Is it always the same? Variability of depressive symptoms across six European countries

Sebastian Bernert [a],*, Herbert Matschinger [a], Jordi Alonso [b], Josep Maria Haro [c],
Traolach S. Brugha [d], Matthias C. Angermeyer [e]
the ESEMeD / MHEDEA 2000 investigators [1]

[a] *University of Leipzig, Health Economics Research Unit, Department of Psychiatry, Leipzig, Germany*
[b] *Institut Municipal d'Investigació Mèdica (IMIM-IMAS), Health Services Research Unit, Barcelona, Spain*
[c] *Fundacio Sant Joan de Déu-SSM, Barcelona, Spain*
[d] *Section of Social and Epidemiological Psychiatry, University of Leicester, Leicester, United Kingdom*
[e] *Center for Public Mental Health, Gösing am Wagram, Austria*

Abstract

Using common diagnostic systems together with structured interviews to assess mental disorders has made it possible to compare diagnostic groups of mental disorders across countries. The implicit assumption is that the symptomatology of a particular disorder as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) will not vary between different countries. However, it is conceivable that there will be some variability in the symptom patterns. The present study examines if differences in depressive symptom patterns across European countries can be found and if there are different associations between symptoms and the latent construct depression. Data from 4025 individuals of the European Study of the Epidemiology of Mental Disorders (ESEMeD) project were analysed. Individuals were interviewed using the Composite International Diagnostic Interview (CIDI 3.0). Confirmatory factor analysis was used to examine the associations between depressive symptoms and the latent construct of depression in each country. The proportions of endorsed symptoms of depression showed only slight variation across European countries and only minor to moderate differences in the associations between depressive symptoms and the latent construct depression. The results demonstrated that in European countries using a fully structured and standardized interview based on European-American diagnostic concepts leads to similar results with regard to depressive symptom patterns.
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Keywords: Major depression; DSM-IV; Europe; Epidemiology

1. Introduction

With the development of reliable and widely accepted diagnostic systems, the Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III) and the International Classification of Diseases (ICD-10), a common language in psychiatry was established. The newly developed diagnostic systems helped researchers and clinicians to overcome the previous heterogeneity of diagnostic systems used to define psychiatric cases. Structural classification systems, such as the fourth edition of the Diagnostic Statistical Manual of Mental Disorders (DSM-IV), define mental disorders by relying on the number of symptoms to establish diagnoses (Thakker and Ward, 1998). Based on these modern diagnostic systems, formal structured interviews, such as the Composite International Diagnostic Interview (CIDI) and the Structured Clinical Interview for DSM-IV (SCID), were developed to facilitate the assessment of mental disorders in a standardized way. Using common diagnostic systems together with structured interviews to assess mental disorders has made it possible to compare diagnostic groups of mental disorders across countries. This has been welcomed by epidemiologists as a major step forward in the development of the field (Dohrenwend, 1990). However, the implicit thesis of the universality of psychopathology has drawn criticism from cross-cultural psychiatrists. It has been pointed out that diagnostic categories defined in the U.S. and Western Europe may not exist, or may exist in different forms, in other cultures. Therefore, the cross-cultural application of criteria such as DSM-IV may lead to misleading results (Littlewood, 1990), a problem that has also been alluded to as "category fallacy" (Kleinman, 1977). A similar criticism has also been raised against the use of the CIDI, as this instrument was developed in the U.S. and may not be suitable to adequately capture psychopathology in non-western cultures (Draguns and Tanaka-Matsumi, 2003).

An implicit assumption is that the symptomatology of a particular disorder as defined by DSM-IV will not vary between different countries. However, it is conceivable that there will be some variability in symptom patterns. For example, the diagnosis of major depression according to DSM-IV requires the existence of at least five out of a total of nine depressive symptoms. Following this rule, there are a number of different symptom combinations that would lead to the same diagnosis of major depression. Thus, it is possible that in some countries psychomotor symptoms of depression are more frequent compared with other countries. This may have implications for the treatment that is required (Sobin and Sackeim, 1997), the prognosis of the depressive disorder (Loas, 1996), and

the willingness of someone who suffers from this disorder to seek treatment (Galbaud du et al., 1999).

Based on data from the European Study of the Epidemiology of Mental Disorders (ESEMeD), we will address the following questions:

1. Are there differences in the frequency of reported depressive symptoms across countries using a standardized diagnostic interview based on DSM-IV?
2. Are the symptom patterns the same when applying the diagnostic criteria of DSM-IV for major depressive disorder or are there some variations between countries?
3. Is the association between symptoms and the latent construct depression the same across countries?
4. Are there variations in the variance of symptoms explained by the latent construct depression across countries?

