

# The Eating Disorders Section of the Development and Well-Being Assessment (DAWBA): development and validation

## Sessão de Transtornos Alimentares do Development and Well-Being Assessment (DAWBA): desenvolvimento e validação

Original version accepted in English

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### Abstract

**Objective:** Development and validation of the Eating Disorders Section of the Development and Well-Being Assessment (DAWBA). It is a package of questionnaires, interviews and evaluation techniques, designed to generate DSM-IV and ICD-10 based diagnoses of anorexia, bulimia nervosa and the respective partial syndromes in epidemiological studies, in subjects who are 7 to 17 years old. The parents are interviewed in all cases, as are young people aged 11 or more. **Methods:** 174 girls, divided into three groups, were assessed with the Eating Disorders Section of the Development and Well-Being Assessment: 48 with eating disorders, 55 clinical controls (with depression, obsessive-compulsive disorder or gastrointestinal disease) and 71 community controls. The sensitivity, specificity and predictive values of the assessment were investigated by comparing the Development and Well-Being Assessment diagnoses with independent psychiatric diagnoses. The test-retest reliability was investigated by reapplying the measure on 55 subjects after 2 or 3 weeks. **Results:** For the detection of any DSM-IV and ICD-10 eating disorder, the final Development and Well-Being Assessment diagnosis had a sensitivity of 100%, specificity of 94%, positive predictive value of 88%, and a negative predictive value of 100%; there was 95% agreement between the initial and repeat diagnoses (a kappa of 0.81). **Conclusion:** The Eating Disorders Section of the Development and Well-Being Assessment has suitable psychometric properties for use in clinical and epidemiological studies.

**Keywords:** Eating disorders/diagnosis; Eating disorders/epidemiology; Food habits; Anorexia nervosa; Bulimia; Diagnostic and statistical manual of mental disorders; Interview, psychological; Mental disorders; Children; Adolescent

### Resumo

**Objetivos:** Desenvolvimento e validação da Sessão de Transtornos Alimentares do Development and Well-Being Assessment (DAWBA). Essa sessão é um pacote de questionários, entrevistas e técnicas de avaliação, desenvolvido para gerar diagnósticos baseados no DSM-IV e CID-10 de anorexia, bulimia nervosa e as respectivas síndromes parciais em estudos epidemiológicos, em jovens de 7 a 17 anos. Os pais são entrevistados em todos os casos, assim como as jovens de 11 anos ou mais. **Métodos:** 174 meninas, divididas em três grupos, foram avaliadas com a Sessão de Transtornos Alimentares do Development and Well-Being Assessment: 48 jovens com transtornos alimentares, 55 controles clínicos (com depressão, transtorno obsessivo-compulsivo ou doença gastrointestinal) e 71 controles da comunidade. Sensibilidade, especificidade e valores preditivos do instrumento foram pesquisados pela comparação dos diagnósticos pelo Development and Well-Being Assessment com diagnósticos psiquiátricos independentes. A confiabilidade teste-reteste foi investigada reaplicando-se o instrumento em 55 sujeitos após duas ou três semanas. **Resultados:** Para a detecção de qualquer transtorno alimentar segundo o DSM-IV e o CID-10, o diagnóstico final pelo Development and Well-Being Assessment apresentou sensibilidade de 100%, especificidade de 94%, valor preditivo positivo de 88%, valor preditivo negativo de 100% e 95% de concordância entre testes e retestes (Kappa de 0,81). **Conclusão:** A Sessão de Transtornos Alimentares do Development and Well-Being Assessment tem boas propriedades psicométricas para o uso em estudos clínicos e epidemiológicos.

