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Validity of the PAS-ADD for detecting psychiatric symptoms in adults with learning disability (mental retardation)

Abstract The Psychiatric Assessment Schedule for Adults with Developmental Disability (PAS-ADD) is a semi-structured interview for use with respondents who have learning disability and for key informants. This report investigates the ability of the instrument to detect symptoms that had been found to exist during routine clinical assessment of the patients. Field trials involved 95 referred patients with learning disability and a key informant for each sample member. Clinical opinions of the referring psychiatrists were sought using a symptom checklist. Referrer checklist symptoms and PAS-ADD data were both factor analysed. Validity testing involved (a) computation of correlations between PAS-ADD factors and checklist data and (b) comparison of PAS-ADD and referrers' diagnoses. Results indicated good validity for the PAS-ADD in relation to psychotic symptoms and depressive symptoms. Anxiety symptom identification was not well validated, probably due to small numbers. Expansive mood identified by the referrers was not detected by the PAS-ADD because there is currently no corresponding section in the interview. Where the PAS-ADD produced a diagnosis (in 58 members of the sample), 44 were in agreement with the referrer. Probability of diagnosis by PAS-ADD increased with the number of relevant active symptoms identified by the referrer. The PAS-ADD has been shown in a previous report to have the sensitivity to detect mental disorders not known to psychiatric services. For psychotic and depressive conditions, our results showed that symptom detection was in good agreement with the information provided by the referring psychiatrists on their patients. The PAS-ADD needs a section on hypomania and further investigation of its detection of anxiety disorders.

Introduction

Within the realms of general psychiatry, much effort has been devoted to the development of structured and semi-structured clinical interviews with operationally defined diagnostic criteria (Spitzer et al. 1978). The development of these instruments has facilitated communication between investigators and has provided a method of employing the same diagnostic criteria across patient samples. The Psychiatric Assessment Schedule for Adults with Developmental Disability (PAS-ADD) is a semi-structured interview designed to extend this approach to the detection of mental disorders in people who have learning disability (Moss et al. 1993). The PAS-ADD produces research diagnoses, and involves present state interviewing of the patient, followed by a similar interview with a key informant. Either interview can detect symptoms and produce diagnoses, so the PAS-ADD can also be used for the assessment of individuals whose linguistic ability does not permit a clinical interview.

The interviewing techniques are designed to mirror routine clinical investigation and thus make the procedure acceptable to both respondents and clinicians. This, it is hoped, will raise the potential for use of the PAS-ADD in clinical, as well as in research applications. The fundamental requirements governing the design of the interview were as follows:
A. Asks patients about presenting symptoms, their duration and historical development
B. Examines mental state
C. Uses informant data and additional information to corroborate history
D. Uses historical information from case notes and other relevant medical records
E. Is standardised and repeatable
F. Allows standardised research diagnoses using ICD 10

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G. Is of the simplest possible linguistic structure commensurate with an appropriate degree of sensitivity to, and discrimination between, symptoms.

This paper is concerned with a central aspect of the quality of the PAS-ADD, namely, whether detection of symptoms by the PAS-ADD is valid with respect to the symptoms identified by routine clinical assessment.

Potential sources of invalidity in using a research interview

Moss (1995) has outlined a number of logical steps in producing a research diagnosis via a clinical interview. Step 1 is the production of the classification system (e.g. ICD 10, DSM IV). One of the main purposes of these systems is to summarise and standardise scientific and clinical knowledge about the manifestations of mental disorders, providing careful descriptions of the criteria that must be met for diagnosis. The development of the PAS-ADD has been based on the assumption that the manifestations of mental disorders are basically similar to the general population (Menolascino 1970; Reiss and Benson 1985; Sovner and Hurley 1983). The validity of ICD 10 was thus, for the present purposes, accepted.

Step 2 is the interpretation of diagnostic criteria in symptoms/behaviours or clusters thereof. A further assumption that was made in the development of the PAS-ADD is that the relation between symptoms and criteria as defined by the Schedules for Clinical Assessment in Neuropsychiatry (SCAN) can also be accepted. The development of the SCAN has devoted huge resources to the development of the diagnostic algorithms, and can hence be regarded as the best available objectification of the ICD 10 criteria. The assumptions in relation to steps 1 and 2 are considered in more detail in the Discussion section.

