Chapter 3

Age related characteristics of outpatients with anxiety disorders: The Leiden Routine Outcome Monitoring Study

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Abstract

It has been hypothesised that clinically important differences between adults with anxiety disorders in different age groups exist. However, to date, large scale epidemiological studies comparing adults in different age groups and using standardised instruments are scarce. We analysed data from 1950 outpatients who were diagnosed with DSM-IV-TR panic disorder (with or without agoraphobia), agoraphobia (without panic), social phobia, and /or generalised anxiety disorder. Patients were divided in three age groups: young adult (18-25; n=435), mid-adult (26-40; n=788), and older adult (41-65; n=727). The three age groups were compared with regard to social demographic characteristics, diagnostic characteristics, anxiety symptom profile, general psychiatric symptom profile, and generic health status. Overall, patients had an average age of 36.48 years (standard deviation 11.71), 62.8% were female. A number of differences between the three age groups emerged: older patients were more often male, unemployed, living with a partner, and had lower education levels. With regard to clinical characteristics, older patients were more often diagnosed with agoraphobia and comorbid depression, younger patients were more likely to have social phobia. Anxiety symptom profiles of older patients showed more aches and pains, inner tension, and sleep problems, whereas younger patient had higher levels of hostility. The general psychiatric symptom profiles of younger patients showed elevated scores on measures of interpersonal sensitivity and hostility. With regard to generic health status, older patients experienced lower levels of physical functioning and vitality, while they had more physical problems, role limitations due to emotional problems, and pain. Our findings show that clinically relevant differences exist between younger and older adult outpatients with anxiety disorders. Clinicians should take these findings into account, as insight in these differences may help clinicians to better recognise the needs of patients and adapt prevention and treatment accordingly.

3.1 Introduction

Adult psychiatry is generally regarded as a uniform concept, with homogenous treatment protocols and guidelines. However, between an 18-year old and a 60-year old patient who are diagnosed with an anxiety disorder, numerous differences may exist. Age related differences in the adult population may for example be incidental to changes in physical health associated with aging. In addition, social demographic cohort differences, such as lower education levels and related competitive disadvantages in the labour market among older subjects, could impact emotionality (Schieman et al., 2001). More generally speaking, adulthood can be divided in several life phases (Wong et al., 2015). During early adulthood (ages 18-25), achieving social, psychological and financial independence are central. Mid-adulthood (ages 26-40), is generally marked by growing responsibilities that come with career development and family planning. During late adulthood (ages 41-65), interests generally shift to social responsibility, caregiving duties, helping the next generation, and adjusting to approaching retirement and post-work identity (Wong et al., 2015). Together, these physical changes, cohort differences, and life phases may impact the symptomatology and presentation of anxiety disorders, which in turn, may require different diagnostic and therapeutic approaches from health care professionals (Schneider et al., 2004; Husain et al., 2005).

Numerous studies have focussed on differences between child/adolescent or geriatric subjects with anxiety disorders relative to the adult population. In general, child and adolescent, as well as adult subjects with anxiety disorders were more likely to present with irritability symptoms than geriatric subjects (Lenze & Wetherell, 2011). Furthermore, among geriatric subjects (ages 65 and over), panic was less prevalent than among adults (ages 18-65), and worry content shifted from work related to health related (Wolitzky-Taylor et al., 2010). Similarly, the content of social fear in adults (ages 18-59) centred on speaking in public and catastrophizing on social situations, whereas geriatric subjects (ages 60-94) feared a greater number of situations (Gretarsdottir et al., 2004). Finally, fatigue and cognitive dysfunction, like memory complaints and concentration difficulties were more prominent geriatric patients (Lenze & Wetherell, 2011).

To date, however, the phenomenology of anxiety across the adult life span has not been studied. Comparisons of adult subjects according to age have been made in depression. As anxiety and depression are often comorbid, and have been suggested to share many features (Barlow et al., 1986), these findings might hold relevance to anxiety disorders. In depression, older patients (older than 50) had more general medical comorbidities, more insomnia, and less irritability than younger adult patients (Husain et al., 2005). Also, older patients had less negative views of themselves as well as their future (Husain et al., 2005), while in younger depressed adults (younger than 45), suicidal ideation, suicide attempts,

irritability, anhedonia, and persistence of symptoms between episodes were more frequent (Wilkowska-Chmielewska et al., 2013). Finally, older subjects were less likely to be diagnosed with comorbid generalised anxiety disorder (GAD), social phobia/social anxiety disorder (SP), panic disorder, or drug abuse (Husain et al., 2005).

In the present study, age related differences between adult outpatients diagnosed with a set of frequently occurring anxiety disorders were explored in order to identify clinically relevant correlates of age. We focused on outpatients diagnosed with DSM-IV-TR panic disorder (with or without agoraphobia; PD), agoraphobia (without panic; AP), SP, and GAD. We compared data on a broad set of social demographic, clinical and functional characteristics. Several hypotheses could be formulated: we expected older patients to have lower education levels, to more often live with a partner, and to be employed less often. Based on comparisons between child- and adolescent and geriatric subjects with adults (Lenze & Wetherell, 2011) as well as findings in depression (Husain et al., 2005), we expected more irritability in younger patients, and more health related worry in older patients. In addition, we expected older patients to have more physical complaints, more sleep problems, less vitality and more pain. However, no hypotheses were specified regarding clinical characteristics and symptomatology. In order to fully explore associations with age, we therefore examined age related differences allowing for non-linear associations, as well as linear associations. This study is the first to examine age related differences among adults with anxiety disorders. Findings may help clinicians to better adapt treatment to the needs of individual patients.

