Exploring dementia management attitudes in primary care

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Exploring dementia management attitudes in primary care: a key informant survey in 25 European and Mediterranean countries

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Key Points:

There is:

- A significant difference between official rules and guidelines and primary care physicians' (PCP's) attitudes to dementia management
- A high variability of PCP's attitudes towards dementia **management** and of rules regarding who has the right to start or continue dementia specific therapy across 25 European and Mediterranean countries
- A consistent association between national rules and PCPs' level of activity in dementia so that the more the GPs are allowed to do the more they engage in dementia workup and treatment
- A dominant part of PCPs in the 25 countries claim that the Mini Mental State Examination is the most popular cognitive test.

Abstract

Objective: Strategies for the involvement of primary care in the management of patients with presumed or diagnosed dementia are heterogeneous across Europe and the Mediterranean area. We wanted to explore attitudes of primary care physicians (PCP) when managing dementia: i) the most popular cognitive tests ii) who had the right to initiate or continue cholinesterase inhibitor or memantine treatment and iii) the relationship between the permissiveness of these rules/guidelines and PCP's approach in the dementia work-up. **Design:** Key informant Survey**. Setting:** Primary care practices across 25 European and Mediterranean countries**. Subjects:** Four hundred forty-five PCPs responded to a self-administered questionnaire. **Main outcome measures:** Two by two contingency tables with odds ratios and 95% confidence intervals were used to assess the association between categorical variables. A multinomial logistic regression model was used to assess the association of multiple variables (age class, gender and prescription rules) with the attitude to start dementia evaluation by PCPs. **Results:** Discrepancies between rules/guidelines and attitudes to dementia management was found in many countries. The Mini-Mental State Examination (MMSE) was by far the most popular cognitive test followed by the Clock Drawing Test (CDT). Lack of time was the major stated reason for not diagnosing dementia. There was a strong association between the authorization to prescribe dementia drugs and pursuing dementia diagnostic work-up (odds ratio, 3.45; 95% CI 2.28- 5.23). **Conclusions:** Differing regulations about who does what in dementia management seems to affect PCP's engagement in the dementia work up. Yet, time constraints was the most stated reason for non-engagement.

***Key words**:* Alzheimer's disease; dementia; general practice; Clock Drawing Test (CDT); Mini-Mental Status Examination (MMSE); primary care

1. Introduction

According to the Alzheimer Report 2015 46.8 million people worldwide were living with dementia in 2015. Eventually, this number will almost double every 20 years, reaching 75 million in 2030 and 131 million in 2050 (1). In 2014, Margaret Chang, the chair of WHO stated, “Dementia is not just a public health priority, it is a public policy priority” (2). The G8 dementia research summit recently described dementia as “a growing global health problem”. The average prevalence of dementia in 28 European Countries is 1.55 % (3). Primary care physicians (PCPs) may play a central role both in diagnosing dementia and in its further management, yet early dementia is often difficult to diagnose and to distinguish from normal aging in primary care (4-6). Some studies show that more than 50% of persons with dementia have never received a diagnosis of dementia from a physician (7). A 2012 review showed that 14-33% of mild dementia and 28-61% of moderate to severe dementia cases were diagnosed in primary care (8-11). In the short-term, timely diagnosis ensures access to psychosocial and pharmacological interventions . The role of primary care physicians for timely dementia detection and treatment can be cost-effective since it may improve symptoms enough to reduce healthcare costs and keep patients living in the community for longer (7, 12, 13).This contrasts to a low rate of utilization of standardized dementia tests in primary care, and little is known about how PCPs detect dementia (14). Recurring reasons to explain why accurate dementia evaluations are not done are: insufficient time, difficulty in accessing and communicating with specialists and community social service agencies, low reimbursement, and lack of interdisciplinary teams (14-16).

Some PCPs seem to think that diagnosing dementia early is not particularly important and may in fact be harmful to certain patients (4). They are skeptical about the advantages of dementia medications and assess the need for a formal diagnosis of dementia within the broader context of older patients’ lives. They are more likely to pursue a formal diagnosis in situations where it benefits their patients such as accessing specific dementia services (4). Another important factor is that dementia is still a stigma in some settings (17). Although a majority of individuals with or

without cognitive impairment may prefer to be informed about a diagnosis of dementia for reasons pertaining to autonomy (18) PCPs do not always feel comfortable in breaking the bad news. Many physicians also fear to harm the relationship with their patients (19) and therefore disclosing a dementia diagnosis should align with the patient's preferences, culture, educational level, and abilities.