It is with step 3 that the current investigation was concerned – the embodying of symptoms in terms of questions or observational items on the schedule. It is likely that this embodiment – the method of questioning and the form of words used in an interview – will have an impact on apparent prevalence. In this respect, a central test of validity is the extent to which symptoms identified by the PAS-ADD agree with the clinical picture provided by routine clinical assessment. It must be stressed that a present state examination would not be expected to detect every symptom that had been identified through long-term clinical investigation and history. It is highly likely that a patient will not manifest all symptoms in a single interview. However, those symptoms that are detected should relate closely to the clinical picture. In addition, the interview should of course be as symptom-sensitive as possible.

In the general population, present state interviewing can provide useful information because most patients can describe symptoms with sufficient clarity for a psychiatrist to determine their existence with reasonable confidence (assuming the patient has sufficient insight at the time of the interview). Further, a person in the normal IQ range can usually provide information that is clear enough to make reliable ratings of severity and duration. In a previous paper (Moss et al. 1993) we have shown good reliability of coding for a community sample of people with learning disability in relation to symptoms of anxiety and depression, and good sensitivity of case detection. However, since the majority of identified cases were not known to the medical services, we did not have an independent measure of the validity of symptom identification. The current version of the PAS-ADD was field tested on a sample of individuals referred to psychiatric services. We therefore had independent clinical assessments available against which to validate symptom identification by the PAS-ADD interviews.

Overview of the PAS-ADD

The ICD 10 version of the PAS-ADD was derived from version 1 of the SCAN (World Health Organisation 1992). It uses the SCAN's glossary, in an unmodified form, to provide the clinical definitions for coding. Using the CATEGO program (version 2.1) it can generate ICD 10 diagnoses of psychotic disorders, depression and anxiety disorders. The PAS-ADD includes all SCAN items that are used by this program for calculation of the ICD 10 criteria relating to the disorders that are currently covered by the interview. (The SCAN includes many other items that were not utilised by the CATEGO program version 2.1. However, version 2 of the SCAN uses an even more sophisticated algorithm that includes information on time course and aetiology. In due course, it may be appropriate to update the PAS-ADD in the light of these changes).

Additionally, a screen for autism was included, triggering of this screen leading to a full developmental assessment using the Autism Diagnostic Interview (Rutter et al. 1991). The diagnosis of autism in this sample is discussed in detail elsewhere (Moss et al. 1994).

The SCAN's approach to diagnosis and the PAS-ADD on which it is based have considerable sophistication. The PAS-ADD has a large number of items, the scores on these items being used to evaluate each of the ICD 10 Diagnostic Criteria for Research (WHO 1993). The SCAN and the PAS-ADD thus have a different approach from other instruments that have been designed for mental health evaluations in people with learning disability. The Psychiatric Interview for Mentally Retarded Adults (PIMRA), for example, bases its diagnosis of schizophrenia on five items. This is considerably fewer than the number of ICD 10 criteria that are specified for F20 schizophrenia, so a considerable amount of interpretation on the part of the interviewer is implied. The PAS-ADD, on the other hand, typically

breaks down each criterion into a number of individual symptoms. A complex algorithm determines criterion fulfilment on the basis of item scores. The inter-rater reliability of the ICD 10 version gives a mean Kappa of 0.65 for individual item codes and a Kappa of 0.7 for agreement on index of definition (clinical significance of the symptoms, Moss et al. 1996a).

Use of the PAS-ADD requires, where the intellectual level of the respondent (patient) permits, separate interviewing of both the respondent and a key informant. Each of the two interviews is processed separately by the CATEGO algorithm, producing two separate accounts of the mental state. [The possibility of combining data from the two accounts has been explored, but evidence to date (Moss et al. 1996b) suggests that keeping them separate is the more appropriate option]. All sample members in the current study were capable of being clinically interviewed. The way in which the information from the two interviews was used to determine caseness is described in the Results section.

Method

Sample

The sample consisted of people with learning disability who were already in contact with a psychiatrist. The use of referred patients ensured that the sample would manifest a relatively large number and variety of psychiatric symptoms. Eleven health districts were involved in the work. In each authority, psychiatrists working with patients who had learning disability were contacted, the project was discussed and the psychiatrists were asked if they would refer patients to us who (a) had sufficient verbal ability to attempt a clinical interview and (b) were thought to have a disorder within the spectrum described earlier.

Two interviewers were used in the study. One was a social scientist who had many years experience of working with and interviewing people with learning disability, but who had no formal psychiatric training. The other was a psychiatrist at senior registrar level, but who had no significant previous experience of working with people who had learning disability. Both had undergone a formal course in SCAN interviewing at a recognised training centre.

