Chapter 7
General discussion
OUTLINE

The aims of the research in this thesis were to provide more insight into the limited knowledge on the prevalence and potential psychosocial consequences of ADHD in late life. We examined this in the general older Dutch population. In the current chapter, the main findings of the thesis will be summarized, discussed and placed into context. In addition, methodological considerations will be discussed, followed by implications for the clinical practice. Finally, ideas for future research will be delineated.

MAIN FINDINGS

The prevalence of ADHD in older adults

In chapter 2 we reported the prevalence of ADHD in the general older population. Prevalence rates of 2.8% for ‘full-blown’ ADHD and 4.2% for subclinical ADHD were found among older adults in the general Dutch population. The prevalence rates are slightly lower than the prevalence rates of ADHD in children (5.0%) and adults (4.4%) worldwide (1). Previous research showed lower prevalence rates of ADHD among adults than among children, therefore it was expected that the prevalence rate among older adults would be lower than the prevalence rates in children and younger adults. A recent study among older adults in Australia replicated the finding that the prevalence of ADHD symptoms appears to decrease with age (2).

This is the first epidemiological study, systematically studying ADHD in the general older population, using a diagnostic interview. The study demonstrates that ADHD does not disappear in older age and it is a topic very much worthy of further study.

In our study, men and women reported similar levels of ADHD symptoms. This is in contrast to most prevalence studies among children where ADHD is more prevalent among boys (3,4). Among adults inconsistent prevalence estimates for men and women are found; some studies found a higher prevalence rate among men (5–7) while others found similar prevalence estimates between genders in adults (8–10). Among older adults, one study did not find any gender differences (2), while another found that older men reported more ADHD symptoms than women (11). An explanation for the gender difference among children with ADHD may be that girls with ADHD are less likely to come to the attention of teachers and health care providers, since hyperactivity and externalizing behavior are less frequently observed among girls than among boys with ADHD (10,12). Girls with ADHD are twice as likely as boys to manifest the predominantly inattentive subtype (13). These symptoms are more covert than the impulsivity and hyperactivity symptoms. The overt
signs of hyperactivity/impulsivity seem to decline in adulthood, while inattention continues largely unchanged (14–16). The changes in ratio of the inattentive/hyperactive-impulsive symptoms may be an explanation why there is a smaller gender difference is found in ADHD prevalence rates in adults.

**Psychosocial functioning of older adults with ADHD**

In chapter three the association between ADHD in older adults and social functioning (intimate and social relationships) and social participation (education and work) were examined. Two ways of measuring ADHD were used; ADHD according to formal diagnostic criteria and the score on an ADHD symptom rating scale. The results of this study showed that older adults with an ADHD diagnosis had a three times greater odds of being divorced or never married than older adults without ADHD. Older adults with higher levels of ADHD symptoms reported greater participation in recreational activities, more emotional and social loneliness, reported more emotional support given and in addition, were more likely to report a lower income level. After adjustment for depressive symptoms, the association between social loneliness and ADHD symptoms disappeared. Loneliness and depression are strongly related (17) and therefore it can be expected that depressive symptoms affect the association between ADHD and loneliness (18,19).

Since the association between ADHD symptoms and recreational activities became significant when controlling for depressive symptoms, depressive symptoms seemed to mask the association between ADHD and recreational activities. Older adults with ADHD and low depressive symptoms probably have a greater participation in recreational activities than older adults with both ADHD and depressive symptoms.

In chapter four the comorbidity of anxiety and depressive symptoms in older adults with ADHD was examined cross-sectionally as well as longitudinally. The most important finding was that ADHD diagnosis and ADHD symptoms among older adults were indeed associated with comorbid anxiety and depressive symptoms. This association was found cross-sectionally and longitudinally for both depressive and anxiety symptoms, with clinically relevant effect sizes.

In the longitudinal analysis, the interaction between time and ADHD symptoms was significant, indicating that the mood of older adults with higher levels of ADHD symptoms deteriorates over time compared to older adults with lower levels of ADHD symptoms. It is unknown what the underlying mechanism is behind this interaction. A possible explanation could be that older adults with chronically elevated levels of ADHD symptoms may have limited coping strategies to deal with the adverse effects of ageing compared to older adults
with low levels of ADHD symptoms. Adults with ADHD are known to use maladaptive coping strategies, such as confrontation, escape-avoidance and a lack of planful problem solving (20). With ageing, one has to cope with losses and decline in health and this may be more difficult for older adults with severe ADHD symptoms, possibly leading to increasing levels of depressive symptoms.