2. Methods

The European Study of the Epidemiology of Mental Disorders (ESEMeD) (Alonso et al., 2002, 2004) is the first large-scale epidemiological study in Europe that has employed a comparable sampling strategy together with the use of a standardized instrument translated and adapted for use in different European countries to assess a broad range of mental disorders.

2.1. Subjects

The ESEMeD project is a cross-sectional study based on a stratified multi-stage random sample of 21,425 adult respondents (aged 18 years and older) living in non-institutional settings in six European countries (Belgium $N=2419$, France $N=2894$, Germany $N=3555$, Italy $N=4712$, Netherlands $N=2372$, Spain $N=5473$). Owing to differences in access to specific population data, the sampling frame and the number of sampling stages used to obtain the final sample differed across countries. In all countries, except for France and the Netherlands, the first stage consisted of municipalities, which were stratified by region, population size or both. Selection of municipalities was proportional to size within strata and was either systematic or random depending on the country. In France, the first stage consisted of a list of telephone numbers, stratified by region and size of the cities. In the Netherlands, the first stage consisted of a random sample of addresses selected from the postal registries, with each address having the same probability of selection. In Germany and the Netherlands, the second stage units already consisted of a random selection of individuals.

The other countries that participated in the study required one or more additional stages before the selection of the individuals for interview. Thus, three sampling stage units were required to obtain the final sample in Belgium, France and Italy. In Spain, four different stages were used. The second stage consisted of the systematic selection of census tracts from the municipalities selected in the first stage. The third stage consisted of the systematic selection of households within each census tract. The interviewer had to make a list of all households in the census tract, systematically select six households, and secure one interview in each of them. If he or she was successful, then the census tract was completed. A more detailed description of the methods and the participants in the ESEMeD project is provided elsewhere (Alonso et al., 2004). The overall response rate for the six countries was 61.2%, with the highest rates in Spain (78.6%) and Italy (71.3%), followed by Germany (57.8%), the Netherlands (56.4%), and Belgium (50.6%) and the lowest in France (45.9%). The project is part of the World Health Organization—World Mental Health Survey Initiative (Kessler and Üstün, 2000). The analyses presented in this article are based (1) on respondents who had at least endorsed the screening questions for depressive disorders plus one out of nine symptom questions, and (2) on respondents who fulfilled the diagnostic criteria for lifetime DSM-IV major depressive disorder. The resultant sub-samples include 4025 and 2590 individuals, respectively (Belgium=489/359, France=828/642, Germany=525/369, Italy=663/445, Netherlands=596/471 Spain=924/664).

2.2. Measure

Interviews were conducted in person using the World Mental Health Survey Initiative Version of the World Health Organization Composite International Diagnostic Interview (CIDI 3.0) (Kessler and Üstün, 2004). The CIDI 3.0 is a comprehensive, fully structured diagnostic interview for the assessment of mental disorders. It provides, by means of computerized algorithms, lifetime and current (12 months and 1 month prior to the interview) diagnoses according to the International Classification of Diseases (ICD-10) (World Health Organization, 1993) and the Diagnostic and Statistical Manual of Mental Disorders (DSM- IV) (American Psychiatric Association, 1994). It was developed to be used by trained lay interviewers. Previous versions of the CIDI have been shown to be reliable and valid (Robins et al., 1988; Wittchen, 1994; Wittchen et al., 1998). Moderate to good concordance between the CIDI 3.0 and the clinician-administered non-patient edition of

the Structured Clinical Interview for DSM-IV (SCID) was found (Haro et al., 2006). The CIDI 3.0 was first produced in English and underwent a rigorous process of adaptation in order to obtain conceptually and cross-culturally comparable versions in each of the target countries and languages. The translation and back-translation of the instrument were carried out by scientists with outstanding English language skills. All translators were knowledgeable in American English and culture. An expert panel was consulted to discuss problems with regard to item wording, response categories and the adaptation to the cultural context. The expert group was formed by psychiatrists, psychologists, and other mental-health service experts. Focus groups with individuals from the general population and patients were conducted to check comprehensibility of the interview schedule. Selection of participants in the groups was governed by the premise that the individuals selected should be representative of the sampling population for the study. It was attempted to reflect the structure of the general population in the participating European countries as closely as possible. Finally, interviews were conducted that served as a test for the feasibility of the instrument in an interview situation. These interviews were carried out by staff who had not otherwise been involved in the translation process. The final forward translation was translated back into English by an independent translator, whose mother tongue is American English. The translator had no knowledge of the questionnaire. Discrepancies between the forward translation and the back translation were discussed by the expert panels. All suggested changes were then implemented in the final version of the questionnaire. All six translations of the depressive symptom questions are available as Supplementary material to the electronic publication of the manuscript.