The Alzheimer Europe association's report on dementia management in Europe shows heterogeneity. In some countries PCPs are allowed to establish a diagnosis of dementia and start specific drug treatment reimbursed by universal health care insurance (20). In other countries only secondary care specialists such as neurologists, geriatricians and psychiatrists are allowed to diagnose and treat dementia (3). No studies have compared dementia management by PCPs in different European countries. Many new short cognitive tests for primary care use have been introduced lately, but few studies have explored the actual use of these tests in real life primary care.

The aim of this study was to audit the involvement of PCPs in dementia management across 25 European and Mediterranean countries and explore attitudes of PCPs beyond national guidelines.

2. Methods

This study was based on a key informant survey and was carried out by collecting questionnaires from 25 member countries of the European General Practice Research Network (EGPRN) . The steering committee of this project, called the PreDem study, developed a semi-structured questionnaire with seven multiple choice questions with space for free text comments and the eighth question requesting an optional short case story of a dementia patient from the informants own practice. Data from the Alzheimer Europe report 2012 (3) inspired many of the questions. The questionnaire's English version is found in Appendix **1**. The informants were all practicing PCPs and were asked to give the general view of the attitude of PCPs in their country. For the 25

78 countries, national coordinators were identified and contacted face to face by the first author during
79 eight meetings of the European General Practice Research Network and Wonca Europe conferences
80 in 2013-2015. National coordinators were responsible to translate the questionnaire into their own
81 languages and to disseminate the questionnaires to at least 15 key informants for countries with a
82 population of >10 million inhabitants, a smaller sample was accepted for smaller countries. A back
83 translation into English was finally performed for every country by the national key informants. A
84 convenience sampling technique was used when national key informants chose informants from
85 different geographical regions within the same country.
86

87 2.1. Statistical analyses

88 Descriptive statistics were conducted using IBM SPSS Statistics for Windows, Version 22.0. (IBM,
89 Armonk, NY USA, 2013). Two by two contingency tables with odds ratios and its 95% confidence
90 interval were used to measure the association between categorical variables. A multinomial logistic
91 regression model was used to assess the association of multiple variables (age class, gender and
92 prescription rules) with the ordinal response data (attitude to start dementia evaluation by GPs) with
93 a statistical significance threshold of 0.05.

94 To check for the association between the right to prescribe and being responsible for dementia
95 management; (the association between the right to prescribe and the attitude to establish the
96 diagnosis of dementia on their own and the association between the right to prescribe dementia
97 drugs and non-referral to secondary care specialists) we grouped always and often as positive
98 responses and rarely and never as negative responses.

99 **3. Results**

100 We collected 445 questionnaires from PCP informants in 25 European and Mediterraneancountries.
101 The distribution of informants divided by gender is presented in Table I along with population data

and dementia prevalence for each country. The age class distribution of the informants is illustrated in Figure 1.

3.1.1 Question 1: "Which healthcare professionals are officially responsible for the diagnosis of dementia?"

There was not unanimity between informants within the same country. In the following 15 countries two thirds or more of the informants answered that PCPs alone or in combination with secondary care specialists are officially responsible for the diagnosis of dementia: Belgium 67%, Denmark 85% , Germany 100%, Greece 67%, Hungary 71%, Ireland 100%, Italy 66%, Norway 94%, Poland 80%, Portugal 80%, Spain 75%, Sweden 85%, Switzerland 89%, The Netherlands 94%, United Kingdom 71%. In two countries two thirds or more of the informants answered that PCPs alone or in combination with secondary care specialists are not officially responsible for the diagnosis of dementia: Finland 87% and Romania 69%. In 8 countries the informants' responses were undecided: Austria, Bulgaria, Croatia, France, Israel, Malta, Slovenia, Turkey.

3.2 Question 2: "Which are the most popular dementia screening tests used?"

The results are illustrated in Table II and shows that the MMSE was more popular than the CDT in all countries except Hungary and was a mandatory test in 12 countries.

3.3 Question 3: "Are primary care physicians allowed to start prescribing drug treatment for dementia?"

In 16 countries a majority of the informants answered "YES" to the question: Austria 63%, Bulgaria 73%, Denmark 77%, Finland 67%, France 61%, Germany 100%, Greece 83%, Hungary 96%, Ireland 100%, Malta 83%, Norway 100%, Poland 83%, Portugal 60%, Sweden 100%, Switzerland 100%, The Netherlands 72%.

In eight countries a majority of the informants answered "NO": Croatia 86%, France 81%, Israel 87%, Italy 78%, Slovenia 80%, Spain 94%, Turkey 85%, United Kingdom 86%. In Belgium the

responses were split 50%/ 50%.