The etiology of ADHD and comorbid depression and anxiety remains to be solved (21). For comorbid depression and ADHD there is evidence for a shared common genetic origin (22,23) In recent years more insight is gained into the candidate genes conferring liability to both depressive and ADHD traits, such as the SNAP-25 gene (23,24). Some studies support the pathway of ADHD leading to depression. ADHD symptoms in early life may lead to problems in social interactions (25), academic functioning (26) and parental interactions and this may lead indirectly, or directly, to depressive symptoms later on in life. For comorbid anxiety and ADHD there is no evidence for a shared common genetic origin (27). Nigg et al. (28) describe two developmental pathways that may lead to both conditions. Their first pathway describes how ADHD may lead to anxiety. This pathway involves primary ADHD, with weak regulatory control in early childhood and high negative withdrawal or anxiety. Such a pathway may involve temperament risks at an early age that may result in an inability to effectively regulate anxiety (28,29). In addition, according to their second pathway, anxiety interferes with normal regulatory development and may lead to cognitive dysfunction such as inattentiveness (28,29).

In chapter five the association between ADHD and personality characteristics in old age and the possible mediating role of personality characteristics in the association between ADHD and depressive symptoms were examined. Older adults with ADHD reported having lower self-esteem, lower self-efficacy, lower sense of mastery and higher levels of neuroticism and social inadequacy than older adults without ADHD. In addition, the results also showed that mastery and self-esteem partly mediated the relationship between ADHD severity and depressive symptoms.

A possible explanation for this finding may be that an earlier developed negative view of the self continues to exist into late life. This lifelong poor self-belief may imply that older adults with ADHD experience their low self-esteem, self-efficacy and mastery as ego-syntonic (consistent with one's sense of self) and clinicians treating older adults with ADHD should be aware of the possible complex psychiatric presentation of ADHD with internalized poor self-beliefs.
Chapter six describes a qualitative study on how ADHD symptoms may have affected the lives of older adults, aged 65 and over, who meet the diagnostic criteria of ADHD, but were not diagnosed with the disorder during their life course, except for one respondent. We also studied whether the ADHD symptoms had changed over the life course using retrospective self-reports. In total 17 older adults participated in the study. ‘Classic’ ADHD symptoms were reported such as being talkative, being impulsive and being easily distracted by inner thoughts or external stimuli. In addition, low self-esteem, overstepping boundaries and feeling misunderstood were themes that emerged. The theme ‘low self-esteem’ is in concordance with our previous quantitative study described in chapter five.

An important finding is that the ADHD symptoms seem to have had a more negative impact in the younger years than in the current lives of the respondents. There may be several explanations for this. First, respondents learned to cope with the symptoms throughout their lives. For example, they learned to ‘think before they act’ since being (verbally) impulsive had a negative influence on relationships. In addition, they may have developed adequate coping strategies to deal with problems. Second, normal neurobiological ageing processes may lead to diminished manifestations of certain symptoms. There is converging evidence from behavioral and neurobiological studies showing that impulse control improves from childhood to adolescence, as well as from adolescence to adulthood (30). Third, the later life stage seemed to play a role in the expression of certain symptoms. After retirement the pressure of work disappeared and in this later stage of life, respondents were more often confronted with illnesses, which ‘forced’ them to be less active or impulsive.
Interpretation of the main findings in relation to the model of impairment

As shown in the introduction, Safren and colleagues developed a framework for understanding how negative life experiences may reinforce functional impairment and lead to mood disturbance in adults with ADHD, see Figure 1 (31). Whether the results of our research among older adults with ADHD are in concordance with this model will be discussed.

1. Starting with the core impairments in attention, inhibition and self-regulation, our results are in line with the model. There is a group of older adults that reported the chronic core impairments throughout the life span in both our quantitative and qualitative study.

2. The (problematic) compensatory strategies were not investigated in our studies, but were mentioned by some respondents in the qualitative study. In the qualitative study inadequate, such as difficulty planning and organizing, as well as adequate coping strategies, such as learning to ‘think before you act’ and memory training, were mentioned. Our results of the qualitative study are partly in line with the model; we did find that some older adults were able to utilize compensatory strategies.