The CIDI 3.0 is computerized in order to facilitate its administration. It includes fully structured questions on presence and persistence of clusters of psychiatric symptoms followed by probes for age of onset and lifetime course. At the beginning of the questionnaire, a screening section (a Lifetime Psychiatric Screening Instrument) was administered to all respondents. It contains screening questions for mood (i.e. Major Depression and Dysthymia) and anxiety disorders. All participants responding positively to any of the screening questions had to complete the CIDI section of the specific disorder prompted by that question. With regard to depressive disorders, the following three screening questions were asked: 'Have you ever in your life had a period lasting several days or longer when most of the day you felt sad, empty or depressed?', 'Have you ever

had a period lasting several days or longer when most of the day you were very discouraged about how things were going in your life?' and 'Have you ever had a period lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies, and personal relationships?'. All respondents who answered positively to at least one of these questions entered the depression module of the questionnaire. The symptom questions in the depression module of the questionnaire include questions about all symptoms in nine symptom groups necessary to make a diagnosis according to the DSM-IV criteria. Probe items were asked to exclude depression symptoms that were attributable to physical causes The symptom questions ask whether there was a time in his/her life where the respondent was in a sad or depressed mood (Mood), has lost interest in most things he/she usually enjoys (Interest), has gained or lost a substantial amount of weight (Weight), has experienced sleep disturbances (Sleep), was agitated or slowed down (Activity), was tired and out of energy (Energy), has experienced feelings of guilt or worthlessness (Guilt), has lost his normal ability to concentrate (Cognitive) or has had recurrent thoughts of death or suicidal ideations (Suicide). All these symptom questions refer to the same time period of at least 2 weeks.

2.3. Statistical analysis

Descriptive statistics were calculated to assess the proportions of symptoms endorsed in the depression section of the interview, and confirmatory factor analysis (CFA) was used to investigate the association between symptoms and the latent construct depression. Since there was no variation in the prevalence of the mood item, it was excluded from CFA. Therefore, the CFA is based on eight depression symptoms (Interest, Weight, Sleep, Activity, Energy, Guilt, Cognition, Suicide). In order to check the dimensional structure of the dichotomous symptom variables of depression, a one-dimensional confirmatory factor model was adopted. It is assumed that these indicators measure one and only one latent dimension to be called "depression". The estimator for this type is a robust weighted least squares estimator using tetrachoric correlations. The estimation procedure is described in appendix 4 of the Technical Appendices of the Mplus software manual (Muthén, 2004). The factor model is considered a congeneric one, as loadings as well as the error variances are allowed to vary, but error correlations are restricted to be zero (Jöreskog, 1971). Testing the inequality of loadings for all six countries results in a Chi-square of 187.1, $df = 26$, and a Tucker–Lewis Index of 0.880. Since the Tucker–Lewis does not reach the threshold of 0.900 that indicates a good model fit, the assumption of a unique measurement of depression for all countries clearly has to be rejected and the model was estimated for each country separately. R^2 measures were calculated to compare the differences of variance of symptoms explained by the latent construct depression across countries. The analyses were carried out using the program Mplus (Muthén and Muthén, 2004).

3. Results

3.1. Frequencies of reported symptoms

In Table 1 the proportions of symptoms endorsed by respondents in the different countries, without the application of diagnostic algorithms, are presented. The highest rates of endorsed symptoms are found for mood symptoms (Mood). Periods of being sad or of feeling empty or depressed are reported by almost every individual in the sample. The proportions show almost no variation across countries (95.3%–97.6%). Sleep disturbances (Sleep) range from a low of 85.4% in the Netherlands to a high of 90.7% in France; cognitive disturbances (Cognitive) range from a low of 76.4% in Germany to a high of 87.9% in the Netherlands. Moderate proportions of endorsed symptoms are reported for the loss of the ability to concentrate (Cognitive: range from 75.6% to 87.9%), loss of interest (Interest: range from 75.4% to 83.2%) and feelings of guilt and worthlessness (Guilt: range from 66.5% to 82.0%). The lowest overall rates of endorsed symptoms as well as the largest differences between countries can be found for psychomotor symptoms (Activity) where the proportion of endorsed symptoms ranges from a low of 39.0% in Germany to a high of 55.7% in Spain. The second lowest rates of endorsed symptoms are found for suicidal ideations and thoughts (Suicide), ranging from a low of 58.4% in Italy to a high of 69.6% in France.