**Descritores:** Transtornos da alimentação/diagnóstico; Transtornos da alimentação/epidemiologia; Hábitos alimentares; Anorexia nervosa; Bulimia; Manual diagnóstico e estatístico de transtornos mentais; Entrevista psicológica; Transtornos mentais; Crianças; Adolescente

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## Introduction

The current concepts of eating disorders (EDs) include the two well-established diagnoses, anorexia (AN) and bulimia nervosa (BN), as well as partial syndromes classified as “eating disorders not otherwise specified” in DSM-IV.<sup>1</sup> AN and BN occur mainly in females and can have a very poor outcome, with lower rates of complete remission in AN than BN.<sup>2</sup> AN has a mortality rate of 0.56% per year, the highest among all psychiatric disorders.<sup>3</sup> 54% die from complications of the eating disorder (ED), 27% from suicide and 19% from unknown or other causes.<sup>4</sup> Early treatment can improve outcome since the longer the treatment is postponed, the worse the response.<sup>5</sup> Early diagnosis is therefore vital.

Other reasons that make EDs an important health issue are: 1) their worldwide incidence (both in developed<sup>6-8</sup> and developing countries,<sup>9-10</sup> though the latter have not been extensively studied), 2) the evidence that their prevalence rate is rising over time,<sup>11-13</sup> 3) their characteristic onset during development, with a major impact on personal functioning (though the incidence of AN peaks in adolescence, there are many reports of its occurrence in the pre-pubertal phase;<sup>14-15</sup> BN peaks somewhat later, mainly in late adolescence and young adulthood<sup>16</sup>).

There is no Brazilian data about the incidence or prevalence of EDs in any age range. Nevertheless, clinical experience shows that eating disorders in children and adolescents result in a substantial number of referrals in the city of São Paulo.<sup>17</sup> This city has the only Brazilian service specialized in the treatment of children and adolescents with EDs, where the present study was carried out. In this service there are lots of youngsters on a waiting list for treatment, with a mean waiting time for each child of approximately 2 years.<sup>17</sup> 55% of the children with AN on the waiting list are from other cities or even from other states.<sup>17</sup>

In Brazil, the lack of specialized public units for the treatment of children and adolescents with EDs mirrors the lack of epidemiological studies in the field. In addition, carrying out epidemiological studies is a complex task since it demands specific validated diagnostic measures. Therefore, to increase knowledge about the impact of these disorders and to guide rational service planning in Brazil, it is necessary to validate a specific diagnostic measure for these disorders, in this age range.

There are only a few diagnostic measures for eating disorders in childhood and adolescence, all of them originally validated in English. Most are just one component of more comprehensive diagnostic measures of psychiatric disorders in childhood and adolescent, for example the eating disorder sections of the Child and Adolescent Assessment - CAPA,<sup>18</sup> Diagnostic Interview for Children and Adolescents - DICA,<sup>19</sup> Schedule for Affective Disorders and Schizophrenia - K-SADS;<sup>20</sup> these sections were not validated on clinical samples with eating disorders subjects. The Child Eating Disorder Examination<sup>21</sup> - ChEDE - is a diagnostic tool specially designed for children but it too lacks published validation data. None of these measures were validated in Brazil.

The Development and Well-Being Assessment - DAWBA is a recently developed package of questionnaires, interviews, and rating techniques designed to generate ICD-10 and DSM-IV psychiatric diagnosis in children and adolescents, originally created to be used in a British survey with 10,438 children in 1999.<sup>22-23</sup> Subsequently, the DAWBA has also been validated in Brazil, in a large epidemiological study (N = 1,251) carried out in a largely

urban municipality (Taubaté) in the State of São Paulo in 2001.<sup>24</sup> Originally, the DAWBA did not have a specific section on the assessment of EDs. The present study aimed to develop and validate the Eating Disorders Section of the Development and Well Being Assessment (DAWBA), in its Portuguese version, as a diagnostic measure that can be used in epidemiological studies of EDs in children and adolescents, collecting data suitable for generating DSM-IV and ICD-10 diagnoses.

