, the state of the art, vol 7. Epidemiology and community psychiatry. Plenum Press, New York, pp 273–278

Goldberg DP, Blackwell B (1970) Psychiatric illness in general practice: a detailed study using a new method of case identification. Br Med J 2:439–443

Goldberg DP, Hillier VF (1979) A scaled version of the General Health Questionnaire. Psychol Med 9:139–145

Goldberg DP, Rickels K, Downing R, Hesbacher P (1976) A comparison of two psychiatric screening tests. Br J Psychiatry 129:61–67

Goodchild ME, Duncan-Jones P (1985) Chronicity and the General Health Questionnaire. Br J Psychiatry 146:55–61

Illes P (1981) Validierung des Fragebogens SPIKE an Diagnosen der Krankengeschichten des sozialpsychiatrischen Dienstes Oerlikon. Med Diss, Zurich

Katschnig H, Berner W, Haushofer M, Barfuss M, Seelig P (1980) Psychiatric case identification in general practice: self rating versus interview. Acta Psychiatr Scand [Suppl 285] 62:164–175

Mann AH, Wakeling A, Wood K, Monck E, Dobbs R, Szmukler G (1983) Screening for abnormal eating attitudes and psychiatric morbidity in an unselected population of 15-year-old schoolgirls. Psychol Med 13:573–580

Marks J, Golberg DP, Hillier VF (1979) Determinants of the ability of general practitioners to detect psychiatric illness. Psychol Med 9:337–353

Mellinger GD, Balter MB, Uhlenhuth EH, Cisin IH, Manheimer DI, Rickels K (1983) Evaluating a household survey measure of psychic distress. Psychol Med 13:607–621

Peyras JM, Gerin P, Sali A, Tissot R (1984) L'echelle santé-maladie, un instrument pour l'évaluation des effets des

psychothérapies. I. Présentation et adaptation française. Psychol Med 16:2401–2404
Pfortmüller J (1983) Validierung des Fragebogens SPIKE IV durch Korrelation mit Standard-Ratingskalen für Depression und Angst. Med Diss, Zurich
Rabins PV, Brooks BR (1981) Emotional disturbance in multiple sclerosis patients: validity of the General Health Questionnaire (GHQ) Psychol Med 11:425–427
Radovanović Z, Erić LJ (1983) Validity of the General Health Questionnaire in a Yugoslav student population. Psychol Med 13:205–207
Radovanović Z, Erić LJ, Jevremović I (1988) The effect of retesting on the validity of the General Health Questionnaire. Soc Psychiatry 23:36–38
Tarnopolsky A, Hand DJ, McLean EK, Roberts H, Wiggings RD (1979) Validity and uses of a screening questionnaire (GHQ) in the community. Br J Psychiatry 134:508–515
Tennant C (1977) The General Health Questionnaire: a valid index of psychological impairment in Australian populations. Med J Aust 2:392–394
Uhlenhuth EH, Balter MB, Mellinger GD, Gisin IH, Clinthorne J (1983) Symptom checklist syndromes in the general population: correlations with psychotherapeutic drug use. Arch Gen Psychiatry 40:1167–1173
Vázquez-Barquero JL, Padierna JA, Peña-Martin C, Ochoteco A (1985) The psychiatric correlates of coronary pathology: validity of the GHQ 60 as a screening instrument. Psychol Med 15:589–596
Vázquez-Barquero JL, Díez-Manrique JF, Peña C, Quintanal RG, Labrador-Lopez M (1986) Two stage design in a community survey. Br J Psychiatry 149:88–97
Wing JK, Cooper JE, Sartorius N (1974) The measurement and classification of psychiatric symptoms: an instruction manual for the PSE and Catego program. Cambridge University Press, London

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Appendix 1

FLORES Interview: List of Syndromes and Symptoms
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1. *Stomach*
   - Heartburn
   - Pressure in the stomach
   - Stomach-ache or spasms
2. *Intestines*
   - Pain in the abdomen
   - Abdominal spasms
   - Constipation
   - Diarrhoea
3. *Respiration*
   - Shortness of breath
   - Restlessness
   - Pressure in the chest
4. *Heart*
   - "Stitches" in the heart region
   - Cardiac pain
   - Pounding of the heart (at rest)
   - Irregular pulse, missing beats
5. *Motor*
   - Stuttering
   - Tic
   - Writer's cramp
   - Trembling attacks
   - Muscular weakness
6. *Circulatory system*
   - Dizziness
   - Fainting
   - Hypertension
   - Hypotension
   - Sudden perspiration
7. *Allergies*
   - Hay fever
   - Bronchial asthma
   - Asthma attacks
   - Skin allergies
   - Hives
   - Eczema
8. *Headache*
9. *Backache*
10. *Joint ache*
11. *Appetite*
    - Overeating
    - Overweight
    - Lack of appetite
    - Underweight
12. *Exhaustion/Weakness*
    - Feeling exhausted
    - Weakness
    - Hypersensitivity
    - Impaired performance
    - Fatigue, increased need for sleep
    - Trouble with concentration
    - Poor memory
13. *Worry about health*
    - Worried about own physical health
    - Fear of physical illness
    - Frequent self-scrutiny of physical symptoms
14. *Anxiety*
    - Anxiety attacks
    - Panic
    - Fear of being alone
    - Fear of the coming day
    - Physical symptoms (associated with anxiety, e.g. palpitations, perspiring, tremor, diarrhoea, nausea, dizziness, shortness of breath, dry mouth)
15. *Phobias/Situational anxiety*
    - Situational anxiety
    - Animal phobia
    - Avoidance behaviour
    - Anxiety state if forcing him/herself into certain situations
16. *Sleep*
    - Trouble falling asleep
    - Waking during night
    - Early waking
    - Nocturnal anxiety states
    - Somnambulism
    - Feeling not rested in the morning
17. *Depression*
    - Sad, depressive, gloomy
    - Sleeping too little or too much
    - Loss of energy, fatigue
    - Slowness in movement or in speech
    - Feeling of inferiority, guilt
    - Life is not worth living
    - Trouble with concentration
    - Difficulty with thinking
18. *Manic mood*
    - Increased activity
    - Overtalkative
    - Travelling here and there
    - Buying sprees
19. *Compulsions*
    - Compulsion to control
    - Compulsion to wash
    - Obsessive thoughts
    - Other compulsive acts
    - Compulsive counting

Appendix 2

PSYDIS Typology and PSYDIS Syndromes
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1. Typology	*Score patterns*
High	High scores on *two or more* of the four dimensions[a], at least one of which must be Mood Anxiety of Mood Depression.
High Medium	High score on *either* Mood Depression *or* Mood Anxiety, but no other dimension.
Low Medium	High score on one or two dimensions, but *not* Mood Depression or Mood Anxiety.
Low	High score on *none* of the four dimensions.

[a] Mood depression, anergia, mood anxiety, impaired cognitive functioning

2. Syndromes	*Criteria*
Major depression	High on depressed mood *and* on any four of the following: a) Decreased energy and interest b) Impaired cognitive function c) Sleep disturbance d) Loss of sexual interest of pleasure e) Appetite disturbance
Agoraphobia-panic	High on panic-phobia *and* on somatic anxiety, but does *not* qualify for major depression
Other phobia	High on panic-phobia, but does *not* qualify for major depression or agoraphobia-panic
Generalized anxiety	High on anxious mood *and* somatic anxiety, but does *not* qualify for any of the preceding syndromes