3.4 Question 4 "Is continued dementia drug treatment reimbursed if prescribed by GPs /primary care physicians in your country?"

In 20 countries a majority of the informants answered "YES" to the question: Austria 56%; Belgium 91%, Denmark 92%, Finland 67%, France 83%, Germany 100%, Greece 92%, Hungary 89%, Ireland 100%, Israel 53%, Norway 94%, Poland 96%, Slovenia 100%, Sweden 100%, Switzerland 97%, The Netherlands 100%, Turkey 84%, United Kingdom 59%.

In five countries most of the informants answered "NO" Bulgaria 73%, Italy 83%, Malta 67%, Portugal 84%, Romania 75%.

3.5 Question 5: "Do primary care physicians try to establish a diagnosis of dementia on their own?"

The outcomes for this question are illustrated in Table III and shows that in 13 countries two thirds or more of the informants responded that PCPs always or often tries to establish a diagnosis of dementia on their own: Austria 69%; France 92%, Germany 87%, Greece 75%, Ireland 75%, Israel 67%, Norway 95%, Portugal 70%, Slovenia 80%, Spain 82%, Sweden 100%, Switzerland 97%, The Netherlands 72%. In six countries a majority of the informants responded that PCPs rarely or never tries to establish a diagnosis of dementia on their own: Finland 86%, Hungary 61%, Malta 50%, Poland 79%, Romania 62% and Turkey 89%. In six countries the informants' responses were undecided: Belgium, Bulgaria, Croatia, Denmark, Italy, United Kingdom.

3.6 Question 6: "Do primary care physicians refer a suspected case of dementia to a secondary care specialist?"

The outcomes for this question are illustrated in Table IV and show that in 21 countries two thirds or more of the informants responded that PCPs always or often referred a suspected case of dementia to a secondary care specialist. In four countries: Norway 39%, Sweden 84%, Switzerland

50% and the Netherlands 44% of informants responded that PCPs rarely or never referred a suspected case of dementia to a secondary care specialist.

3.7 Question 7: "What would primary care physicians need to be able to detect dementia better?"

Results are presented in Table V and show that in 17 countries more time was mentioned as a need by a majority of the informants: Austria; France, Germany, Greece, Ireland, Israel, Norway, Slovenia, Spain, Sweden, Switzerland, The Netherlands, UK, Turkey. In eight countries more time was mentioned by a minority of the informants: Belgium, Croatia, Finland, France, Italy, Malta, Portugal and Romania. In 12 countries short tools was mentioned as a need by a majority of the informants: Austria, Belgium, Germany, Greece, Hungary, Israel, Italy, Poland, Romania, Spain, Switzerland and Turkey.

In four countries incentives was mentioned as a need by a majority of the informants: Austria, Greece, Ireland, and UK.

3.8.1 Association between the right to prescribe and being responsible for dementia management.

- Association between right to *start* drug treatment and being responsible for dementia management: Odds Ratio, 3.45; 95% CI, 2.28- 5.23.
- Association between right to *continue* drug treatment and being responsible for dementia management: Odds Ratio, 2.29; 95% CI, 1.49-3.52

3.8.2 Association between the right to prescribe and attitude to establish the diagnosis of dementia on their own:

- Association between right to *start* drug treatment and attitude to establish the diagnosis of dementia on their own Odds Ratio, 1.64; 95% CI, 1.11-2.41.
- Association between right to *continue* drug treatment and attitude to establish the diagnosis of dementia on their own Odds Ratio, 1.77; 95% CI, 1.16-2.68.

3.8.3 Association between the right to prescribe dementia drugs and non-referral to secondary care specialists.

- Association between the right to *start* drug treatment and non-referral to secondary care specialists Odds Ratio, 3.83; 95% CI 2.18- 6.73.
- Association between the right to *continue* drug treatment and non-referral to secondary care specialists Odds Ratio, 2.08; 95% CI 1.19; 3.64.

3.8.4 Multivariate analysis

No significant association between gender of the informants and the outcome was found (Chi Square (3, n=437) 0.20, p=0.98) while age was statistically associated with the outcome (Chi Square 12, n=437) 47.52, p<0.001).

Post hoc analysis showed that informants 30 years old or younger were less likely to respond that PCPs tend to start dementia evaluation (Chi Square (12, n=437) 47.70, p<0.001).

4. Discussion

This physician informant survey of dementia management in primary care across 25 European and Mediterranean countries show that most PCPs are engaged in dementia work-up. In many countries they also prescribe dementia drugs but the degree of their engagement varies greatly between countries. A high consistency of responses was found in countries with permissive rules for PCPs diagnosing and prescribing dementia drugs whilst there were many missing responses in countries with less permissive rules and where the prevalence of dementia is lower.