## Methods

### 1. Measure

The Eating Disorders Section of the DAWBA was created with a similar format to the pre-existing sections. The section begins with structured questions about eating-related symptomatology and its impact on the child's life; these are suitable for administration by trained lay interviewers. If definite symptoms are identified by the structured questions, interviewers use semi-structured open-ended questions to get respondents to describe the problems in their own words. These descriptions are transcribed verbatim by the interviewers. A parent (or other caretaker) and the young person - if 11 year-old or older - are interviewed. The parent and young person's versions of the interviews are almost identical.

The DAWBA package includes a computer program that uses the answers to structured questions to generate preliminary computer diagnoses (additional information at <http://www.dawba.com/f0.html>); these are the starting point for the clinical review and formulation. Based on the open-ended as well as structured answers, experienced clinical raters generate final DAWBA diagnoses that do not necessarily agree with the preliminary computer ones.<sup>22</sup> For this validation study, the clinical raters were kept blind to the preliminary computer diagnoses, which permits a valid comparison of the computer and final DAWBA diagnoses made independently of one another.

The Eating Disorders Section of the DAWBA (paper and electronic copies available for inspection on [www.dawba.com](http://www.dawba.com)) was created simultaneously in Portuguese and English by three of the authors (TM, BFB, RG) and includes 53 questions: 42 are structured and 11 are open-ended. Some structured questions have binary 'yes/no' answers while others are rated on a 3, 4 or 5 point scale, depending on the question. The questions investigate issues such as distorted body image, weight and height, insight, fear of gaining weight, craving for food, presence and frequency of binges, behaviors for losing weight, compensatory behaviors, menstrual symptoms, physical consequences of abnormal eating behaviors, and the impact of relevant symptoms on a young person's well-being and social functioning. Each question, or group of related questions, corresponds to a diagnostic criterion from DSM-IV or ICD-10 for EDs. Both parent and child versions of the questionnaires have seven pages each. The administration time is around 20 minutes for subjects from community samples and around 50 minutes for subjects from clinical samples.

The questions that were originally formulated were subsequently improved in two successive rounds of piloting, initially with adults (n = 45) and subsequently with children and adolescents (n = 30).<sup>25</sup> Participants in these pilot phases either had established EDs or had other physical and psychiatric disorders that can prove difficult to distinguish from EDs: depression, obsessive-compulsive disorder or gastrointestinal disorders such as Crohn disease. All these pilot interviews were carried out by one of the authors (TM), and allowed refinement of the wording of questions to maximize

comprehensibility, and to increase the questions' ability to distinguish between the symptoms of EDs and the symptoms of other physical and psychiatric disorders. In addition, some redundant questions were dropped and a few extra questions were added to fill gaps that became apparent during piloting.<sup>25</sup> It was these improved and selected questions that formed the basis for the validation study, and that are available for inspection on the [www.dawba.com](http://www.dawba.com) website.

## 2. Sample and procedure

The validity study was carried out by using the Portuguese version of the Eating Disorders Section of the DAWBA to assess 174 girls, aged 7-17, drawn from three groups: 1) 48 girls with an ED; 2) 55 clinical controls, in treatment for unipolar depression ( $n = 21$ ), obsessive compulsive disorder ( $n = 14$ ) or gastrointestinal disease ( $n = 20$ ); and 3) 71 community controls. An additional inclusion criterion included living with at least one parent (or caretaker) who was willing to be interviewed. Exclusion criteria were: pregnancy or severe communication difficulties.

Clinical controls were included in the validation study for three reasons: 1) to investigate whether the measure would be able to discriminate EDs from physical and psychiatric disorders whose symptoms can mimic EDs; 2) to keep the interviewers and clinical raters blind to subjects' diagnoses, even when interviewing emaciated girls; and 3) to investigate how useful the measure might be in clinical practice, where it is often necessary to distinguish EDs from 'mimic' syndromes.