Figure 1. A Cognitive –Behavioral model of impairment in adult ADHD by Safren (31)
3. Our results only partly confirmed functional impairments in older adults with ADHD. Older adults with higher levels of ADHD symptoms were more likely to report a lower income level. The results of the qualitative study showed that most of the older adults with ADHD had problems at school and with teachers and adults when they were young. Although the results regarding social functioning and (previous) work participation were mostly insignificant, the results did show a slight but not significant trend in the expected direction; respondents with ADHD had a smaller network size and were less well presented in high job occupational skills level.

4. A history of failure, underachievement and relationship problems was not examined in our quantitative studies, except for the greater divorce rate among older adults with ADHD, but were mentioned by most of the respondents in the qualitative study.

5. Dysfunctional cognitions and self-beliefs were in concordance with the results in the quantitative and qualitative studies. Older adults with ADHD reported having lower self-esteem, lower self-efficacy and lower sense of mastery than older adults without ADHD. In addition, mastery and self-esteem partly mediated the relationship between ADHD severity and depressive symptoms.

6. The results of the (longitudinal) quantitative study did replicate the mood disturbance predicted by the model. ADHD diagnosis among older adults was associated with comorbid anxiety and depressive symptoms, cross-sectionally as well as longitudinally. Anger and guilt were not examined, however we did find an association between level of ADHD symptoms and social and emotional loneliness.

In conclusion: the majority of our results are in concordance with the conceptual model. However, this model does not include the possible pathway of adequate coping leading to positive self-beliefs and positive behavior. Since this model has been developed as a conceptual basis for treating ADHD in adulthood, it is not so strange that adequate coping has not been added to the model. Adults who seek treatment for their problems, are more likely to use inadequate coping strategies that reinforce the vicious circle. Our qualitative study suggest that there is a group of older adults with ADHD that learned to cope with the symptoms and in turn do not have dysfunctional self-beliefs. Studies showed that older adults in the general population use less dysfunctional coping strategies than younger adults. For instance, older adults less often abuse alcohol and/or drugs, less often vent emotions (32), have greater impulse control, and, more often, have the tendency to positively appraise conflict situations (33). Another explanation may be the population-based nature of the sample we used in our study. Respondents in clinical samples are often more impaired than respondents in a population-based sample.
METHODOLOGICAL CONSIDERATIONS

Longitudinal study of ageing
All the epidemiological data used for this thesis were derived from the Longitudinal Ageing Study Amsterdam (LASA) cohort. Using this type of observational study, the natural course of health and psychosocial functioning in a real-life setting can be studied over time, which encourages the generalizability of the results. However, longitudinal studies inevitably involve attrition of participating respondents. Attrition in the LASA cohort can be attributed for the largest part to mortality but attrition due to mortality does not necessarily influence the representativeness of the sample since high mortality is a characteristic of older populations (34). Attrition due to frailty in LASA was associated with poorer self-rated health, more cognitive problems and having a higher age, while attrition due to refusal was not associated with demographics and mental and physical health (34). Since ADHD in adults is associated with comorbid depression, anxiety and substance use disorders (35,36), more car accidents (37) and increased mortality rates (38), the remaining ADHD sample might be healthier than a fully representative sample would have been.

Measurement of ADHD in older adults
Diagnosing ADHD in older adults comes with several limitations and ADHD as determined in our sample should be interpreted with some caution. First, there are no validated ADHD diagnostic interviews for older adults available. The diagnostic instrument used in our studies, the Diagnostic Interview for ADHD in Adults, second edition, (Diagnostisch Interview Voor ADHD bij Volwassenen, DIVA 2.0) is based on the DSM-IV-TR criteria as developed for children, and has not yet been validated in (older) adults (39). Clinical observations have shown that symptoms of ADHD are different in adults and in children, although no less impairing. It seems likely that symptoms of ADHD might be different for older people too. Weiss describes possible challenges ADHD presents to older adults (40), such as an increase in cognitive impairments that were previously compensated for by coping mechanisms. This could mean that the DSM-IV-TR criteria currently used may not be subtle enough for diagnosing ADHD in older adults.