3.2 Method

3.2.1 Routine Outcome Monitoring

As part of routine practice at the facilities involved in this study, all patients completed an extensive battery of self-report and observer-rated measures at intake. This procedure is known as Routine Outcome Monitoring (ROM), and is described in more detail by De Beurs et al. (2011). Both generic and disorder-specific questionnaires were administered by trained psychiatric nurses and through supervised computerized self-report which prevented missing data within questionnaires. Although participation in ROM is voluntary, inclusion is high with an estimated 80% of all patients being assessed at intake. (van Noorden et al., 2011; Zitman, 2012) Although the primary goal of ROM is to inform both clinicians and patients, data were anonymised and their use in scientific research was approved by the Ethical Review Board at the Leiden University Medical Centre (LUMC).

3.2.2 Patients and procedure

Subjects were outpatients who had been referred for treatment by their general practitioner to Rivierduinen, a regional mental healthcare provider, or the psychiatry department of the LUMC between January 2004 and October 2010. Inclusion criteria held that patients must be between ages 18 and 65, have adequate command of the Dutch language and meet DSM-IV-TR diagnostic criteria for one or more of the following disorders: PD, AP, SP or GAD; with moderate to severe anxiety. Moderate to severe anxiety severity was assessed using a self-report as well as an observational measure: the Dutch versions of the Brief Symptom Inventory-12 item version (BSI-12; Roy-Byrne et al., 2010), a self-report anxiety measure derived from the BSI (De Beurs & Zitman, 2006; Derogatis & Melisaratos, 1983), and the observer-rated Brief Anxiety Scale (BAS; Tyrer et al., 1984), (see measures section). Moderate to severe baseline severity was defined as ≥10.38 on the BAS (Tyrer et al., 1984; Schat et al., 2013), equalling the average BAS score in a group of general practice patients diagnosed with anxiety disorders (Tyrer et al., 1984), and ≥6 on the BSI-12 (Schat et al., 2013), with scores <6 signifying no- to mild anxiety (Roy-Byrne et al., 2010). Missing data resulting from the incidental failure to administer complete questionnaires and from large time intervals (more than 21 days) between administration of questionnaires served as exclusion criteria.

3.2.3 Measures

In addition to patients' age and gender, education level (low: primary-lower secondary versus high: higher secondary-university), living situation (with versus without partner), and employment status (full- or part-time employed versus unemployed) were assessed. The Dutch version of the MINI International Neuropsychiatric Interview-Plus (MINI-Plus; Sheehan et al., 1998; Van Vliet & De Beurs, 2007) was used to collect diagnostic information. The MINI-Plus has good psychometric properties (Lecrubier et al., 1997), and was used to determine the presence of DSM-IV-TR anxiety disorders, comorbid depressive or dysthymic disorders, alcohol abuse or -dependence and drug abuse or -dependence. The number of comorbid anxiety disorders (including comorbid specific phobia) was dichotomized into "single anxiety disorder" versus "multiple anxiety disorders." Anxiety symptoms were assessed using the BAS (Tyrer et al., 1984). The BAS is a 10-item observer-rated scale, derived from the abbreviated Comprehensive Psychopathological Rating Scale (CPRS; Åsberg et al., 1978; Goekoop et al., 1992). The total score equals the sum-score of all 10 items on a 7-point Likert scale (0-6; range 0-60). The BAS assesses the main components of all anxiety disorders, covering psychological and somatic components, a higher score corresponds to more severe anxiety. The BSI (De Beurs & Zitman, 2006; Derogatis & Melisaratos, 1983) was used to assess a general psychiatric

symptom profile. The BSI is a self-report measure consisting of 53 items on a 5-point Likert scale (0-4; range 0-48). A total of 9 subscales (somatisation, obsessive compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism) can be obtained by averaging the corresponding items. Generic health status was examined using the Dutch version of the Short Form-36 (SF-36; Ware & Sherbourne, 1992; Aaronson et al., 1998), a 36-item self-report survey screening eight domains of general health: physical functioning, social functioning, role limitations due to physical health problems, role limitations due to emotional problems, general mental health perception, vitality, bodily pain, and general health perception. Measurement scales vary per subscale, ranging from yes/no to answers on a 3-, 5- or 6-point Likert scale. All raw scores are linearly converted to 0-100 subscales, with higher scores representing higher levels of functioning or wellbeing. However, to facilitate comparability to other measures, SF-36 scores were inverted so that higher scores reflect poorer generic health.