The sample of children and adolescents with eating disorders were recruited from the Childhood and Adolescence Eating Disorders Program of the Institute of Psychiatry, University of São Paulo. The sample of clinical controls with depression and obsessive-compulsive disorder were recruited in the Child and Adolescent Psychiatry Program of the same Institute. The clinical controls with intestinal disease were recruited in a pediatric general hospital of the same university. The community sample was recruited from schools and among hospital employees. A payment of R\$ 50,00 was offered to each participant pair (parent/child) in the validation study to cover travel expenses, to compensate for lost wages, and to encourage attendance at the scheduled interviews.

There were three interviewers for the validation study (two recently graduated psychologists and one recently graduated psychiatrist), all trained to apply the interviews. None of them had previous experience with EDs and they were blind to each subject's group.

For each of the subjects in the validation study, diagnoses of EDs were generated using three different methods, with each method being independent of the others.

1) Gold standard diagnosis: ICD-10 and DSM-IV based ED diagnoses were established through an open clinical interview of the child and the parent together, made by a child and adolescent psychiatry specialist in EDs who was blind to the group from which the subject came from, with the exception of the first nine subjects interviewed with eating disorders, who were already known to the service where the psychiatrist worked. These subjects had already initiated treatment in this service at the beginning of the research and were included to obtain a larger ED sample.

2) Preliminary computer diagnosis: a computer algorithm generated DSM-IV and ICD-10 ED diagnoses based solely on the structured information collected through the Eating Disorders Section of the DAWBA. The algorithm was built on combinatorial logic (OR, AND, NO, etc.) to generate categories rather than scores. The algorithm is included in a computer

program that is provided free of charge for non-profit use in developing countries ([www.dawba.com/fO.html](http://www.dawba.com/fO.html)).

3) Final DAWBA diagnosis: established by a specialist in EDs, who made the DSM-IV and ICD-10 based ED diagnoses following a careful review of all information obtained through open-ended and structured questions. This specialist was also blind to the group the children in the study came from, and was never the same specialist who made the gold standard diagnosis.

The test-retest reliability was investigated by reapplying the interview on 55 subjects (7 from the ED, 20 from the clinical sample and 28 from the community sample) 2 or 3 weeks after the first testing. The 1<sup>st</sup> and 2<sup>nd</sup> interviews were carried out by different interviewers, who were also blind to the group the child came from.

## 3. Consent and ethical approval

Before the subject and family member entered the pilot study or the main validation study, the caretaker was asked to sign an informed consent form.

This research was approved by the Ethics Commission for Research Projects Analysis (CAPPesq) of the Clinical Board of "Hospital das Clínicas", University of São Paulo (research protocol number 632/02).

## 4. Statistical analysis

The differences between subjects' ages between the groups were examined with the Brown Forsythe test, because the variances in age were different (Levene test demonstrated unequal variances and ANOVA could not be used). Multiple comparisons of the mean ages of the groups were carried out using the Dunnett test because this does not assume equal variances.

The agreement of the final DAWBA diagnoses and the preliminary computer diagnoses with the gold standard diagnoses were analyzed, using Kappa statistics for agreement on the exact diagnosis (AN, BN, partial syndrome, or no ED).

The sensitivity, specificity, positive and negative predictive values of the Eating Disorders Section of the DAWBA were calculated by comparing the preliminary computer diagnoses and the final DAWBA diagnoses with the gold standard diagnoses. To avoid inappropriately small cell sizes, these analyses were done for all EDs combined.

The test-retest reliability was calculated using Kappa coefficients. Once again, these analyses were done for all EDs combined to avoid inappropriately small cell sizes.

## Results

The three groups of subjects – with EDs; clinical controls; and community controls - differed by age. The mean ages (SD) for the three groups were 16.0 (1.6) for the ED group, 14.5 (2.4) for the clinical controls, and 15.5 (2.3) for the community controls. The difference in mean age between the three samples was statistically significant difference (Brown Forsythe,  $p < 0.05$ ). Using Dunnett's multiple comparison test, the only significant pair-wise difference was between the ED group and clinical controls.