The semi-structured DIVA (2.0) was modified into a fully structured interview for this study. Although it is unknown what the effect of this may have been on the results, previous studies have shown that fully structured interviews such as the Composite International Diagnostic Interview (CIDI) do very well in some disorders, such as anxiety disorders and depression (41), while they tend to underestimate the prevalence of others, such as bipolar disorder (42). Under- or overestimation may also be the case here, meaning that the prevalence of ADHD based on the fully structured interview should be interpreted with some caution.
In addition, other psychiatric disorders were not included in the diagnostic interview. A cross-sectional study of age-related changes in ADHD symptoms in a clinical sample diagnosed with ADHD (ages 16–50 years) showed that older adults reported more depressive symptoms and inattentive symptoms, whereas inattentive symptoms improved according to informants (43). The subjective increase of attention symptoms may be associated with depression. This could mean that possible affective symptoms present in older persons in our study may have led to misdiagnosis. However, a respondent would only receive an ADHD diagnosis in our study when six out of nine ADHD symptoms were already present in childhood. This childhood onset and lifetime persistence of symptoms and impairment should filter out the false positives.

Another limitation regards the recollection of childhood symptoms. Since external reports, from informants and/or school reports were not available in our study, the ADHD diagnosis relied solely on the respondents’ recollection of childhood symptoms. Studies on concordance between recollection of patients with ADHD and recollection of informants have shown inconsistent results; most studies showed an underestimation of childhood symptoms among children and young adults (44–47), although one study found that recollection by the participant produced overestimation (48), while two other studies found that adults with ADHD can be just as reliable in reporting (attention) problems as informants (49,50). Since inconsistent results of reliable recollection are found, it is recommended that during ADHD assessment in older adults, when possible, external reports from informants and/or school reports will be used.

**Sample size**
The relatively small sample size of the ADHD sample makes it difficult to draw firm conclusions and possibly explains the null results in chapter three, the study concerning social functioning and participation in older adults with ADHD. However, the effect sizes of the analyses in chapter four (ADHD and comorbid anxiety and depressive symptoms) and five (ADHD and personality characteristics) were sufficient. The small sample size, in particular, prohibited us in examining certain associations. The most important one is not being able to examine the ‘full-blown’ ADHD sample and comparing the sample with the ‘sub-clinical ADHD’ and control sample. In addition, due to the small sample size (N=23), it was not possible to include more than two confounders in the analyses; recommended is a sample size of 10 cases for each independent variable (51).

**Longitudinal versus cross-sectional analyses**
Except for one study, cross-sectional analyses were performed. A limitation of cross-sectional studies is that is impossible to determine a causal relationship. It thus remains
unclear whether ADHD leads to worse psychosocial functioning, since there might be other processes or pathways leading to worse psychosocial functioning, such as other psychiatric disorders. In chapter five, we examined the mediating role of personality characteristics in the association between ADHD and depressive symptoms, with cross-sectional analyses. Ideally, longitudinal analyses are used in mediation analyses. Because two of the personality characteristics were only available in one measurement wave, no longitudinal analyses could be performed. Therefore we are limited in drawing strong causal conclusions.

An advantage of longitudinal analyses compared to cross-sectional analyses is that conclusions can be drawn on the order in which determinant and outcome occur. Nevertheless, even with longitudinal studies one has to be careful making strong causal conclusions. Since LASA respondents are followed up every three years, between waves, unmeasured changes in for instance health, are unknown. Whether a causal relationship between ADHD and depressive and anxiety symptoms exists cannot be determined for sure.

**IMPLICATIONS FOR CLINICAL PRACTICE**

The results of the research in this thesis contribute to the limited knowledge on prevalence and psychosocial consequences of ADHD in late life and have some implications for clinical practice.

Results of this thesis showed that ADHD is prevalent among older adults and that ADHD has a dimensional manifestation of the symptoms and impairments in old age. Respondents varied in intensity of the symptoms and impairments, ranging from little to severe impairments in several fields such as marital conflicts and peer rejection. A clinical implication is that, first of all, clinicians working with older adults should be alert for potential ADHD. Little is known about ADHD in geriatric psychiatry. Since ADHD in older adults is associated with anxiety and depressive symptoms, when older adults report depressive and anxiety symptoms, clinicians should be alert for possible comorbid ADHD.