Data collected

Each of the two interviewers contacted psychiatrists, made the initial enquiries and got the referrer checklist completed, and then passed the sample member to the other interviewer for assessment. Assessments were thus completed blind to any knowledge of the referred diagnosis or checklist's contents. PAS-ADD interviews were conducted with respondents and informants during separate sessions, in whichever location was appropriate, e.g. home, day centre, etc. The presence of a carer was frequently of great importance in making the respondent feel sufficiently at ease for the interview to be conducted.

Psychiatrists who referred the patients to the project were asked to complete a checklist of 29 symptom areas, ticking any categories in which symptoms were thought to be present. In addition, the psychiatrists were asked to estimate the duration of the current illness, to provide details of any other observations not already specified and to give a diagnosis.

Part I of the Adaptive Behaviour Schedule (ABS) (Nihira et al. 1974) was completed by the key informant. These data allowed us, in conjunction with IQ and ABS data collected in an earlier project, to derive IQs for the population, using a multiple regression technique (Hogg and Moss 1995). The mean IQ of the current sample was 37.6 (range 22–58). This is significantly higher than was found for the unselected community population of people with learning disability living in Oldham, where the mean IQ was 31.4 (t-test, two-tailed, P < 0.005). The difference probably arose from the need in the current study to select individuals who had sufficient linguistic ability to be interviewed.

Ninety-five individuals with learning disability were involved in the study. Ninety-three symptom checklists were returned. The age range of the sample was 16–69 years, with a mean of 37 years. The sample included a greater preponderance of men than women, 59.5% versus 40.5%. This ratio reflected quite closely the findings of our whole-population study of people with learning disability over 50 years of age in Oldham (Moss et al. 1992), where the corresponding figures were 56.6 and 43.4%, respectively. The higher preponderance of men in contact with learning disability services was also found across the whole adult age range in the Wessex Mental Handicap Register (Moss 1991).

Results

The schedule proved relatively user-friendly and, following amendments to the first version, was acceptable to the majority of the respondents and to their informants.

Interviews

The patient interview

An obvious problem that emerged from the study was the difficulty in distinguishing trait from acute illness in people with learning disability. For instance, the item *poverty of speech* was difficult to code because the contribution of the learning disability itself could not be ascertained without long-term knowledge of the individual. Also, respondents tended to report symptoms as though they had only recently occurred. Thus, chronic problems such as poor concentration could be confused with the loss of concentration that develops with a depressive illness. Respondents were often suggestible, and probably acquiesced to the anticipated requirements of the interviewer. In general, the utmost effort had to be made to distinguish irrelevant responses from the tangential nature of replies that are symptomatic of thought-disordered respondents.

Generally speaking, the combination of questions and prompts worked well in eliciting the necessary information for coding. Respondents were often able to give clear and comprehensive reports of their mental states, although some aspects could be more confidently rated than others. The notion of being able to "control a symptom" or "distract oneself by doing something else" appeared to be well understood, the replies being clear and relatively easy to code. On the other

hand, questioning about frequency and duration was often difficult to code with confidence. Mood states seemed to be understood readily, but psychotic symptoms were often complex, respondents sometimes suffering from several different, but unsystematised, delusions. The fact that the sample members had learning disability did not mean that their delusions were necessarily simple. Respondents appeared able to distinguish between internal and external hallucinations relatively easily, but there were difficulties making the crucial distinction between second- and third-person hallucinations. Ideas of self-reference were reported readily, but it was sometimes difficult to decide if these ideas were delusional, unless they were clearly bizarre or were strongly corroborated by the informant.

The PAS-ADD includes as its final section a series of behavioural observations for the interviewer to make in the patient interview. Positive ratings made on the patient interview are then explored with the informant in the context of the previous month's functioning. The behavioural section posed difficulties, primarily because the assumptions about premorbid functioning used for the general population could not be applied to people with learning disability. Ratings of social behaviour posed similar problems. Without an extensive knowledge of the respondent it was difficult to judge the clinical significance of, for instance, apathy and social withdrawal. Incongruity of affect was also difficult to judge because some people with learning disability may not have had a clear understanding of the significance of certain social situations that demand a particular response, e.g. sympathy.

The informant interview

Not surprisingly, informants were less able to talk about respondents' subjective phenomena than about observable behaviour. Thus, they sometimes reported that a respondent talked to him/herself or appeared to react to probable hallucinations, but were less able to give detail about the form of the hallucination. However, carers tended to be well-informed about respondents' *delusions*. This presumably was because people often feel compelled to talk about a delusional belief, while a hallucination is basically a passive phenomenon. The detailed differences between respondent and informant reporting of symptoms, and the combination of these two sources of information, is discussed by Moss et al. (1996b).