The general agreement between the final DAWBA diagnoses and the preliminary computer diagnosis with the gold standard diagnosis are shown in Table 1, where the agreement was analyzed taking into account the specific type of ED (AN, BN and partial syndromes). As shown in Table 1, the kappa coefficients were high in general, indicating agreement between the DAWBA diagnoses and the gold standard diagnoses.

**Table 1 – Agreement of final DAWBA diagnosis and preliminary computer diagnosis with gold standard diagnosis**

DAWBA diagnostic procedure	Diagnosis	Gold standard diagnosis			
		Without <sup>(1)</sup> ED	<sup>(2)</sup> AN	<sup>(3)</sup> BN	<sup>(4)</sup> PS
<b>Final DAWBA diagnosis, DSM-IV</b>	Without ED	118	–	–	–
	Anorexia nervosa	–	9	–	1
	Bulimia nervosa	–	–	15	6
	Partial syndromes	7	–	1	17
	% of agreement			91%	
	Kappa			0.82	
<b>Preliminary computer diagnosis, DSM-IV</b>	Without ED	114	–	–	3
	Anorexia nervosa	–	9	1	2
	Bulimia nervosa	2	–	12	7
	Partial syndromes	9	–	3	12
	% of agreement			85%	
	Kappa			0.68	
<b>Final DAWBA diagnosis, ICD-10</b>	Without ED	118	–	–	–
	Anorexia nervosa	–	7	2	1
	Bulimia nervosa	–	–	12	7
	Partial syndromes	7	–	3	17
	% of agreement			89%	
	Kappa			0.76	
<b>Preliminary computer diagnosis, ICD-10</b>	Without ED	114	–	–	4
	Anorexia nervosa	–	7	–	1
	Bulimia nervosa	1	–	11	5
	Partial syndromes	10	–	6	15
	% of agreement			85%	
	Kappa			0.67	

NOTE: The cells in gray show the number of subjects that received the DAWBA diagnosis concordant with the gold standard in each diagnostic category (without eating disorder, anorexia nervosa, bulimia nervosa, partial syndromes).

(1) ED = eating disorder. (2) AN = anorexia nervosa. (3) BN = bulimia nervosa. (4) PS = partial syndromes.

The indexes of sensitivity, specificity and predictive values are shown in Table 2. They were calculated for the presence or absence of an ED when comparing DAWBA diagnoses with the gold standard diagnoses. There were no differences in the indexes when considering DSM-IV or ICD-10 systems.

The mean interval between test and retest was 14.6 days (minimum of 14 days and maximum of 21 days). The test-retest agreement was calculated for the presence or absence of an ED diagnoses (Table 3). Of the 11 subjects detected by the final DAWBA diagnosis as suffering from an ED initially, 8 had their ED general diagnosis confirmed by the retest. The final DAWBA diagnosis, in the retest phase, did not miss any subject with a gold standard ED diagnosis and eliminated 3 of the 4 false positives detected in the test phase.

## Discussion

The Eating Disorders Section of the DAWBA was created simultaneously in Portuguese and English, and this article

describes the first validation study carried out anywhere in the world; validation of the English version is currently under way. The final DAWBA diagnosis of an eating disorder according to DSM-IV and ICD-10 classifications had the following screening properties by comparison with the independent 'gold standard' clinical diagnosis: a sensitivity of 100%; specificity of 94%, positive predictive value of 88%; and negative predictive value of 100%; there was good test-retest agreement (Kappa 0.81). These are good psychometric properties, potentially suiting the Portuguese version of The Eating Disorders Section of the DAWBA for clinical work and community surveys. High sensitivity and specificity are advantages in both settings; so too is the measure's ability to distinguish between EDs and other physical and psychiatric disorders with similar symptoms. For example, weight loss can be seen with malabsorption or depression; deliberate avoidance of specific foods can accompany obsessive compulsive disorder and gastrointestinal diseases; and distorted self image is common in depression. The ability of the final DAWBA diagnosis to distinguish between young people with and without ED is paralleled by a good