This first question in the survey of who was officially responsible for the diagnosis of dementia was inspired by the Alzheimer Report (3). Our hypothesis was that there would be an association between responsibility of diagnosing and reimbursement of dementia drug costs from the health care insurance if prescribed by PCPs without a previous prescription of the secondary care

specialist. The positive association that we did find between the right to prescribe dementia drugs and being responsible for the dementia work-up was stronger for the right to write the first prescription by a primary care physician than only being allowed to continue a prescription first issued by a secondary care specialist.

The Mini-Mental State Examination (MMSE) was the most popular cognitive test either used alone or in combination with other tests. The Clock Drawing Test (CDT) was the second most popular. Other tests (21-23) were not so popular and were used sporadically. In many countries MMSE was mandatory before prescription of dementia drugs. In other countries it was just recommended. Turkey had the highest number of missing data which is probably related to the low dementia prevalence in that country. In France no test was mandatory and the "5 words of Dobois" and the instrumental activities of daily living tool (IADL) were popular tests. PCPs from Finland and United Kingdom had the highest percentage of suggested alternative tests (7). In Finland The Consortium to Establish a Registry for Alzheimer's Disease (CERAD) was frequently used while many UK PCPs reported the use of the Six Item Cognitive Impairment Test (6-CIT) and the General Practitioner Assessment of Cognition (GPCOG).

According to the official rules and guidelines at the time of data collection (3) only in Germany, Ireland, Norway, Sweden and Switzerland did PCPs have the right to prescribe memantine and cholinesterase inhibitors. In Austria, Bulgaria, Denmark, Finland, Greece, Hungary, Malta, The Netherlands, Poland and Portugal it appears that informants were in reality entitled to prescribe even if officially they were not. A possible cause for this discrepancy is that with the advent of cheap generic drugs, reimbursement is not a big problem in most countries. In France PCPs were not entitled to prescribe dementia drugs for the first time but apparently many did prescribe anyway according to the open comments in our survey. In Hungary dementia was treated in primary care with piracetam and vinpocetin according to open comments. In Malta and Bulgaria where cholinesterase inhibitors or memantine were not reimbursed even if prescribed by secondary care

specialists PCPs were prescribing these drugs to a higher degree. In Bulgaria nicergoline, and piracetam were reimbursed even if the efficacy of the latter is controversial.

There was incongruence between the survey responses and the restrictive prescribing rules in Spain, Hungary, Denmark, Austria and Belgium. In France the answer was officially "YES" but there was a misunderstanding of a compulsory requirement of a yearly assessment by a secondary care specialist by some of the PCPs according to open comments**.** Possible explanations of the discrepancies between the official rules/guidelines and the PCP's responses to questions 1, 3 and 4, are: i) different perceptions of rules/guidelines, ii) the willingness of some physicians to bend rules iii)more than one set of rules in each country (in different regions or for different health care insurers). These explanations find support in the rich data from the free text comments to the survey.

Difficulties in understanding the questionnaire might be another possible explanation to the discrepancies. Consistency between the official rules/guidelines and PCP's responses appear to be better in countries with more permissive regulations (Sweden, Germany, Switzerland, Norway and Ireland).

According to this 2015 audit, European and Mediterranean PCPs seemed to be willing to start dementia work-up, but time constraints was the major barrier (19, 24-28). In France many informants stated that money incentives could help. In Sweden and Norway PCPs normally have 15 to 20 minutes' consultations. They can, however, plan a longer time and organize multiple consultations, which is recommended when diagnosing dementia.

In the last decades drug expenditure has been one of the major concerns in many European health care systems. According to the World Alzheimer report 2015 (1) only 20% of the cost of dementia care are for medical purposes and the medical costs decrease with an earlier, accurate diagnosis (29, 30).

This 2015 audit study from most European countries, Israel and Turkey, may have implications for health care planning and future research in how to manage cognitive impairments facing our ageing global population.

Limitations of the study: Since we used a convenience sample of informants the representativeness of PCPs for each country may be questionable although we tried to achieve geographical variation. Our questionnaire, inspired by the Alzheimer Europe report is simple but piloted, developed in a multi-step process with experts in the field, but not validated against other measures apart from a face validation procedure.

We cannot rule out the possibility of confounding or alternative explanations to our results since the survey responses show attitudes and not actual performance.

5. Conclusion

According to this 2015 audit to 445 European and Mediterranean PCPs most seem willing to start dementia work-up with time constraints as the major barrier. The MMSE was the most popular cognitive test followed by the CDT. It seems that official rules affect attitudes to dementia work-up and PCPs that are not entitled to prescribe dementia drugs are more inclined to refer patients with suspected dementia to secondary care.