3.2.4 Statistical analyses

Categorical characteristics are presented as number (percentage), continuous variables are presented as mean (M) (± standard deviation (SD)). Comparisons between included and excluded patients were made using χ^2 for categorical, and independent samples t-tests for continuous variables. Based on previous studies, patients were divided into 3 cohorts: age 18-25; 26-40 and 41-65 (van Noorden et al., 2011; Regier et al., 1990; Somers et al., 2006; Robins et al., 1984). Age groups were compared with regard to demographic variables, diagnostic variables, anxiety symptom profile (BAS), general psychiatric symptom profile (BSI), and generic health status (SF-36). Comparisons between the three age groups were made using χ^2 or ANOVA for categorical and continuous variables respectively, with pair-wise post-hoc comparisons. For overall comparisons Cramer's V or Eta squared were calculated, for pair-wise post-hoc comparisons, phi and Cohen's d were computed. To test whether associations fitted a linear shape, in addition, all variables were examined in linear regression. Significance level was set at $p<0.05$; Bonferroni correction for multiple testing was applied. Data were analysed using SPSS version 20.0 (IBM Corp., Armonk, NY, USA).

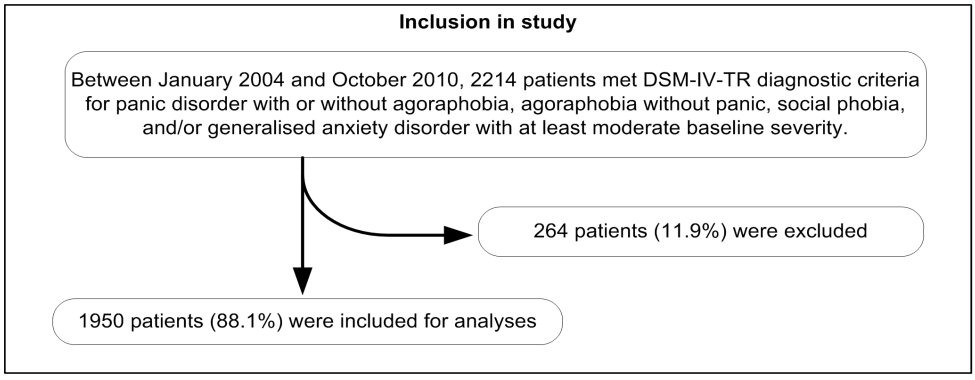
3.3 Results

3.3.1 Sample characteristics

Between January 2004 and October 2010, a total of 2214 patients met DSM-IV-TR diagnostic criteria for PD, AP, SP, and GAD with at least moderate severity. 264 patients (11.9%) had to be

excluded, as they had missing data, or a large time gap (more than 21 days) existed between completion of distinct questionnaires. The latter criterion was set to guarantee that all assessments had taken place at intake. Therefore, 1950 patients (88.1%) were included for analyses. Figure 3.1 shows a flowchart of inclusion and exclusion. Although differences between included and excluded patients with regard to BAS item 'aches and pains,' BSI subscales 'cognitive distortion,' 'hostility,' and 'phobic anxiety,' and SF-36 subscale 'bodily pain' were significant at $p<0.05$ after Bonferroni correction, these differences were very small, with eta squares ranging from 0.001 to 0.01 (results not shown). Of the total sample, 62.8% was female, mean age was 36.48. A total of 816 patients (42%) was diagnosed with PD, 433 (22%) patients with AP, 586 patients (30%) with SP, and 440 patients (23%) with GAD. Patients were divided according to age in early adult (age 18-25; n=435), mid-adult (age 26-40; n=788) and late adult (age 41-65; n=727).

Figure 3.1 Flowchart of inclusion



DSM-IV-TR denotes Diagnostic Statistical Manual-fourth edition, text revision

3.3.2 Differences between age groups

3.3.2.1 Social demographic and clinical characteristics

Social demographic and clinical comparisons across the three age groups with pairwise post-hoc analyses with Bonferroni correction as well as results for regression analyses are summarised in table 3.1. Significant associations with age emerged for gender, employment, education level, living situation, and comorbid depression. The percentage of men increased with age (28.0% in the early adult group, 36.5% in the mid-adult, and 43.3% in the late adult group). The percentage of patients with a part-time or fulltime job decreased with age (46.6% in the early adult group, 47.0% in the mid-adult group, and 37.7% in the late adult group), as did the number of patients with a high education level (65.5% in the early adult group, 60.8% in

did the number of patients with a high education level (65.5% in the early adult group, 60.8% in the mid-adult group, and 47.9% in the late adult group). Older patients were more likely to live with a partner than younger patients (22.3% in the early adult group, 58.1% in the mid-adult group, and 64.4% in the late adult group).Younger patients were less likely to have a comorbid depressive disorder (48.5% in the early adult group, 51.6% in the mid-adult group, and 60.8% in the late adult group). The distribution of the four included DSM-IV-TR anxiety diagnoses (PD, AP, SP, and GAD) across the three age groups is shown in figure 3.2. AP was more prevalent with increasing age (17.2%) in the early adult group, 18.8% in the mid-adult group, and 28.9% in the late adult group). The number of patients with SP on the other hand decreased with age (39.8% in the early adult group, 30.7% in the mid-adult group, and 23.5% in the late adult group).