**Table 2 – Standard psychometric indices of final DAWBA diagnosis and preliminary computer diagnosis when compared to gold standard diagnosis (n = 174)**

DAWBA diagnostic procedure	Diagnosis	Gold standard diagnosis		Psychometric indices				
		Without <sup>(5)</sup> ED	With ED	<sup>(6)</sup> k	<sup>(7)</sup> Sn (%)	<sup>(8)</sup> Sp (%)	<sup>(9)</sup> PPV (%)	<sup>(10)</sup> NPV (%)
<sup>(1)</sup> Final, DSM-IV	Without ED	118	0	0.91	100	94	88	100
	With ED	7	49					
<sup>(2)</sup> Computer, DSM-IV	Without ED	114	3	0.81	94	91	81	97
	With ED	11	46					
<sup>(3)</sup> Final, ICD-10	Without ED	118	0	0.91	100	94	88	100
	With ED	7	49					
<sup>(4)</sup> Computer, ICD-10	Without ED	114	4	0.80	92	91	80	97
	With ED	11	45					

NOTE: The cells in gray show the number of subjects that received the DAWBA diagnosis concordant with the gold standard in each diagnostic category (with or without eating disorder).

(1) Final DAWBA diagnosis, DSM-IV system. (2) Preliminary computer diagnosis, DSM-IV system. (3) Final DAWBA diagnosis, ICD-10 system. (4) Preliminary computer diagnosis, ICD-10 system. (5) ED = eating disorder. (6) k = kappa value. (7) Sn = sensitivity. (8) Sp = specificity. (9) PPV = positive predictive value. (10) NPV = negative predictive value.

differentiation between the different types of eating disorder, both for DSM-IV and ICD-10 (kappas around 0.8; Table 1).

The DAWBA can be used to generate diagnoses in two ways: preliminary computer diagnoses are based solely on the structured DAWBA interview, whereas the final DAWBA diagnoses are made by an experienced clinician who reviews not only the structured DAWBA interview but also the open-ended answers to semi-structured DAWBA probes. Clinics or research studies who do not have access to an experienced clinician can still use the preliminary computer diagnoses with good psychometric properties, e.g. a sensitivity of 94%, a specificity 91% and kappa of 0.81 for a DSM-IV diagnosis of any ED (Table 2). When an experienced clinician is available to refine the computer diagnosis, the psychometric properties are even better (see properties of the final DAWBA diagnoses, Table 2).

It is not easy to compare our results with previous measures since there are few if any well-validated diagnostic measures of EDs in children and adolescents. Like the DAWBA, several other general measures of child and adolescent

psychopathology include a section on EDs, but the sensitivity and specificity of these sections is not generally reported. One exception is the eating disorders section of the Diagnostic Interview Schedule for Children, 2nd Edition (DISC-2.1), which is a highly structured interview. Sensitivities of 78% for the detection of anorexia nervosa and of 88% for bulimia were reported,<sup>26</sup> though this validation study was limited by its small sample size (involving just 21 subjects in the eating disorder group), the absence of a healthy comparison group, and the lack of 'blinding' of the interviewer. The ChEDE<sup>21</sup> is a semi-structured diagnostic measure that seems promising, but only the pilot study has been published, and there are no data available for comparison with our findings.