Our qualitative study showed that the ADHD symptoms seem to have had a more negative impact in the younger years than in the current lives of the respondents. Therefore, implications for the clinical practice are an early detection and treatment of ADHD in children and adults. Effective treatment at young age, with the aim to learn to live well with ADHD may prevent a lot of misery over the life span.
**Treatment of older adults with ADHD**

Results of this thesis imply that, when treating older adults with ADHD one should direct attention to:

- Potential comorbid anxiety and depressive symptoms
- Potential loneliness
- Potential ego-syntonic poor self-beliefs

Treatment of adults with ADHD often consists of a combination of medical and psychosocial treatment. Psychosocial treatment may not cure the underlying brain dysfunction that gives rise to the core ADHD symptoms, but it may help to learn to cope with impairments, improve the side effects, and/or comorbid conditions that often go along with ADHD (52). Psychosocial treatment may include: psycho-education on ADHD and comorbid disorders; coaching; cognitive behavior psychotherapy (individual and group) and family therapy (53).

A randomized controlled trial demonstrated that cognitive behavioral therapy (CBT) in combination with medical treatment was superior to continued medication treatment alone. The CBT treatment of this trial consisted of six modules: three core modules (organizing and planning, reducing distractibility and cognitive restructuring) and three optional modules (procrastination, anger and frustration management, and communication skills). Post treatment, the CBT group reported lower anxiety and depression (54).

A brief CBT group intervention that was designed to also treat low self-esteem and self-efficacy in adults with ADHD appeared to be beneficial (55). The CBT group intervention consisted of psycho-education; how to cope with anger and frustration; explaining the CBT-model and emphasizing self-efficacy in the future; interpersonal skills and time-management, and problem solving. Adults in the CBT group showed greater improvement in self-esteem and self-efficacy than the control group. The researchers give two explanations for the change in self-esteem. First, it could be related to the increased experience of success and control that took place over the course of the workshops. Second, the increased knowledge and understanding of ADHD may reflect a change in attribution of etiology for their difficulties. Adults with ADHD may have experienced years of failure and rejection, which may have become internalized (56). A greater understanding of the neuropsychiatric mechanisms of ADHD allowed these individuals to reattribute the “blame” for their difficulties externally and, therefore, boost their self-esteem (55).

So far, no study examined the effects of psychosocial (group) treatment of older adults with ADHD, but it seems likely that older adults may also benefit from psychosocial treatment. Especially when treatment targets the specific functional deficits and comorbid conditions (such as poor self-beliefs, depressive and anxiety symptoms in the patient).
Older adults with ADHD learned to cope with the symptoms throughout their lives. Getting a clear picture of the (in)adequate coping styles a patient has developed will help the practitioner to teach new ways of coping and enforce the existing adequate coping styles.

When treating (older) adults with ADHD and comorbid anxiety or depression, the clinician must first attempt to determine which symptoms are more prominent and are having the greatest impact before starting treatment. Generally, severe mental health disorders should be treated first, such as major depression (53). However, treatment of mild depressive and anxiety disorders may be deferred until after treatment of ADHD and often needs no further treatment as the comorbid symptoms may resolve following effective treatment of ADHD (53,54). When it is necessary to treat the comorbid disorder first, treatment consisting of both medication and CBT may be helpful. CBT has a strong evidence base for treatment of anxiety and depression in adults and older adults (57).

Treatment of loneliness should be based upon a clear model of loneliness. Distinction can be made between emotional loneliness stemming from the absence of an intimate relationship or a close emotional attachment (e.g., partner or best friend), and social loneliness, stemming from the absence of a broader group of contacts or an engaging social network (58). Social loneliness may, for instance, be experienced following relocation (59). Loneliness stemming from social loneliness needs a different intervention than, for example, loneliness that is closely associated to depression. Therefore, seeking potential reasons for the loneliness and clarifying the type of loneliness is important to implement adequate intervention strategies (59).

In addition to psychosocial treatment, stimulants can be helpful in treating ADHD in children and adults. Methylphenidate and dexamphetamine are first choice medication treatments for ADHD in children and adults (60,61) Atomoxetine is usually considered the second line treatment, followed by other non-stimulants like bupropion and tricyclic antidepressants, based on efficacy outcomes in controlled studies in different age groups (53,62–64). In a pilot study eleven older adults diagnosed with ADHD, aged 56-70 years, were treated for their symptoms with methylphenidate (MPH) (65). After six months follow-up, 70% (8/11 adults) described significant improvement of their ADHD symptoms. Limitations of this study are the small sample size and not having a placebo-controlled, double-blind design. However, it does give a first insight in the medical treatment of older adults with ADHD. When treating older adults with ADHD, one must be aware of comorbid medical disorders and the potential effect of the ADHD medication on the other medical disorders and/or their medical treatment. Specifically, not in children, but in adults stimulant use was associated with adverse cardiovascular outcome (66). A possible side effect of stimulant drugs in older
adults may be worsening cardiac problems. This should be considered before prescription of stimulants to older adults.