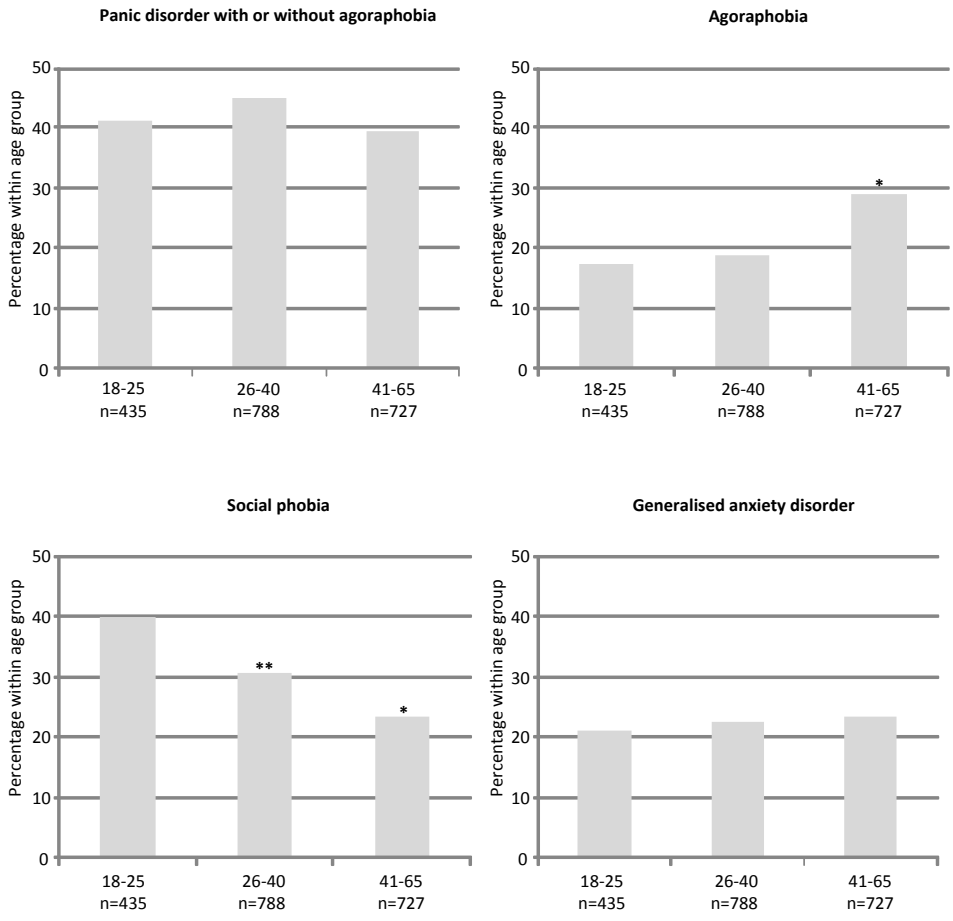
3.3.2.2 Anxiety symptoms

Comparisons of anxiety symptoms across the three age groups with pairwise post-hoc analyses with Bonferroni correction, as well as results for regression analyses are shown in table 3.2. Significant differences between the three age groups emerged on the items aches and pains, inner tension, and reduced sleep. Complaints of aches and pains increased with age (early adult group M=1.93, SD=1.37; mid-adult group M=2.09, SD=1.45; late adult group M=2.29, SD=1.52), as did levels of inner tension (early adult group M=3.03, SD=1.00; mid-adult group M=3.15, SD=1.01; late adult group M=3.29, SD=1.00), and sleep problems (early adult group M=1.81, SD=1.59; mid-adult group M=2.22, SD=1.68; late adult group M=2.43, SD=1.74). Although group-wise comparisons were not statistically significant, regression analyses showed a decrease in hostility scores with age.

3.3.2.3 General psychiatric symptoms

Table 3.3 shows comparisons of general psychiatric symptoms across the three age groups with pairwise post-hoc analyses with Bonferroni correction, as well as results for regression analyses. With regard to psychiatric symptoms, significant differences between the three age groups emerged on measures of interpersonal sensitivity, hostility, and on observed depression. Levels of interpersonal sensitivity decreased with age (early adult group M=2.06, SD=1.08; mid-adult group M=1.94, SD=0.94; late adult group M=1.73, SD=1.06), as did levels of self-reported hostility (early adult group M=1.18, SD=8.30; mid-adult group M=1.12, SD=0.92; late adult group M=0.95, SD=0.85). Observed depression scores on the other hand, increased with age (early adult group M=18.69, SD=8.30; mid-adult group M=20.38, SD=8.31; late adult group M=21.82, SD=8.54).

Figure 3.2 Anxiety diagnoses per age group in 1950 outpatients diagnosed with DSM-IV-TR anxiety disorders (panic disorder with or without agoraphobia, agoraphobia without panic, social phobia and/or generalised anxiety disorder).



*DSM-IV-TR denotes Diagnostic Statistical Manual-fourth edition, text revision; *denotes significantly different from early adult (18-25; n=435) and mid-adult (26-40; n=788) post-hoc with Bonferroni correction for multiple testing; **denotes significantly different from early adult (18-25; n=435) and late adult (41-65; n=727) post-hoc with Bonferroni correction for multiple testing.*

3.3.2.4 Generic health status

Comparisons across the three age groups with regard to generic health status with pairwise post-hoc analyses with Bonferroni correction, as well as results for regression analyses are summarised in table 3.4. Significant differences emerged between the three age groups with regard to physical functioning, role limitations due to physical problems, role limitations due to emotional problems, vitality, and bodily pain. Physical functioning deteriorated with age (early adult group M=20.05, SD=20.42; mid-adult group M=23.93, SD=22.05; late adult group M=30.77, SD=24.40). Physical problems increased with age (early adult group M=56.78, SD=39.36; mid-adult group M=64.78, SD=38.48; late adult group M=71.70, SD=36.83), as did the level of role limitations due to emotional problems (early adult group M=70.88, SD=34.54; mid-adult group M=80.16, SD=30.43; late adult group M=78.4, SD=32.07). Levels of vitality decreased with age (early adult group M=64.54, SD=15.45; mid-adult group M=67.26, SD=15.93; late adult group M=68.65, SD=16.43), while the level of bodily pain increased with age (early adult group M=32.77, SD=24.38; mid-adult group M=36.71, SD=27.15; late adult group M=39.95, SD=28.22).