Diagnoses as reported by the referring psychiatrists

Row totals in Table 1 give the diagnostic breakdown for the whole sample according to the clinical judgement of the referring psychiatrists. It can be seen that by far the most common diagnosis was schizophrenia. The relatively low proportion of depression and anxiety disorders reflects the fact that people with learning disability are more likely to be referred to psychiatric services if they have highly visible symptoms such as psychosis or challenging behaviour (Day 1985; Moss and Patel 1993).

Diagnoses as determined by the PAS-ADD

Data from the PAS-ADD interviews were processed by the diagnostic program devised for the SCAN. This program provides a variety of outputs including ICD 10 diagnoses when the necessary criteria are fulfilled, scores for a number of symptom constellations (item groups), total symptom score and index of definition (which is an indication of the clinical significance of the number and distribution of symptoms found to be present).

Table 1 Cross-tabulation of diagnoses by the Psychiatric Assessment Schedule for Adults with Developmental Disability (PAS-ADD) and by the referring psychiatrist ($n = 95$)

Clinician's diagnosis	PAS-ADD diagnosis						
	None	Schizophrenia	Autism	Depression	Anxiety/phobias	Non-organic hypersomnia	
Not currently ill	12						12
Organic psychosis	2	1					3
Schizophrenia/schizoaffective	5	27		1	1	2	36
Autism	4		6		1		11
Depression	8	1		6		1	16
Anxiety/phobias					3		3
Mania/hypomania	4	4		2	1		11
Personality disorder	1	1					2
Obsessional disorder	1						1
	37	34	6	9	6	3	95

Since PAS-ADD interviewing requires, where possible, separate interviews with the respondent and with a key informant, two separate accounts of mental function result, each of which is processed separately by the SCAN algorithm. We have shown elsewhere (Patel et al. 1993) that this can result in a large number of disagreements between respondents and informants, these disagreements usually being that one interview meets formal criteria for a mental disorder while the other does not. At the present time we do not have an established framework for determining the relative validity of information derived from the subject and informant interviews. Indeed, it is difficult to see how such comparative judgements could be made, unless there was compelling evidence from a source external to the interviews themselves. We thus consider the best estimate of prevalence to be the percentage of cases derived from *either* interview and *either* algorithm (Patel et al. 1993). On this basis, column totals in Table 1 show the total prevalence of diagnosed cases according to the PAS-ADD. The total number of cases identified for the 95 interviewed was 58 (61.1%).

Validity of symptom identification

Factor analysis of the PAS-ADD data

The polydiagnostic approach of the PAS-ADD necessitates that the interview has a relatively large number of items. As a result, most of the items in a typical interview using the PAS-ADD remain unscored or zero scored, even for a person with florid symptoms. This means that the interview codings must be rendered into a smaller number of scores before they can be compared with the referrers' reports. Factor analysis was used for this, not only because it took account of inter-correlations between variables, but also because it gave an opportunity to investigate the extent to which such intercorrelations reflected clinically meaningful dimensions.

The first part of the procedure by which the SCAN program produces a diagnosis is to generate a series of *item groups* derived from clinically related items. These item group scores were used to provide the scores for use in the factor analysis. However, the rules for generating item scores were simplified to retain the maximum amount of information from the individual codings. Normally, each step of the SCAN diagnostic process involves classification. Thus, individual items only contribute to the item group total score if they are coded within the range that is considered clinically significant. Clinically significant items contribute to the total score for each item group, the total score finally being recoded 0, 1, 2 or 3. For the purposes of the factor analysis, item group scores were generated by summing the severity codes of all items involved in the calculation of a specific group. In this way, the resulting item group scores reflected both the number of individual symptoms present and their individual severity scores. As a final step prior to factor analysis, item group scores were converted to square roots. This transformation ensured that the distribution of scores did not violate assumptions of normal distribution.

Seven factors were derived from principal components extraction and Varimax rotation, accounting for 63.5% of the variance. Columns 2 and 3 of Table 2 show, for each factor, the item groups loading 0.5 or greater. The majority of factors showed clear clinical identities, and were named accordingly. Associations between PAS-ADD factor scores and symptoms on the referrer checklist were investigated by calculating biserial correlations between the 7 factor scores and the 29 checklist items. Columns 4 and 5 of Table 2 show the checklist items that were significantly correlated with the factor, and the magnitude of the correlation.