Ethics: Except for in Ireland, where ethical approval was requested and obtained no formal research ethics review was requested at the time of the data collection after national coordinators had checked the research ethics requirements in their countries

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285 care” at the WONCA Europe Conference in Istanbul October 2015.

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287 References

288 1. Prince M, Wimo A, Guerchet M, Ali G, Wu Y, Prina M. World Alzheimer Report 2015.
289 The global impact of dementia. An analysis of prevalence, incidence, cost and trends. Alzheimer's
290 Disease International, London. 2015.

291 2. Fortinsky RH, Delaney C, Harel O, Pasquale K, Schjavland E, Lynch J, et al. Results and
292 lessons learned from a nurse practitioner-guided dementia care intervention for primary care
293 patients and their family caregivers. Research in gerontological nursing. 2014;7:126-37.

294 3. Alzheimer Europe. Dementia in Europe Yearbook National Dementia Strategies (diagnosis,
295 treatment and research). 2012.

296 4. Hansen EC, Hughes C, Routley G, Robinson AL. General practitioners' experiences and
297 understandings of diagnosing dementia: factors impacting on early diagnosis. Social science &
298 medicine (1982). 2008;67:1776-83.

299 5. Olafsdottir M, Foldevi M, Marcusson J. Dementia in primary care: why the low detection
300 rate? Scandinavian journal of primary health care. 2001;19:194-8.

301 6. Waldorff FB, Rishoj S, Waldemar G. Identification and diagnostic evaluation of possible
302 dementia in general practice. A prospective study. Scandinavian journal of primary health care.
303 2005;23:221-6.

304 7. Caruana-Pulpan O, Scerri C. Practices in diagnosis, disclosure and pharmacotherapeutic
305 management of dementia by general practitioners–a national survey. Aging & mental health.
306 2014;18:179-86.

307 8. van den Dungen P, Moll van Charante EP, van de Ven PM, Foppes G, van Campen JP, van
308 Marwijk HW, et al. Dutch family physicians' awareness of cognitive impairment among the elderly.
309 BMC geriatrics. 2015;15:105.

9. van den Dungen P, Moll van Charante EP, van Marwijk HW, van der Horst HE, van de Ven PM, van Hout HP. Case-finding of dementia in general practice and effects of subsequent collaborative care; design of a cluster RCT. BMC public health. 2012;12:609.

10. van den Dungen P, van Marwijk HW, van der Horst HE, Moll van Charante EP, Macneil Vroomen J, van de Ven PM, et al. The accuracy of family physicians' dementia diagnoses at different stages of dementia: a systematic review. International journal of geriatric psychiatry. 2012;27:342-54.

11. Chopard G, Bereau M, Mauny F, Baudier F, Griesmann JL, Vandel P, et al. [Early diagnosis of Alzheimer's disease: are we too close to the trees to see the forest?]. Presse Med. 2014;43:886-7.

12. Barnett JH, Lewis L, Blackwell AD, Taylor M. Early intervention in Alzheimer's disease: a health economic study of the effects of diagnostic timing. BMC Neurol. 2014;14:101.

13. Ydstebo AE, Bergh S, Selbaek G, Benth JS, Luras H, Vossius C. The impact of dementia on the use of general practitioners among the elderly in Norway. Scandinavian journal of primary health care. 2015;33:199-205.

14. Harris DP, Chodosh J, Vassar SD, Vickrey BG, Shapiro MF. Primary care providers' views of challenges and rewards of dementia care relative to other conditions. Journal of the American Geriatrics Society. 2009;57:2209-16.

15. Koch T, Iliffe S. The role of primary care in the recognition of and response to dementia. The journal of nutrition, health & aging. 2010;14:107-9.

16. Pimlott NJ, Persaud M, Drummond N, Cohen CA, Silvius JL, Seigel K, et al. Family physicians and dementia in Canada Part 2. Understanding the challenges of dementia care. Canadian Family Physician. 2009;55:508-9. e7.

17. Batsch NL, Mittelman MS. World Alzheimer Report 2012: Overcoming the stigma of dementia. 2012.

18. van den Dungen P, van Kuijk L, van Marwijk H, van der Wouden J, Moll van Charante E, van der Horst H, et al. Preferences regarding disclosure of a diagnosis of dementia: a systematic review. International psychogeriatrics / IPA. 2014;26:1603-18.

19. Bradford A, Kunik ME, Schulz P, Williams SP, Singh H. Missed and delayed diagnosis of dementia in primary care: prevalence and contributing factors. Alzheimer disease and associated disorders. 2009;23:306-14.