3.4 Discussion

We identified a number of differences between the three age-groups of outpatients with anxiety disorders. Older patients were more often male, although in all three age groups the majority of patients was female. Older patients were less often employed, less likely to have high education levels, but more likely to live with a partner. With regard to clinical characteristics, the percentage of patients diagnosed with SP decreased with age, whereas older patients were more likely to be diagnosed with AP as well as comorbid depression. With regard to the anxiety symptom profile, older patients scored higher on aches and pains and inner tension. In addition, sleep problems became more likely with increasing age and hostility scores decreased with age. Looking at the general psychiatric symptom profile, reported interpersonal sensitivity and hostility were higher in younger patients, whereas observed depression scores were higher in older patients. With regard to generic health status, a number of differences emerged: physical functioning and levels of vitality declined with age. The level of physical problems, pain, and role limitations due to emotional problems increased with age.

A number of our findings fits hypotheses. The finding that older patients more often lived with a partner and were less often employed is not surprising, as both early retirement and difficulty finding a new job after losing one's job are more likely with increasing age. The finding that older patients had lower education levels is also in line with expectations, as it fits

general demographics (Lutz & KC, 2011). The findings of more aches and pains, more bodily pain, a decline in physical functioning and vitality, more role-limitations due to physical problems, as well as reduced sleep in older patients also fit the process of aging in the general population (Aaronson et al., 1998). However, although physical decline is expected in aging, the detection of signs of significantly lower physical functioning in the mid-adult group compared to the early adult group might be thought of as surprising. Subtle subjective signs of physical deterioration may emerge among 26-40 year olds. Possibly our results reflect the overall finding that people with anxiety disorders are generally at an elevated risk for a number of physical conditions (Sareen et al., 2005), a risk that further increases with age (Scott et al., 2008). In addition, a previous study demonstrated that anxiety amplified the effect of age on physical disability (Brenes et al., 2008) Therefore, perhaps physical decline moves at a faster pace in outpatients with anxiety disorders than in the general population, resulting in earlier emergence of signs of physical deterioration. However, a direct comparison with general population subjects is warranted to gain further insight on this matter.

The shift in the male to female ratio towards a more equal distribution with increasing age, was previously reported in the general population, where the percentage of women meeting diagnostic criteria for anxiety disorders dropped markedly after the age of 45 (Regier et al., 1990), although in our clinical sample this shift occurred earlier. With regard to anxiety diagnoses, we found a decrease in prevalence of SP with age, which has been reported previously in the general population (Somers et al., 2006). AP on the other hand was more prevalent in the late adult group. This confirms findings in the general population of higher prevalence of AP in older (55+) compared to younger (15-54) subjects (Cairney et al., 2008), although prevalence of AP has also been found to be stable or even decline across age groups (Somers et al., 2006). In our sample a structured diagnostic interview was used that screened for various psychiatric disorders; however, primary diagnosis was unknown. It could be hypothesised that the increased prevalence of AP in the older adult group is a secondary diagnosis that follows from increased avoidance associated with the elevated prevalence of either physical complaints or depression among older patients.

Across all age groups, mood-disorder comorbidity was common, but it was highest in the late adult group. However, the increased prevalence of physical complaints with age (i.e. reduced vitality, sleep problems and aches and pains) may have increased the probability of meeting diagnostic criteria for depression, and therefore the increased prevalence in our older adult group could be an artefact. This is supported by the fact that the older patients did not report higher levels of depression on the self-report scale (BSI). On the other hand however, observed depression severity (MADRS) was elevated in the older group. Therefore, it may also be that the older adult group was in fact more depressed, and was adequately diagnosed as such, as anxiety disorders have been hypothesised to lead to comorbid depression (Angst &

Vollrath, 1991). Possibly, when confronted with a self-report questionnaire, the older adult group attributed their psychiatric symptoms to general medical problems or to the process of aging (Knauper & Wittchen, 1994), and as such did not report a high depression score. Fitting the observation of more mood comorbidity in the late adult group, older patients also scored higher on measures of inner tension and role limitations due to emotional problems. The higher level of role limitations due to emotional problems with increasing age indicates that older patients feel more limited in their daily functioning as a result of their emotional problems. As age groups did not differ in their levels of anxiety severity per se, this may reflect different (perceptions of) tasks set in daily life, for example in caregiving tasks or in work situations. Both younger groups reported more interpersonal sensitivity and hostility. Although feelings of hostility and interpersonal sensitivity could be thought to be reflective of cortical immaturity, as brain development has been demonstrated to continue into early adulthood (Uhlhaas et al., 2009). However, this thought is contradicted by the fact that the mid-adult group also demonstrated higher levels of hostility than the late adult group. Alternatively, feelings of hostility and interpersonal sensitivity may emerge from the demands that are typically made of the younger age groups which may have a stronger social component, for example in achieving independence, possible student life, dating, and career development. In addition, increased interpersonal sensitivity fits our findings of higher prevalence of social phobia in the younger age groups although feelings of hostility do not. Interestingly, younger patients' hostility scores, which were measured through a subscale on the self-report BSI, as well as an item on the observer-rated BAS, were elevated only on the self-report measure, perhaps the single item of the BAS lacked sensitivity to detect the variation in hostility.