It can be seen that associations between the PAS-ADD and the referrer checklist indicated good validity. All of the significant correlations indicated appropriate associations between the results of interviewing and the opinions of the referring psychiatrists. There were two factors relating to psychosis, factor 1 and factor 7. The second of these included the item group *delusions about the body*, so it is appropriate that this factor correlated with referrers' reports of hypochondriasis and olfactory hallucinations. These were also two factors relating to depression (factors 3 and 5). The identities of these factors and their associations with the checklist appeared to be very similar.

Factor analysis of the checklist data

As a further check on the relationships between the PAS-ADD and the referrers' reports, the referrer checklist data were also factor analysed. This enabled the factor structure of the two data sets to be compared, and for correlations between the factor scores from both analyses to be computed.

Since the checklist data were binary, conversion to square roots was superfluous. Items for which less than 5% of the sample were checked positive were removed in order to avoid the computation of intercorrelations becoming unstable. Five factors were extracted, accounting for 61.5% of the variance (Table 3). It can be seen that the factors represented very clear dimensions of psychopathology and were named accordingly. The presence of factors relating to expansive mood and negative symptoms represents a notable difference from the structure of the PAS-ADD. Expansive mood was an aspect not covered in the present version of the PAS-ADD, mainly because it was thought that it would be difficult to locate sufficient subjects for these first field trials. In fact, it can be seen from Table 1 that 11 of the 95 sample members were referred with a diagnosis of mania or hypomania. We

Table 2 PAS-ADD factors and their correlation with the referrer checklist items

PAS-ADD factor			Significantly correlated checklist items	
No.	PAS-ADD item groups loading > 0.5	Factor loading	Item	r with PAS-ADD factor
	Psychosis			
	Visual hallucinations	0.65	Visual hallucinations	0.28**
	Auditory hallucinations	0.50	Auditory hallucinations – second person	0.38***
	Disordered thought	0.63	Auditory hallucinations – third person	0.34***
1	Delusions of control	0.50	Delusions of passivity	0.32**
	Bizarre delusions	0.81	Bizarre delusions	0.48***
	Miscellaneous delusions	0.75	Derailment/tangentiality/ neologisms	0.36***
	Delusions of persecution	0.60		
	Panic/phobia			
	Anxiety/panic	0.75		
2	Agoraphobia	0.70	No significant associations	
	Social phobia	0.63		
	Specific phobia	0.56		
	Anxious depression			
3	Nervous tension	0.68	Depressive symptoms	0.23*
	Muscular tension	0.68	Suicidal behaviour	0.27**
	Depressed mood	0.50	Depressive delusions	0.29**
	Incoherence			
	Incoherent speech	0.63	Derailment/tangentiality/ neologisms	0.24*
4	Other speech abnormality	0.83		
	Depression			
	Special features depressed mood[a]	0.81	Depressive symptoms	0.28**
5	Depressed mood	0.61	Disturbed biological symptoms suggestive of depression	0.35***
	Depressive delusions	0.65	Suicidal behaviour	0.23*
			Observed low mood	0.34***
	Slowness			
6	Poverty of speech	0.80	No significant associations	
	Motor retardation	0.77		
	Delusions about body	0.80	Hypochondriacal preoccupation	0.23*
	Delusions of reference	0.73	Olfactory hallucinations	0.37***
7			Auditory hallucinations – second person	0.32**
			Depressive delusions	0.28**
			Bizarre delusions	0.29**

$*P < 0.05$; $**P < 0.01$; $***P < 0.001$
[a]Crying, morning depression, guilty ideas of reference

are currently revising the PAS-ADD to include this diagnosis.

Correlations between the PAS-ADD and referrer checklist factor scores revealed four significant correlations (Table 4). These were all between appropriate pairs of factors, and give further support for the validity of the PAS-ADD in relation to depression and psychosis. There was no PAS-ADD factor corresponding to

expansive mood, so it was to be expected that there would be no significant correlation relating to the PAS-ADD factors. There were, however, two instances where both analyses produced clinically identifiable factors, but there was no significant association between them. These were (a) anxiety symptoms and (b) negative symptoms. Possible reasons for this lack of association are discussed later.