FUTURE RESEARCH

Although this thesis added more insight into ADHD in late life, still many questions and issues remain unsolved.

Validation of diagnostic instruments
Since there is no validated diagnostic interview available to diagnose ADHD among older adults, an existing structured diagnostic interview for adults should be adapted specifically for older adults and should be validated. The diagnostic interview should be able to distinguish ADHD from other closely related syndromes in old age, such as cognitive decline and depression.

Replication of our studies
Since our studies are the first to examine ADHD in the general population and inevitably come with some limitations, it is recommended that our studies will be replicated. More specifically, future studies should examine older adults with a validated diagnostic instrument, include a larger sample size and include diagnosing other psychiatric disorders to confirm the results of this thesis.

ADHD and comorbid disorders
The (chronic) comorbid anxiety and depressive symptoms found in older adults with ADHD are very similar to what has been found among children and younger adults. To further improve our knowledge of the etiology of the comorbid anxiety and depressive symptoms, longitudinal research is needed. Longitudinal research, with a prospective cohort design, may quantify the etiology and genetic, environmental and behavioral influences on comorbidity between ADHD and depression and anxiety, and may improve our knowledge on specific determinants for comorbidity in old age. In addition, longitudinal research is necessary to gain more insight in the pathways between ADHD, depression and loneliness.

A potential comorbid disorder in late life may be Mild Cognitive Impairment (MCI) or dementia. It is currently unclear if ADHD predisposes to such disorders. In both Dementia with Lewy Body (DLB) and ADHD, a hypodopaminergic and noradrenergic substrate seems to play a central role in developing the diseases (67–70). Only two studies so far examined the possible connection between ADHD and dementia or Mild Cognitive Impairment (MCI). One study found that the frequency of retrospective diagnosis of childhood ADHD was
higher in DLB cases than in controls (70). Another study did not find an association between retrospective diagnosis of childhood ADHD and MCI or dementia (Alzheimer’s Disease) (71). Limitations of these studies are small sample size, recall bias (potentially augmented by memory decline in the cognitive impaired respondents) and the cross sectional design of the studies. To further improve our knowledge of the relationship between ADHD and MCI and/or dementia, it may be examined longitudinally whether ADHD predisposes to MCI, DLB, or Alzheimer’s disease.

Treatment of older adults with ADHD

So far only a couple of case-studies and a pilot study examined the treatment of ADHD in older adults (65,72–74), but randomized controlled studies are still lacking. Future evidence based research is needed to examine the effectiveness of psychosocial and medical treatment of older adults with ADHD. Future studies should focus on whether only cognitive behavioral therapy (CBT), only medical treatment or a combination is superior to treat older adults with ADHD. In addition, more research is necessary to the (long-term) side-effects of stimulant treatment, and interactions with concomitant diseases and medication use in old age.

Older adults with undiagnosed ADHD reported a lifelong struggle, poor self-beliefs and comorbid depressive and anxiety symptoms. Questions arise whether these problems could have been prevented when giving the right treatment earlier. Future longitudinal research is necessary examining whether treatment in childhood or adulthood will help to cope with the disorder and prevent development of poor self-beliefs and comorbid disorders in later life.

CONCLUSIONS

This thesis shows that ADHD does not disappear in old age. Moreover, the studies of this thesis showed that ADHD in old age is associated with poorer psychosocial functioning; ADHD in old age is associated with more loneliness, more (chronic) comorbid anxiety and depressive symptoms and poorer self-belief. Although the respondents still experience negative effects of having difficulty concentrating and being impulsive, the consequences were less disturbing at present than in earlier life. When treating older adults with ADHD, one should direct attention to potential loneliness, comorbid anxiety and depression and poor self-beliefs. In addition, effective treatment at young age may potentially prevent a lot of hurt over the life span.
This thesis added to the limited knowledge of ADHD in late life but many unresolved issues remain. Research aimed at validation of the diagnostic instruments; the etiological pathways of comorbid disorders and effectiveness of psychosocial and medical treatment of older adults with ADHD should be given priority.
REFERENCES


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