Our study has several strengths. To our knowledge, it is the first study to report on age related characteristics of anxiety disorders across the adult life span (i.e. ages 18-65). Furthermore, as we examined outpatients, using data from a large, representative naturalistic sample, we ensured applicability to clinical practice. The inclusion of a broad set of patient characteristics, covering social demographics, diagnostic characteristics, anxiety- and general psychiatric symptom profiles, as well as generic health status, further strengthens our study. However, several limitations need to be acknowledged. As our study was explorative in nature, we used unsubstantiated cut-offs to define the age groups. Although our cut-offs have been used previously (van Noorden et al., 2011; Regier et al., 1990; Somers et al., 2006; Robins et al., 1984), alternative cut-offs may better fit the research question. In addition, no information on primary diagnosis or physical comorbidity was available in our sample. Furthermore, it must be noted that although differences between groups were significant after correction for multiple testing, effect sizes indicated that the differences were generally small. This does not imply that differences between groups are not clinically important, but it does warrant moderation when interpreting the data. As differences were small, our results could be interpreted as

support for the uniform approach of the group of 18 through 65 year-old in terms of diagnostic protocols. In addition, we studied an outpatient group, therefore, our results should be interpreted accordingly, they may not generalise to anxiety disorders as seen in the general population.

In conclusion, our study has convincingly demonstrated that significant differences exist between different age groups in outpatients with anxiety disorders with regard to social demographic and clinical characteristics, symptomatology, and generic health status. Older patients were more often male, unemployed, living with a partner, and had lower education levels. With regard to clinical characteristics, older patients were more often diagnosed with agoraphobia and comorbid depression, younger patients were more likely to have social phobia. Anxiety symptom profiles of older patients showed more aches and pains, inner tension, and sleep problems, whereas younger patient had higher levels of hostility. The general psychiatric symptom profiles of younger patients showed elevated scores on measures of interpersonal sensitivity and hostility. With regard to generic health status, older patients experienced lower levels of physical functioning and vitality, while they had more physical problems, role limitations due to emotional problems, and pain. Although a number of these differences fit expectations related to development across the adult lifespan, they are relevant and clinicians should be aware of these differences as they relate to needs of patients and demands made of them. The finding of increased observed but not self-reported depression in the older adult group merits special attention in clinical practice as well as in future research. It is important to be aware of increased chances of agoraphobia and mood comorbidity in older adults, as both have been associated with negative outcome (Angst & Vollrath, 1991; Schat et al., 2013). As expected, younger adults seem less burdened by physical complaints, but have more feelings of hostility and interpersonal sensitivity, possibly reflecting strong social demands that are made of them. Older adults less often have a job, but more often live with a partner, a possible source of support in dealing with anxiety. Finally, the older groups report more sleep problems and feel more limited in their functioning as a result of emotional problems. Clinicians should be aware of these differences, and where possible take them into account when providing treatment.

Table 3.1 Social demographic and clinical categorical patient characteristics per age group in 1950 outpatients diagnosed with DSM-IV-TR anxiety disorders (panic disorder with or without agoraphobia, agoraphobia without panic, social phobia and/or generalised anxiety disorder).

				Categorical comparison					Linear comparison	
				overall		phi post-hoc				
Number (%)	Early adult (E) 18-25 (n=435)	Mid adult (M) 26-40 (n=788)	Late adult (L) 41-65 (n=727)	Cramer's V	p	*E-M*	*E-L*	*M-L*	B (95%CI)	p
Male gender	122 (28.0)	288 (36.5)	315 (43.3)	0.12	<.001	0.09	0.12	0.07	2.83 (1.76 - 3.89)	<.001
Fulltime or part time job	203 (46.7)	370 (47.0)	274 (37.7)	0.09	<.001	--	-0.13	-0.09	-2.45 (-3.49 - -1.40)	<.001
High education level	285 (65.5)	479 (60.8)	348 (47.9)	0.15	<.001	--	-0.18	-0.13	-4.03 (-5.06 - -2.99)	<.001
Living with partner	97 (22.3)	458 (58.1)	468 (64.4)	0.33	<.001	0.34	0.45	0.06	6.60 (5.60 - 7.59)	<.001
Comorbid depression	211 (48.5)	407 (51.6)	442 (60.8)	0.10	<.001	--	0.22	0.09	2.52 (1.48 - 3.56)	<.001
Substance abuse /dep.	28 (6.4)	39 (4.9)	25 (3.4)	--	0.06	--	--	--	-2.88 (-5.33 - -0.43)	0.02
Alcohol abuse/dep.	23 (5.3)	43 (5.5)	54 (7.4)	--	0.20	--	--	--	2.40 (0.24 - 4.56)	0.03
Multiple anxiety disorders	80 (18.4)	122 (15.5)	102 (14.0)	--	0.14	--	--	--	1.12 (-0.31 - 2.56)	0.12
Panic disorder	178 (40.9)	352 (44.7)	286 (39.3)	--	0.10	--	--	--	-0.30 (-0.10 - 0.04)	0.39
Agoraphobia	75 (17.2)	148 (18.8)	210 (28.9)	--	<.001	--	0.12	0.12	0.21 (0.13 - 0.29)	<.001
Social phobia	173 (39.8)	242 (30.7)	171 (23.5)	--	<.001	-0.09	-0.23	-0.08	-0.22 (-0.29 - -0.15)	<.001
Generalised anxiety disorder	92 (21.1)	177 (22.5)	171 (23.5)	--	0.64	--	--	--	0.04 (-0.04 - 0.12)	0.35