Table 3 Factor structure of the referrer checklist items

No.	Checklist items with factor loadings > 0.5	Factor loading
	Expansive mood	
1	Expansive mood	0.86
	Overactivity behaviour/thoughts	0.97
	Expansive/grandiose ideation	0.71
	Flight of ideas	0.77
	Psychosis	
2	Derailment/tangentiality/neologisms	0.53
	Auditory hallucinations – second person	0.67
	Auditory hallucinations – third person	0.65
	Visual hallucinations	0.50
	Mood incongruent delusions/bizarre	0.82
	Passivity delusions	0.63
	Negative symptoms	
3	Poverty of speech	0.70
	Loss of volition	0.67
	Slowness	0.82
	Emotional flatness	0.71
	Depression	
4	Depressive symptoms including poor concentration, anhedonia, loss of interest	0.82
	Disturbed biological symptoms including sleep, appetite and libido	0.83
	Observed low mood	0.52
	Depressive delusions	0.51
	Anxiety	
5	Anxiety symptoms including subjective and autonomic symptoms	0.56
	Phobic anxiety including panic attacks	0.80
	Hypochondriacal preoccupation	0.52

Validity of diagnosis

From the cross-tabulation of the PAS-ADD and clinical diagnoses (Table 1) it can be seen that the most common type of disagreement was the clinician giving a diagnosis while the PAS-ADD failed to elicit one. Also, it is likely that the two individuals diagnosed by the clinicians as having bipolar disorder were correctly classified by the PAS-ADD as having depression, since bipolar disorder could not have been detected on the PAS-ADD and the respondent was in a depressed phase. Including these two cases, 44 of the 58 instances where the PAS-ADD yielded a diagnosis showed agreement between the PAS-ADD and the referring clinician.

Of the sample members who did not receive a PAS-ADD diagnosis, some were indicated by the referrers as being in remission. Eight sample members were given a referrer's diagnosis of schizophrenia, but said to be in remission. Four individuals were said to currently have no symptoms, and were given no diagnosis. These 12 cases are grouped in Table 1 as "not currently ill". Although our checklist data did not permit an estimate of the current severity of symptoms, it was notable that the number of symptoms reported on the checklist

varied widely - from 0 to 19, with a mean of 4.24. In relation to diagnoses of schizophrenia, the probability of the PAS-ADD making a diagnosis was related significantly to the number of core symptoms that the referrer had indicated as present. From ICD 10 criteria, the core symptoms from the referrer checklist relating to schizophrenia were identified as:

Formal thought disorder, including derailment/tangentiality/neologisms
Auditory hallucinations – second person
Auditory hallucinations – third person/commentating
Olfactory hallucinations
Haptic hallucinations
Mood incongruent delusions/bizarre
Passivity delusions

Table 5 shows clearly that a diagnosis of schizophrenia from the PAS-ADD was more likely to be obtained for those having a greater number of symptoms. Column 1 shows the eight cases in remission, all of whom scored zero symptoms from the list above. Only one of these received a PAS-ADD diagnosis of schizophrenia. Where there were two or more symptoms, on the other

Table 4 Significant correlations between PAS-ADD factors and referrer checklist factors

PAS-ADD factor		Checklist factor		
No.	Factor name	No.	Factor name	r
1	Psychosis	2	Psychosis	0.54***
7	(Delusions of body, delusions of reference)	2	Psychosis	0.28**
3	Anxious depression	4	Depression	0.22*
5	Depression	4	Depression	0.41***

$*P < 0.05; **P < 0.01; ***P < 0.001$

Table 5 Success of PAS-ADD in detecting the 44 referred cases of schizophrenia

Detection by PAS-ADD?	Referrer symptom checklist		
	In remission (0 core symptoms)	One core symptom	Two or more core symptoms
No	7	7	5
Yes	1	8	16

hand, 71% were detected by the interview. A similar trend was found in relation to core symptoms of depression, but this was not significant due probably to the small numbers.

Symptom coding and IQ

We have shown elsewhere (Patel et al. 1993) that the probability of case detection using the PAS-ADD increases with the IQ of the respondent. This, we have found, applies to both respondent and informant interviews. Because of the need for all respondents in the sample to be clinically interviewable, the current study used a narrower bandwidth of IQ than would typically be found in a community population of people with learning disability. Nevertheless, the same trend was still observable. There were significant correlations between IQ and three of the symptom frequencies generated by the SCAN program, the correlation for neurotic, depressive and total symptoms being 0.22, 0.21 and 0.26, respectively ($p < 0.05$). The correlation with psychotic symptom frequency, although in the same direction, was not significant ($r = 0.13$). Possible reasons for this lack of significance are discussed shortly.