20. Jedenius E, Wimo A, Stromqvist J, Andreasen N. A Swedish programme for dementia diagnostics in primary healthcare. Scandinavian journal of primary health care. 2008;26:235-40.

21. Kvitting AS, Wimo A, Johansson MM, Marcusson J. A quick test of cognitive speed (AQT): usefulness in dementia evaluations in primary care. Scandinavian journal of primary health care. 2013;31:13-9.

22. Petrazzuoli F, Palmqvist S, Thulesius H, Buono N, Pirrotta E, Cuffari A, et al. A Quick Test of Cognitive Speed: norm-referenced criteria for 121 Italian adults aged 45 to 90 years. International psychogeriatrics / IPA. 2014:1-8.

23. Brodaty H, Low LF, Gibson L, Burns K. What is the best dementia screening instrument for general practitioners to use? The American journal of geriatric psychiatry : official journal of the American Association for Geriatric Psychiatry. 2006;14:391-400.

24. Koch T, Iliffe S. Rapid appraisal of barriers to the diagnosis and management of patients with dementia in primary care: a systematic review. BMC family practice. 2010;11:52.

25. van Hout H, Vernooij-Dassen M, Bakker K, Blom M, Grol R. General practitioners on dementia: tasks, practices and obstacles. Patient Educ Couns. 2000;39:219-25.

26. Hinton L, Franz CE, Reddy G, Flores Y, Kravitz RL, Barker JC. Practice constraints, behavioral problems, and dementia care: primary care physicians' perspectives. Journal of general internal medicine. 2007;22:1487-92.

27. Turner S, Iliffe S, Downs M, Wilcock J, Bryans M, Levin E, et al. General practitioners' knowledge, confidence and attitudes in the diagnosis and management of dementia. Age Ageing. 2004;33:461-7.

28. Parmar J, Dobbs B, McKay R, Kirwan C, Cooper T, Marin A, et al. Diagnosis and management of dementia in primary care: exploratory study. Canadian family physician Medecin de famille canadien. 2014;60:457-65.

29. Tang EY, Burn D, Taylor JP, Robinson L. Dementia with Lewy bodies: The emerging role of primary care. The European journal of general practice. 2015:1-5.

30. Robinson L, Tang E, Taylor JP. Dementia: timely diagnosis and early intervention. BMJ (Clinical research ed). 2015;350:h3029.

Table I

Population characteristics, dementia prevalence and primary care physicians (PCPs) as key informants in the PreDem - a dementia management study from 25 countries in the EGPRN (European General Practice Research Network)*

Country	Population million people	Population 65 years old or over %	Dementia prevalence %	Primary care physician key informants, n (%)		
				Men	Women	Total
Austria	8.6	18.3	1.73	10 (53)	9 (47)	19
Belgium	11.3	17.8	1.77	6 (50)	6 (50)	12
Bulgaria	7.2	19.6	1.49	3 (20)	12 (80)	15
Croatia	4.2	18.4	1.53	4 (19)	17 (81)	21
Denmark	5.8	18.2	1.53	10 (77)	3 (23)	13
Finland	5.5	19.4	1.71	6 (40)	9 (60)	15
France	66.4	18.0	1.85	15 65)	8 (35)	23
Germany	81.2	20.8	1.92	5 (31)	11 (69)	16
Greece	10.8	20.5	1.77	3 (25)	9 (75)	12
Hungary	9.8	17.5	1.50	16 (57)	12 (43)	28
Ireland	4.6	12.6	1.08	7 (87)	1 (13)	8
Israel	8.5	10.3	1.10	8 (53)	7 (47)	15
Italy	60.6	21.4	2.09	19 (83)	4 (17)	23
Malta	0.4	17.9	1.26	5 (83)	1 (17)	6
Norway	5.2	15.9	1.56	11 (61)	7 (39)	18
Poland	38.0	14.9	1.31	9 (38)	15 (62)	24
Portugal	10.4	19.9	1.71	5 (25)	15 (75)	20
Romania	19.9	16.5	1.26	2 (13)	14 (87)	16
Slovenia	2.1	17.5	1.57		5(100)	5
Spain	46.4	18.1	1.75	9 (56)	7 (44)	16
Sweden	9.7	19.4	1.82	8 (61)	5 (39)	13
Switzerland	8.2	17.6	1.73	31 (82)	7 (18)	38
The Netherlands	16.9	17.3	1.47	9 (50)	9 (50)	18
Turkey	77.7	7.7	0.44	12 (35)	22 (65)	34
United Kingdom	64.8	17.5	1.65	7 (41)	10 (59)	17
TOTAL	584.1		1.55	220 (49)	225 (51)	445

*Values are given in percent (%) and absolute numbers (n).