Comparisons between the three age groups were made using Chi-squared test with post-hoc comparisons using Bonferroni correction for multiple testing. The MINI International Neuropsychiatric Interview-Plus (MINI-Plus) was used to collect DSM-IV-TR diagnostic information (type of anxiety disorder, number of simultaneously occurring anxiety disorders, presence of a comorbid mood disorder, comorbid alcohol- or substance abuse or -dependence); DSM-IV-TR denotes Diagnostic Statistical Manual-fourth edition, text revision; E denotes the early adult group (18-25; n=435); M denotes the mid-adult group (26-40; n=788); L denotes the late adult group (41-65; n=727).

Table 3.2 Anxiety symptoms as measured with the Brief Anxiety Scale (BAS) per age group in 1950 outpatients diagnosed with DSM-IV-TR anxiety disorders (panic disorder with or without agoraphobia, agoraphobia without panic, social phobia and/or generalised anxiety disorder).

				Categorical comparison					Linear comparison	
	Early adult (E)	Mid adult (M)	Late adult (L)	overall		Cohen's d post-hoc				
Mean (Standard Deviation)	**18-25 (n=435)**	**26-40 (n=788)**	**41-65 (n=727)**	**Eta squared**	**p**	***E-M***	***E-L***	***M-L***	**B (95%CI)**	**p**
Aches and pains	1.93 (1.37)	2.09 (1.45)	2.29 (1.52)	0.01	<.001	--	-0.25	--	0.85 (0.50 - 1.20)	<.001
Inner tension	3.03 (1.00)	3.15 (1.01)	3.29 (1.00)	0.01	<.001	--	-0.26	--	1.24 (0.72 - 1.75)	<.001
Hypochondria	0.51 (0.97)	0.63 (1.12)	0.62 (1.08)	--	0.14	--	--	--	0.13 (-0.36 - 0.61)	0.60
Worries	1.90 (1.60)	2.02 (1.63)	1.82 (1.64)	--	0.07	--	--	--	-0.15 (-0.47 - 0.17)	0.36
Phobia	2.25 (1.82)	2.12 (1.84)	2.16 (1.87)	--	0.52	--	--	--	-0.15 (-0.43 - 0.13)	0.30
Hostility	1.63 (1.39)	1.73 (1.38)	1.49 (1.40)	--	.003	--	--	--	-0.71 (-1.08 - -0.34	<.001
Reduced sleep	1.81 (1.59)	2.22 (1.68)	2.43 (1.74)	0.02	<.001	-0.25	-0.37	--	0.94 (0.63 - 1.24)	<.001
Rep. aut. dist.	2.49 (1.10)	2.56 (1.18)	2.67 (1.16)	--	0.02	--	--	--	0.50 (0.05 - 0.95)	0.03
App. aut. dist.	1.15 (1.09)	1.01 (1.07)	1.04 (1.08)	--	0.09	--	--	--	-0.39 (-0.97 - 0.10)	0.12
App. muscle tension	1.69 (1.11)	1.68 (1.15)	1.70 (1.18)	--	0.90	--	--	--	0.04 (-0.42 - 0.49)	0.88

Comparisons between the three age groups were made using Chi-squared test with post-hoc comparisons using Bonferroni correction for multiple testing. Anxiety symptoms were measured with the Brief Anxiety Scale (Tyrer et al., 1984). DSM-IV-TR denotes Diagnostic Statistical Manual-fourth edition, text revision; E denotes the early adult group (18-25; n=435); M denotes the mid-adult group (26-40; n=788); L denotes the late adult group (41-65; n=727); Rep. aut. dist. denotes the subscale reported autonomic disturbances; App. aut. dist. denotes the subscale apparent autonomic disturbances; App muscle tension denotes the subscale apparent muscle tension.

Table 3.3 General psychiatric symptoms as measured with the Montgomery Åsberg Depression Rating Scale (MADRS) and the Brief Symptom Inventory (BSI) per age group in 1950 outpatients diagnosed with DSM-IV-TR anxiety disorders (panic disorder with or without agoraphobia, agoraphobia without panic, social phobia and/or generalised anxiety disorder).