Discussion

Overall, the sizeable proportion of sample members not receiving a PAS-ADD diagnosis is essentially a reflection of the "snapshot view" of mental status pro-

vided by present state interviewing. Some individuals were specifically indicated as being in remission, while others had very few symptoms indicated as present. The PAS-ADD will only produce a diagnosis if all the ICD 10 criteria are met at the time of interview, so it is possible for symptoms to be present, but for the algorithm to regard none of the diagnoses as having been fully met. The clinicians, on the other hand, usually provided a retrospective diagnosis even if the individual was not currently manifesting the symptoms. Not surprisingly, the PAS-ADD was more likely to produce a diagnosis if the condition was clearly active at the time of interview. Although we did not have a specific measure of the clinicians' estimates of severity, it was clear that a PAS-ADD diagnosis was made more often when several relevant symptoms were actively manifested.

A particular shortcoming of present state diagnosis is the difficulty of identifying conditions in which symptom fluctuation is an important feature, e.g. hypomania. As mentioned earlier, a number of cases of hypomania were identified by clinicians but not by the PAS-ADD because the interview does not yet have a section for expansive mood. Even with a section on expansive mood, however, the diagnosis of hypomania requires the observation of a mood change over a period of time, and hence implies reliance on clinical history - a significant departure from the present state approach of the PAS-ADD. In the future, it may be considered appropriate to include longer-term ratings within the PAS-ADD so that hypomania and other conditions requiring a long-term perspective on assessment can be successfully identified. The SCAN can be used for rating a representative episode or lifetime prevalence. In principle, this could be done with the PAS-ADD although such use would be restricted to informants, since the task of discussing symptoms from a specific time perspective is beyond the ability of all but the most able of people with learning disability. As mentioned earlier, information on time course is now handled more comprehensively in later versions of the algorithm, so there is the theoretical possibility of updating the PAS-ADD in line with these modifications. However, the problems of obtaining valid accounts outside the present state period from people with

learning disability suggest that such modifications will need to be made with caution.

The results presented here showed an encouraging level of agreement between the symptom constellations detected by the PAS-ADD and those identified in clinical psychiatric assessment. However, one exception to this was in relation to symptoms of panic/phobia. This was the main area where good validity was not demonstrated. It seems likely that this was due mainly to the low number of sample members with this type of disorder. In this respect, one problem with the sample was that the individuals were referred. Although this approach guaranteed a large number of symptoms, it did not result in many people whose primary diagnosis was an anxiety disorder, because people with learning disability may not get referred to psychiatric services if they only manifest symptoms of anxiety (Moss and Patel 1993). On the other hand, our community study of older people with learning disability (Patel et al. 1993) suggests that anxiety disorders are amongst the more common forms of mental disorder, even though they may often go undetected. It must be said that this was one of the most difficult areas to explore by interview. People with learning disability often find it difficult to give descriptions of panic attacks and/or phobias that are sufficiently clear to code as present. Also, information from informants tends to be less helpful than for other diagnostic categories because ICD 10 requires evidence of autonomic features. We have found that informants are often unable to give such reports. Overall, the diagnosis of anxiety disorders warrants further investigation in the future.

The lack of association between referrer reports and factor 6 (slowness) is not surprising. Present state interviewing gives only a snapshot view of the individual from which it is very difficult to ascertain the clinical significance of the observed behaviour, particularly since the item groups *poverty of speech* and *motor retardation* are behaviours that many non-mentally ill people with learning disability may show. Since the assumption of a normal level of premorbid functioning cannot be made, a present state examination would be expected to be less valid than a report based on long-term clinical knowledge.

Apart from selecting the specific items from the SCAN that were necessary for diagnosing the various disorders covered by the PAS-ADD, the most significant changes to the original items were in terms of wording. An attempt was made to make the language as simple as possible without changing the basic meaning of the items. Many of the items in the SCAN involve quite difficult propositions, e.g.:

SCAN: Do you have the feeling that you are being blamed or accused by others because of some action or lapse or deficiency that you yourself feel was blameworthy? (How much of the time feel was blameworthy? (How much of the time in [PERIOD] have you been free of the feelings?) (How often have you had the feeling that you were being blamed for something really serious?)