In Table 1, the proportions of symptoms endorsed by those respondents who fulfilled the diagnostic criteria of DSM-IV for major depressive disorder are also reported. As expected, the percentages are higher for all symptoms across all countries. However, the symptom patterns are quite similar to those observed without diagnostic restrictions. Again, for instance, psychomotor symptoms (Activity) are endorsed least frequently across all countries and show the largest differences between countries. Second lowest percentages are found for suicidal ideations and thoughts (Suicide).

Table 1
Proportions of endorsed symptoms for the total sample and for the sub-sample with DSM-IV lifetime diagnosis of major depression (MD) (%, S.D.).

Symptom	Sample	Belgium	France	Germany	Italy	The Netherlands	Spain
		(Total *N*=489)	(Total *N*=828)	(Total *N* =525)	(Total *N* =663)	(Total *N* =596)	(Total *N* =924)
		(MD=359)	(MD=642)	(MD=369)	(MD=445)	(MD=471)	(MD=664)
Mood	Total sample	97.3 (16.0)	95.3 (21.2)	96.6 (18.2)	96.8 (17.5)	96.1 (19.3)	97.6 (15.3)
	Major depression	99.4 (7.5)	96.9 (17.4)	98.6 (11.6)	97.5 (15.5)	97.2 (16.4)	98.2 (13.3)
Interest	Total sample	83.2 (37.4)	81.9 (38.5)	75.4 (43.1)	78.9 (40.8)	80.7 (39.5)	78.1 (41.4)
	Major depression	89.7 (30.4)	89.3 (31.0)	82.4 (38.1)	88.9 (31.3)	87.5 (33.1)	88.0 (32.5)
Weight	Total sample	72.4 (44.8)	69.1 (46.2)	70.3 (45.7)	68.2 (46.6)	66.1 (47.4)	71.5 (45.1)
	Major depression	76.9 (42.2)	75.2 (43.2)	75.9 (43.0)	76.6 (42.3)	71.8 (45.1)	79.8 (40.2)
Sleep	Total sample	88.5 (31.9)	90.7 (29.1)	88.6 (31.8)	87.2 (33.5)	85.4 (35.3)	86.7 (40.0)
	Major depression	94.4 (22.9)	95.0 (21.8)	92.4 (26.6)	92.4 (30.3)	89.8 (30.3)	92.2 (26.9)
Activity	Total sample	46.0 (49.9)	45.8 (49.9)	39.0 (48.8)	41.8 (49.4)	41.1 (49.2)	55.7 (49.7)
	Major depression	52.1 (50.0)	50.8 (50.0)	45.8 (49.9)	50.33 (50.1)	43.7 (49.6)	66.1 (47.4)
Energy	Total sample	77.9 (41.5)	75.8 (42.8)	76.8 (42.3)	74.5 (43.6)	85.6 (35.2)	76.6 (42.3)
	Major depression	84.1 (36.6)	82.6 (38.0)	87.5 (33.1)	85.8 (34.9)	91.9 (27.2)	87.0 (33.6)
Guilt	Total sample	71.8 (45.1)	74.9 (43.4)	66.5 (47.3)	68.3 (46.6)	82.0 (38.4)	68.7 (46.4)
	Major depression	76.0 (42.7)	80.5 (39.6)	74.3 (43.8)	78.2 (41.3)	85.1 (35.6)	76.1 (42.7)
Cognitive	Total sample	76.5 (42.5)	80.3 (39.8)	76.4 (42.5)	75.6 (43.0)	87.9 (32.6)	77.8 (41.6)
	Major depression	85.0 (35.8)	87.2 (33.4)	85.9 (34.8)	87.6 (32.9)	93.6 (24.4)	86.9 (33.7)
Suicide	Total sample	63.6 (48.2)	69.6 (46.0)	65.3 (47.6)	58.4 (49.3)	63.3 (48.3)	60.0 (49.0)
	Major depression	71.0 (45.3)	76.0 (42.7)	72.4 (44.8)	63.6 (48.2)	67.9 (46.7)	68.5 (46.5)