†Data for dementia prevalence by the Alzheimer Europe Association, 2013.

Table II

"Which are the most popular dementia screening tests used? "

Country	MMSE		(MMSE mandatory)	CDT		Other tests	
	%	(n)		%	(n)	%	(n)
Austria	95	18	YES	53	10		
Belgium	99	12	YES	8	1		
Bulgaria	67	10	NO	34	5	7	1
Croatia	100	21	NO	5	1	5	1
Denmark	100	13	NO	23	3	15	2
Finland	76	13	NO	46	7	59	9
France	100	23	YES	74	17	39	9
Germany	88	14	NO	13	2	6	1
Greece	100	12	NO	16	2	8	1
Hungary	60	17	YES	82	23		
Ireland	100	8	NO	13	1	13	1
Israel	100	15	NO	27	4		
Italy	91	21	YES	25	6	8	2
Malta	100	6	NO				
Norway	95	17	YES	84	15	6	1
Poland	80	19	YES	54	13	12	3
Portugal	90	18	NO	20	4	5	1
Romania	82	13	YES	63	10		
Slovenia	100	5	YES	60	3		
Spain	94	15	YES	26	4	13	2
Sweden	100	13	NO†	54	7	8	1
Switzerland	68	26	YES	32	12		
The Netherlands	94	17	YES	61	11	11	2
Turkey	56	19	NO	18	6		
United Kingdom	47	8	NO	12	2	41	7

Abbeviations: MMSE, Mini Mental State Examination; CDT, Clock Drawing Test.
*Values are given in percent (%) and absolute numbers (n).
† in Sweden the MMSE is not mandatory but recommended

Table III

"Do primary care physicians try to establish a diagnosis of dementia on their own?"*

Country	Always		Often		Rarely		Never		Missing	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)
Austria	11	2	58	11	26	5			5	1
Belgium			58	7	42	5				
Bulgaria	20	3	33	5	40	6	7	1		
Croatia	5	1	48	10	43	9	5	1		
Denmark	8	1	54	7	31	4	8	1		
Finland	7	1	7	1	73	11	13	2		
France	35	8	57	13	9	2				
Germany	6	1	81	13	6	1			6	1
Greece	25	3	50	6	25	3				
Hungary			39	11	54	15	7	2		
Ireland			75	6	25	2				
Israel			67	10	33	5				
Italy	9	2	44	10	35	8	9	2	4	1
Malta			33	2	50	3			17	1
Norway	6	1	89	16	6	1				
Poland			21	5	71	17	8	2		
Portugal	5	1	65	13	25	5			5	1
Romania			38	6	56	9	6	1		
Slovenia			80	4					20	1
Spain	19	3	63	10	19	3				
Sweden	31	4	69	9						
Switzerland	5	2	92	35	3	1				
The Netherlands			72	13	17	3	6	1	6	1
Turkey			9	3	77	26	12	4	3	1
United Kingdom			59	10	41	7				

*Values are given in percent (%) and absolute numbers (n).

Table IV

"Do primary care physicians refer a suspected case of dementia to a secondary care specialist?"*

Country	Always		Often		Rarely		Never		Missing	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)
Austria	32	6	58	11	5	1			5	1
Belgium	17	2	67	8	17	2				
Bulgaria	67	10	27	4					7	1
Croatia	24	5	62	13	14	3				
Denmark	31	4	62	8	8	1				
Finland	40	6	60	9						
France	26	6	61	14	13	3				
Germany	19	3	50	8	25	4			6	1
Greece	17	2	75	9	8	1				
Hungary	18	5	75	21	7	2				
Ireland	38	3	63	5						
Israel	27	4	73	11						
Italy	48	11	44	10			4	1	4	1
Malta	17	1	83	5						
Norway			50	9	39	7			11	2
Poland	21	5	71	17	8	2				
Portugal	25	5	65	13	5	1			5	1
Romania	81	13	19	3						
Slovenia	40	2	60	3						
Spain	56	9	44	7						
Sweden	8	1	8	1	84	11				
Switzerland	3	1	47	18	50	19				
The Netherlands	6	1	50	9	44	8				
Turkey	38	13	47	16	15	5				
United Kingdom	18	3	71	12	12	2				

*Values are given in percent (%) and absolute numbers (n).