				Categorical comparison					Linear comparison	
	Early adult (E)	Mid adult (M)	Late adult (L)	overall		Cohen's d post-hoc				
Mean (Standard Deviation)	**18-25 (n=435)**	**26-40 (n=788)**	**41-65 (n=727)**	**Eta squared**	**p**	***E-M***	***E-L***	***M-L***	**B (95%CI)**	**p**
MADRS	18.69 (8.30)	20.38 (8.31)	21.82 (8.54)	0.01	<.001	-0.20	-0.37	-0.17	0.187 (0.127 -0.248)	<.001
BSI Depression	1.86 (0.98)	1.84 (0.97)	1.84 (0.98)	--	0.92	--	--	--	-0.11 (-0.65 - 0.42)	0.69
BSI Somatisation	1.30 (0.80)	1.37 (0.87)	1.35 (0.89)	--	0.44	--	--	--	0.15 (-0.45 - 0.75)	0.63
BSI Obs. Comp.	1.77 (0.92)	1.91 (0.94)	1.89 (0.95)	--	0.03	--	--	--	0.31 (-0.24 -0.86)	0.27
BSI Int. sens.	2.06 (1.08)	1.94 (1.07)	1.73 (1.06)	0.01	<.001	--	0.38	0.20	-1.35 (-1.83 - -0.87)	<.001
BSI Anxiety	2.01 (0.86)	2.07 (0.87)	2.05 (0.87)	--	0.53	--	--	--	0.14 (-0.46 - 0.74)	0.65
BSI Hostility	1.18 (0.93)	1.12 (0.92)	0.95 (0.85)	0.01	<.001	--	0.26	0.19	-1.62 (-2.19 - -1.04)	<.001
BSI Phobic anxiety	1.76 (0.99)	1.72 (0.96)	1.65 (0.99)	--	0.11	--	--	--	-0.67 (-1.20 - -0.13)	0.01
BSI Paranoid id.	1.34 (0.97)	1.37 (1.00)	1.29 (0.98)	--	0.24	--	--	--	-0.44 (-0.97 - 0.09)	0.10
BSI Psychoticism	1.47 (0.81)	1.50 (0.84)	1.38 (0.83)	--	0.02	--	--	--	-0.85 (-1.47 - -0.22)	.008

Comparisons between the three age groups were made using ANOVA with post-hoc comparisons using Bonferroni correction for multiple testing. BSI denotes Brief Symptom Inventory (Derogatis & Melisaratos, 1983); DSM-IV-TR denotes Diagnostic Statistical Manual-fourth edition, text revision; E denotes the early adult group (18-25; n=435); M denotes the mid-adult group (26-40; n=788); L denotes the late adult group (41-65; n=727); BSI Obs. Comp denotes the subscale obsessive compulsiveness; BSI int. sens. Denotes the subscale interpersonal sensitivity; BSI Paranoid id. Denotes the subscale paranoid ideation.

Table 3.4 Generic health status as measured with the Short Form-36 (SF-36) per age group in 1950 outpatients diagnosed with DSM-IV-TR anxiety disorders (panic disorder with or without agoraphobia, agoraphobia without panic, social phobia and/or generalised anxiety disorder).

				Categorical comparison					Linear comparison	
	Early adult (E)	Mid adult (M)	Late adult (L)	overall		Cohen's d post-hoc				
Mean (Standard Deviation)	**18-25 (n=435)**	**26-40 (n=788)**	**41-65 (n=727)**	**Eta squared**	**p**	***E-M***	***E-L***	***M-L***	**B (95%CI)**	**p**
Physical functioning	20.05 (20.42)	23.93 (22.05)	30.77 (24.40)	0.03	<.001	-0.18	-0.48	-0.29	0.09 (0.07 - 0.11)	<.001
Social functioning	57.01 (27.02)	60.64 (24.37)	61.90 (24.37)	--	.005	--	--	--	0.03 (0.01 - 0.05)	0.003
Role limitations physical	56.78 (39.36)	64.78 (38.48)	71.70 (36.83)	0.02	<.001	-0.21	-0.39	-0.18	0.04 (0.03 -0.05)	<.001
Role limitations emotional	70.88 (34.54)	80.16 (30.43)	78.40 (32.07)	0.01	<.001	-0.29	-0.23	--	0.02 (0.01 - 0.04)	0.007
Mental health	62.45 (15.17)	62.69 (15.07)	63.88 (16.19)	--	0.21	--	--	--	0.04 (0.00 - 0.07)	0.04
Vitality	64.54 (15.45)	67.26 (15.93)	68.65 (16.43)	0.01	<.001	-0.17	-0.27	--	0.07 (0.03 - 0.10)	<.001
Bodily pain	32.77 (24.38)	36.71 (27.15)	39.95 (28.22)	0.01	<.001	-0.27	--	--	0.04 (0.02 - 0.06)	<.001
General health perception	49.86 (20.24)	50.91 (19.51)	52.24 (20.56)	--	0.13	--	--	--	0.02 (-0.01 - 0.05)	0.11

Comparisons between the three age groups were made using ANOVA with post-hoc comparisons using Bonferroni correction for multiple testing. Generic health status was measured using the Short Form-36 (Aaronson et al., 1998; SF-36); SF-36 scores were inverted. DSM-IV-TR denotes Diagnostic Statistical Manual-fourth edition, text revision; E denotes the early adult group (18-25; n=435); M denotes the mid-adult group (26-40; n=788); L denotes the late adult group (41-65; n=727).

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