3.2. Factor loadings on the latent construct depression

Table 2 presents standardized factor loadings as results of the CFA using the symptom items to generate the latent factor depression. The mood item was excluded from the confirmatory factor analysis due to the fact that it shows almost no variation and, therefore, does not discriminate between the countries. The cognitive symptom (loss of concentration) shows the highest factor loadings across countries and ranges from a low of 0.538 in Germany to a high of 0.806 in Spain and 0.803 in France. Next comes loss of energy, which ranges from 0.493 in France to 0.753 in Italy. The lowest factor loadings are found for suicidal ideations and thoughts, with a range from a low of 0.204 in the Netherlands to a high of 0.558 in Belgium (this also represents the largest difference in factor loadings across countries). Psychomotor symptoms show the second

Table 2
Factor loadings on depression (standardized loadings).

Symptom	Belgium	France	Germany	Italy	The Netherlands	Spain
Cognitive	0.707	0.803	0.538	0.786	0.610	0.806
Energy	0.665	0.493	0.674	0.753	0.668	0.597
Activity	0.434	0.521	0.590	0.673	0.544	0.748
Interest	0.459	0.539	0.669	0.678	0.641	0.669
Guilt	0.499	0.503	0.549	0.601	0.439	0.626
Sleep	0.623	0.383	0.330	0.478	0.405	0.419
Weight	0.327	0.476	0.368	0.487	0.490	0.530
Suicide	0.558	0.317	0.206	0.270	0.204	0.420
Chi-square test of model fit	21.965	20.882	17.832	22.180	15.384	46.405
Value						
df	15	17	16	18	12	17
P-value	0.1087	0.2316	0.3338	0.2237	0.2211	0.0001
TLI [a]	0.948	0.981	0.988	0.993	0.959	0.953
RSMEA [b]	0.031	0.017	0.015	0.019	0.022	0.043
SRMR [c]	0.078	0.058	0.060	0.047	0.076	0.074

[a] Tucker–Lewis Index.
[b] Root mean square error of approximation.
[c] Standardized root mean square residual.

largest differences, ranging from a low of 0.434 in Belgium to a high of 0.748 in Spain. The smallest differences in factor loadings are found for feelings of guilt and worthlessness, ranging from a low of 0.439 in the Netherlands to a high of 0.626 in Spain. Looking at the simple ranking of symptom loadings across countries, it is clear that Italy and Spain, respectively, have the highest factor loadings in six out of eight symptom groups (Interest, Weight, Activity, Energy, Guilt, Cognitive), whereas Germany and Belgium have the lowest factor loadings in five symptom groups (Interest, Weight, Sleep, Activity, Cognitive) compared with the other countries. Comparing the ranking of symptom factor loadings in each country may provide some clues to the differences in symptom patterns across countries. In four out of six countries, the cognitive item shows highest factor loadings, followed by the interest item and the energy item. The factor loadings for the loss of energy item rank highest in Italy and second in Germany followed by the Netherlands and Belgium. Factor loadings for the loss of interest item rank highest in Italy and second in Germany and Spain.

3.3. Explained variance of symptoms

The proportion of the variance of symptoms explained by the latent construct depression is reported in Table 3.

Lowest rates of explained variance are found for the suicide item, which ranges from 4% in Germany and the Netherlands to 31% in Belgium, followed by the weight item ranging from 11% in Belgium to 28% in Spain. The highest percentage of explained variance is reported for the cognitive symptom. Explained variance ranges from a low of 29% in Germany to a high of 65% in Spain. The second highest rates of explained variance are found for energy, with a range from 24% in France to 57% in Italy. The activity item shows the largest differences of

Table 3
Explained variance by symptom (R^2).

Symptom	Belgium	France	Germany	Italy	The Netherlands	Spain
Cognitive	0.499	0.644	0.289	0.617	0.372	0.650
Energy	0.442	0.243	0.454	0.567	0.447	0.356
Interest	0.211	0.290	0.447	0.460	0.411	0.448
Activity	0.188	0.271	0.348	0.453	0.295	0.559
Guilt	0.249	0.253	0.301	0.361	0.193	0.392
Sleep	0.388	0.146	0.109	0.228	0.164	0.175
Weight	0.107	0.227	0.136	0.237	0.240	0.281
Suicide	0.312	0.100	0.043	0.073	0.042	0.176

explained variance across countries with a range from 19% in Belgium to 56% in Spain.