In the above, the main question is very precisely worded, but the vocabulary is sophisticated, and there are two essential elements within a single sentence – "do you feel blamed by others?" and "is it because of a lapse or personal deficiency". In the first prompt, being "free of a feeling" is a more advanced concept than "having a feeling". In the second prompt, the person is being asked two things – whether they feel blamed for something "really serious", and if so, how often they feel like this. Each of these linguistic complications raises the intellectual demands and increases the probability that a respondent with learning disability will either not respond or respond inappropriately. The PAS-ADD's rewording is designed to break these propositions down into their component elements:

PAS-ADD: Do you think that you are blamed for something?
(Has anyone said that you have done something bad?)
(What do you think you have done?)
(Is it your fault?)
(Do you feel guilty?)
(Do other people say it is your fault?)
(Do you think you should be punished?)

At the present time it can only be claimed that the PAS-ADD's language appears to be more appropriate for people with learning disability in terms of its face validity. A more precise consideration of the validity of specific wordings will need evidence of how responses in the population would change if the items were worded differently and of how this would affect the coding of PAS-ADD items. One thing that can be said in defence of rewording, however, is that semi-structured interviewing allows an unspecified amount of flexibility in wording and interview style. Experienced PSE and SCAN interviewers will sometimes depart from specific wordings in order to clarify to the patient what precisely is being asked. Good interviewing thus relies as much on a thorough knowledge of the glossary definitions of psychopathology as on the use of specific linguistic forms. What we have attempted to do is to raise the possibility that the person with learning disability will understand the questions and thus be in a better position to give a valid answer.

There remains a continuing question about the use of classification systems designed for the general population – their validity when applied to people with learning disability (Moss 1995). This question will only be answered through studies looking in detail at the manifestations of symptoms across the intellectual

spectrum and at their clustering within individuals. Such studies could, in theory, lead eventually to the construction of a new classification system that is more adaptable to the expression of psychiatric morbidity in persons of different intellectual ability.

An important consideration when making research diagnoses is the complex relationship between developmental level, symptom type and confidence of rating. As already mentioned, the probability of detecting psychiatric symptoms increases with the IQ of the respondent. However, there is also another effect that needs to be taken into consideration. Our research indicates that interviewers' uncertainty about their ratings is greatest when the person (or informant) is able to give *some* indication of a symptom, but there is insufficient information, to give a sufficiently cogent account (Moss et al. 1996a). For complex symptoms such as those of schizophrenia, this tends to occur with individuals who, in the spectrum of intellectual disability, are relatively able. In comparison, interviewers are more prepared to make definite ratings of symptom *absence* in people whose ability level is lower. This, of course, does not imply that the individual definitely did not experience the phenomenon, only that it was not clearly manifested in the interviews. The resulting paradox is that, for psychotic symptoms, uncertainty of rating rises with the ability of the respondent, rather than the reverse (Moss et al. 1996a). This is probably the reason why the association between IQ and symptom frequency was less strong for psychotic symptoms.

One of the challenges thus facing the development of diagnostic methods in this population is to place the decisions about the presence or absence of symptoms on an even firmer footing than we have hitherto been able to achieve. It is not yet possible to say whether there is an IQ barrier below which it is theoretically not possible to detect certain symptoms (Reid 1983). However, since even minor changes in diagnostic criteria have been shown to produce substantial changes in diagnosis (Zimmerman et al. 1986), there is obviously a need to examine in detail the precise rules and the exact words used by interviewers and respondents with the aim of providing a more objective framework for diagnostic decision making.

Judging validity against the standard of clinical judgement could be criticised on the basis that these psychiatrists were not necessarily experts at a "gold standard" level. The use of such experts might be beneficial in a future study, although one would not want to lose the particular insight resulting from long-term clinical management of the patient – which these psychiatrists had. Given the state of knowledge in the field, and varying levels of training and expertise in learning disability psychiatry, it seems reasonable to assume that both clinical judgement and PAS-ADD interviewing can make a significant contribution to the making of valid diagnoses. The PAS-ADD has only the re-sponses from patient and informant interviews with which to make a diagnosis, so the aggregate of clinical information from many sources is likely to provide more sensitive detection. On the other hand, a properly designed interview provides a very precise framework within which to conduct a clinical investigation, and may thus be superior to some of the assessments that are routinely made. Overall, the balance of validity, reliability and sensitivity is not fully predictable with our current knowledge, and is likely to vary between symptoms. Further studies will be necessary before we can determine, for instance, whether some symptoms can be more reliably detected by structured interview than others, or whether others are definitely more difficult for people with learning disability to describe, and hence may be more effectively detected by observation and/or informant interviewing. The results presented here do, however, suggest that a useful start has been made in the development of semi-structured interview techniques for use with people who have learning disability.

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