Table V

"What would primary care physicians need to be able to detect dementia better?" More than one option is possible*

Country	Short tools		Incentives		More time for consultation	
	%	(n)	%	(n)	%	(n)
Austria	63	12	63	12	58	11
Belgium	92	11	8	1	42	5
Bulgaria	47	7	27	4	80	12
Croatia	14	3	5	1	38	8
Denmark	46	6	8	1	62	8
Finland	20	3			47	7
France	43	6	9	2	35	8
Germany	63	10	13	2	81	13
Greece	83	10	50	6	92	11
Hungary	61	17	43	12	82	23
Ireland	38	3	50	4	100	8
Israel	73	11	33	5	87	13
Italy	61	14	4	1	30	7
Malta	17	1			17	1
Norway	39	7	17	3	61	11
Poland	63	15	29	7	83	20
Portugal	10	2			45	9
Romania	94	15	18	3	38	6
Slovenia			20	1	100	5
Spain	63	10			81	13
Sweden	46	6	15	2	77	10
Switzerland	58	22	11	4	66	25
The Netherlands	39	7	22	4	56	10
Turkey	79	27	27	9	65	22
United Kingdom	18	3	53	9	71	12

*Values are given in percent (%) and absolute numbers (n).

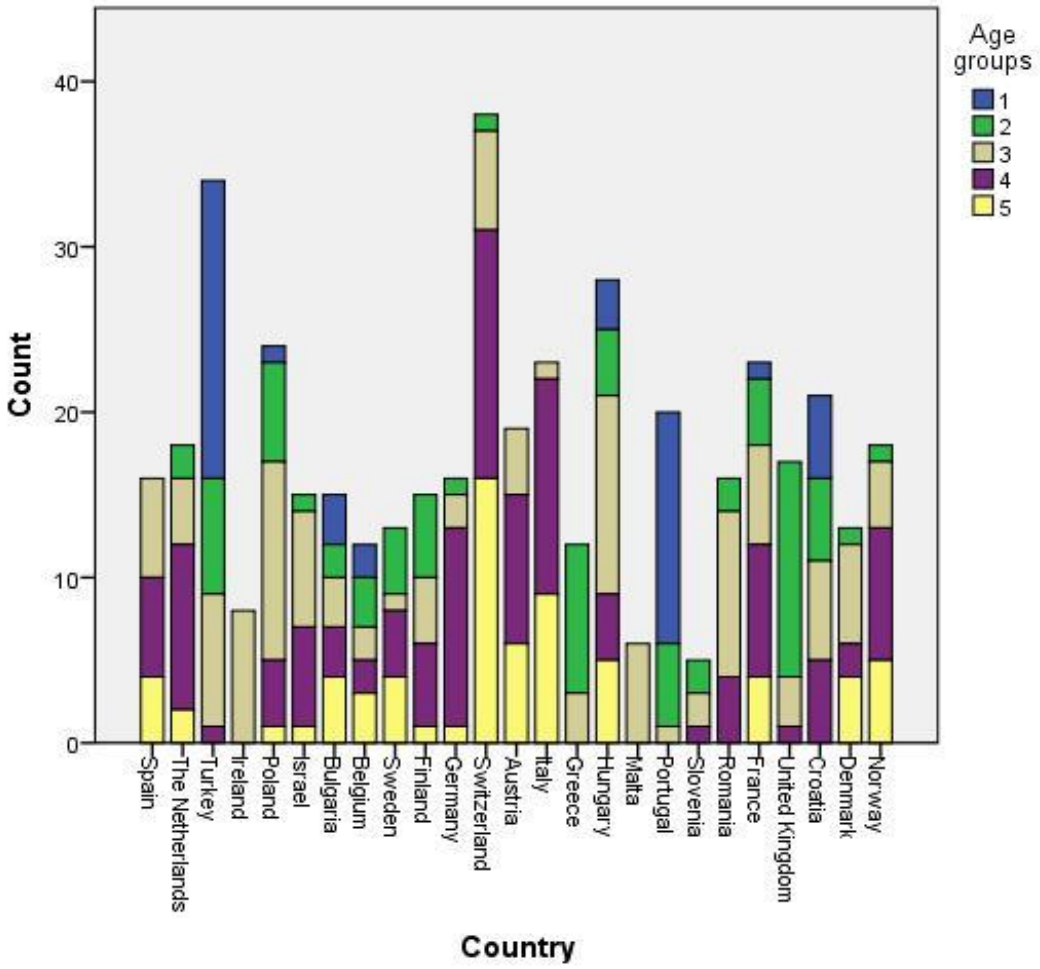

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Figure 1 : Age groups of the informants (years)

I: ≤ 30; II: 31-40; III: 41-50; IV: 51-60; V: ≥ 61;