The Eating Disorders Section of the DAWBA successfully combines features of respondent-based and investigator-based measures. It resembles a respondent-based measure such as the DISC<sup>27</sup> in that it uses lay interviewers, fixed questions and computerized diagnostic algorithms. The two main differences are that the lay interviewers transcribe the detailed verbatim responses to open-ended questions, and these responses can be used by experienced clinical to refine the preliminary computer diagnosis.<sup>22</sup>

When The Eating Disorders Section of the DAWBA is compared to other interviewer-based measures, such as the CAPA<sup>18</sup> or the ChEDE,<sup>21</sup> it has a similar role, but presents distinct advantages and disadvantages. In traditional semi-structured interviews, it is the interviewer who addresses the symptoms and goes on asking questions to clarify the details until he or she feels confident enough to make the rating. By contrast, the DAWBA clinical raters have to judge whether symptoms are present or not on the basis of the answers obtained by lay interviewers at some earlier time. Detailed transcripts of answers to open-ended questions generally provide enough information to do this, but when they do not, the clinical raters cannot themselves ask additional questions.<sup>22</sup> This disadvantage is offset by a major economy - expensive and scarce clinical time is not wasted either on routine questioning or on traveling to carry out numerous interviews. An extensive survey in England carried out in 1999, studied 10 438 children

**Table 3 – Test-retest agreement for final DAWBA diagnosis and preliminary computer diagnosis (identical for DSM-IV and ICD-10)**

Test	Final DAWBA diagnosis		Preliminary computer diagnosis	
	Retest		Retest	
	Without ED	With ED	Without ED	With ED
Without <sup>(1)</sup> ED	44	–	44	1
With ED	3	8	3	7
<sup>(2)</sup> Agreement	95%		93%	
Kappa	0.81		0.74	

NOTE: The cells in gray show the number of subjects that received the test diagnosis concordant with the retest diagnosis (with and without eating disorder).

(1) ED = eating disorder. (2) percentage of agreement

using 200 lay interviewers "in the field" but only required three clinical raters "back at base."<sup>22-23</sup>

The Eating Disorders Section of the DAWBA has some potential advantages over the ChEDE,<sup>21</sup> which collects most of the information from the young people themselves without also asking parents. By obtaining detailed parent reports, the DAWBA makes it much easier to diagnose an ED, particularly in the common situation where the young people deny symptoms and/or lack insight. The denial of symptoms is the reason why some children with EDs obtain low scores in the ChEDE.<sup>21</sup> On the other hand, the ChEDE has the advantage that the child interview is designed for children young as 7 years old;<sup>21</sup> the DAWBA parent interview covers 7-17 year olds, but the DAWBA youth interview only covers 11-17 year olds. The lower limit of 11 years for interviewing children with DAWBA stemmed from previous studies showing that symptoms are not reliably reported by younger children<sup>28-29</sup> and from similar experience during pre-piloting of the other sections of the DAWBA in England with 8-10-year-olds.<sup>22</sup>

The Eating Disorders Section of the DAWBA is designed to assess children and adolescents aged between 7 to 17 years of age. It is a limitation of this study not to have included subjects with EDs who were male or younger than 11 years old, but such cases are rare and it would probably have taken many years to have accumulated a sufficiently large sample of males or younger children with EDs to warrant analysis.

There were statistically significant differences between the ages of the samples studied, with the average age in the ED sample being about 18 months higher than the clinical controls. This relatively small difference in mean age was probably not an important limitation since it is unlikely to be accompanied by cognitive or behavioral differences that would be relevant to the assessment of EDs via parental report as well as self report. Since we did not measure the socio-economical status, education level or the presence of other psychiatric symptoms in the sample, we are not able to comment on the comparability of the groups on these variables.

## Conclusion

The Eating Disorders Section of the DAWBA is potentially useful as a clinical tool, facilitating skilled clinical assessment or, where necessary, providing 'second best' computerized diagnoses when no suitable clinician is available. The measure is also likely to be useful in community studies of rates of EDs in children and adolescents that are carried out in order to facilitate service planning. Further research is needed to provide independent replication of our findings, to investigate the validity of the measure for males and young children, and to establish whether the measure would be useful as a screening tool for high risk groups such as adolescent girls.

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