4. Discussion

4.1. Similarities

The data presented here show that the prevalence of depressive symptoms as assessed with the CIDI 3.0 is quite similar in the six European countries. The same applies to the symptomatology of major depressive disorder as defined by DSM-IV. Also, the association between depressive symptoms and their standardized factor loadings on the latent variable depression shows only small to moderate variations across countries. Finally, the amount of variance of the symptoms explained by the latent construct depression shows only minor differences between countries. These findings indicate that the pattern of depressive symptoms is similar rather than different across the six European countries and that the importance of single symptom groups for the diagnosis of depression does not vary a lot across these countries. Thus, measuring depressive symptoms with a standardized interview such as the CIDI 3.0 and applying a diagnostic algorithm that is defined by a structural classification system (DSM-IV) to generate diagnosis leads to quite similar results in Western European countries. This might be due to the fact that all countries under analysis are comparable to a large extent with regard to their cultural background. Our findings are in line with other studies on depression that employed the CIDI and reported relative consistency of symptom patterns across different countries (Simon et al., 2002; Weissman et al., 1996). However, this does not necessarily indicate that the presentation of depression is universal. Studies in countries with non-Western cultural background may yield quite different results.

4.2. Differences

Nevertheless, there are a few remarkable differences across countries that require further discussion. Although, the overall differences in factor loadings are rather small, some countries tend to be more similar to each other than others. It was found that Italy and Spain often show higher factor loadings compared with Belgium and Germany in almost all symptom groups. France and the Netherlands show moderate factor loadings in all symptom groups. Ordering the factor loadings for each symptom across countries, it was found that the factor loadings in Spain and Italy rank

highest on the psychomotor symptom, feelings of guilt and worthlessness, weight gain or loss, loss of interest and the cognitive symptoms of depression. Compared with these high ranks in factor loadings, it was found that Belgium and Germany rank lowest on interest and weight gain or loss. In addition, Germany shows low factor loadings in suicide and sleep disturbance items. There is no general explanation for these differences in the literature about cross-cultural psychology. Nevertheless, it is worth noting that the Romance countries (Italy, Spain, France) seem to be more similar to each other as compared with the other countries (Netherlands, Germany, Belgium). Differences in the expression of mental disorders reported usually refer to differences found when comparing non-Western with Western societies or people from different ethnic groups within one country (Parker et al., 2001; Iwata and Buka, 2002). In Europe, several cross-national studies on the epidemiology of mental disorders were conducted making use of comparable assessment strategies (Lépine et al., 1997; Dowrick et al., 1999). However, none of them compared the symptomatic profile of mental disorders across countries. On the other hand, cross-cultural research has not made use of standardized diagnostic instruments to assess mental disorders. Therefore, there is still a lack of theoretical considerations regarding how to explain different symptom patterns across countries. The presented study was intended to be exploratory in nature and not explanatory, i.e. we have assessed whether there are differences in the manifestation of depressive disorders across countries without trying to explain these. More explanatory analyses should be carried out in order to investigate the conditions of these differences and their possible implications for the treatment and course of depressive disorders.

4.3. Limitations

The results reported here should be interpreted bearing the following limitations in mind. Although, a careful and thorough translation procedure was carried out in all of the participating countries, it is still possible that the meaning of the questions may not be the same after translating the instrument into five different languages, i.e. the semantic equivalence is assumed, but no linguistic analyses were carried out to test whether the meaning across countries is really exactly the same. Second, other contextual factors, such as stigmatisation across countries, were not assessed. Stigma might affect the willingness to report depressive symptoms depending on the different cultural contexts and, therefore, affect the sensitivity of the used instrument (Patten, 2003). Previous studies have shown that in societies where mental disorders are highly stigmatised

individuals tend to express their emotional distress through somatic complaints (Kirmayer and Groleau, 2001). In some countries, low survey response rates were obtained. This could have led to a bias in reported depressive symptoms. In some surveys non-response was positively related to mental morbidity (Kessler et al., 1995) and may, therefore, have led to an underestimation of reported symptoms of depressive disorders.

4.4. Conclusion

The similarities found in the expression of depression in the ESEMeD project data suggest that in European countries using a fully structured and standardized interview based on European-American diagnostic concepts leads to similar results with regard to depressive symptom patterns and the importance of depressive symptoms for the diagnosis. Further investigation is needed to explain the differences in the expression of affective disorders across countries in more detail. Secondary data analysis combining the ESEMeD data with cultural variables (ecological factors, human beliefs and values) derived from other studies such as the European Value Studies (EVS, 2004) might be helpful to explain the differences across countries to a greater extent.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2008.04.008.

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