HOW DO THE "TWEENIES" DO?

Mental health, alcohol experiences and personality among young adolescents

Karin Boson

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DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF GOTHENBURG

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[1] A “tween” [pl. *tweenies*] is a young person in the developmental stage of preadolescence, between early childhood and adolescence, an individual approximately from eight to 14 years old. They are “in between”, thereby the name “tween”.

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ABSTRACT

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Crucial factors concerning positive development through adolescence, such as mental health, alcohol use and personality traits are incompletely investigated among the youngest adolescents. The aim of the present licentiate thesis was to investigate young adolescents' self-reported mental health (specifically in this thesis; mental well-being and mental health problems), alcohol experiences and personality. The participants in the studies constituted of a sample from the Swedish multidisciplinary *Longitudinal Research program on Development In Adolescence* (LoRDIA). In **Study I**, patterns of self-reported internalizing and externalizing problems as well as mental well-being in relation to alcohol experiences was investigated among 1383 girls and boys aged 12-13 years. Person-oriented analyses were applied to the data with the purpose of finding specific configurations that were more frequent ("types") than expected by chance. Externalizing problems were in contrast to internalizing problems, more commonly occurring among adolescents reporting high degree of mental well-being. Boys with an early alcohol debut reported high mental well-being and no co-occurring internalizing or externalizing problems. On the contrary, girls with both internalizing problems and low degree of mental well-being were overrepresented among those with alcohol experiences. Findings from this study suggest that gender as well as mental well-being perspectives need to be taken into account when describing and explaining mental health among adolescents, especially adolescents with an early alcohol debut. In **Study II,** psychometric properties of the personality measurement for children and adolescents labelled the Junior Temperament and Character Inventory (JTCI) was investigated, as well as the congruence on the child's self-report and caregiver rating of the JTCI. The study included 1046 girls and boys aged 12-14 years along with 654 caregivers. Internal consistency and convergent validity were analyzed. Norms for the Swedish self-reported and caregiver rating version of JTCI were established and the congruence on the child's self-report and caregiver-rating was analyzed. The internal structure for JTCI was not fully satisfactory; the dimension Persistence did not form a reliable construct in the Swedish self-report version. Revision and expansion of this dimension is therefore suggested. The child's own perspective as well as the caregiver's is preferable to provide a thorough understanding of the child's personality. The results also support the importance of age- and gender specific norms of the JTCI. The findings from this thesis point out the need for gender awareness when studying mental health and personality among young adolescents. Girls with anxious personality behaviors, low mental well-being and internalizing problems might easily be neglected and experienced as more mature than they are.

Keywords: alcohol debut, gender differences, JTCI, LoRDIA, mental health problems, personality, mental well-being, young adolescents

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SWEDISH SUMMARY

Barn och ungas psykiska hälsa, alkoholerfarenheter och personlighetsegenskaper är viktiga faktorer som får betydelse för deras utveckling genom ungdomsåren. Det är tydligt att den psykiska hälsan bland unga inte har blivit bättre de senaste 20-30 åren, däremot finns det motstridiga uppgifter om den har försämrats. Kungliga Vetenskapsakademien drog i en systematisk kunskapsöversikt från 2010 slutsatsen att barns och ungas psykiska ohälsa är ofullständigt utforskad i Sverige. Internationella studier har också visat att man får olika resultat beroende på om man frågar föräldrarna eller barnen själva. Sverige ligger jämförelsevis bra till när det gäller föräldraskattad psykisk ohälsa hos barnet, men i bottenskiktet när man frågar ungdomarna själva. Det går alltså att dra olika slutsatser om barn och ungdomars psykiska hälsa beroende på om man frågar föräldern eller barnet självt.

Det finns tyvärr också en begreppssammanblandning kring psykisk hälsa som ofta gör sig gällande när barn och ungdomars psykiska mående undersöks. Frånvaron av psykisk ohälsa innebär nämligen inte nödvändigtvis närvaron av psykisk välmående. Trots detta undersöks positiva dimensioner av barn och ungdomars psykiska mående i lägre utsträckning, särskilt *relationen* mellan psykisk ohälsa och välmående. Studier visar att frånvaron av positiva aspekter (psykiskt välmående) kan få minst lika stort utslag på vardagsfungerandet som närvaron av negativa aspekter (psykisk ohälsa).

Studier av ungdomars alkoholkonsumtion visar att andelen ungdomar som använder alkohol stiger betydligt mellan 11-15 års ålder, från någon enstaka gång till mer regelbunden konsumtion och berusningsdrickande. En tidig alkoholdebut, psykisk ohälsa och personlighetsfaktorer, såsom spänningssökande och impulsivitet, är alla individuella risker för utveckling av missbruk och psykiatriska problem senare i livet. Det finns också en generell risk för samsjuklighet mellan missbruk och andra psykiatriska problem (t.ex. missbruk och depression) och tidigare studier har visat att detta vanligtvis startar mellan 12-14 års ålder. Hur den psykiska hälsan ser ut bland de yngsta ungdomarna och i relation till tidig alkoholdebut är därför av intresse. Likaså är tillförlitliga instrument som kan bidra till att upptäcka och förstå de person-

lighetsmässiga förutsättningarna för en god psykisk hälsa och positiv utveckling hos barn och ungdomar av värde.

Studierna i licentiatavhandlingen ingår i ett prospektivt longitudinellt forskningsprogram LoRDIA (*Longitudinal Research program on Development In Adolescence*) och deltagarna är rekryterade inom ramen för detta. Forskningsprogrammet är ett tvärvetenskapligt samarbete mellan Hälsohögskolan i Jönköping och Göteborgs universitet och ungdomar följs från 12-13 års ålder. Det övergripande syftet med programmet är att beskriva och förklara utvecklingsförlopp av alkohol- och droganvändande relaterat till sociala faktorer, psykisk hälsa och personlighetsfaktorer. Syftet med denna licentiatuppsats var att undersöka de yngsta ungdomarnas självrapporterade psykisk hälsa (specificerat i denna licentiatuppsats som psykiskt välmående och psykiska hälsoproblem), deras alkoholerfarenheter, samt personlighetegenskaper.

I studie I undersöktes 1383 ungdomar i åldern 12-13 år och deras individuella mönster av psykiska hälsoproblem (självrapporterade internaliserade och externaliserade problem) och psykiskt välmående. Mönster av variabler inom individen analyserades, vilket skiljer sig från en mer traditionell beskrivning av variabler på gruppnivå. Hälsoprofilerna undersöktes både i den generella gruppen ungdomar, men också mer specifikt i den subgrupp av ungdomar som rapporterade tidiga erfarenheter av att dricka alkohol. Analyserna undersökte om vissa hälsoprofiler var mer vanliga (“typer”) eller mindre vanliga (”antityper”). Resultaten visade att externaliserade problem, i motsats till internaliserade problem, var mer vanligt förekommande bland ungdomar som rapporterade hög grad av välmående. Majoriteten av pojkarna med en tidig alkoholdebut rapporterade högt välmående och låg grad av både externaliserade och internaliserade problem. Flickor med både internaliserade problem och låg grad av välmående var däremot överrepresenterade bland de ungdomar som hade tidig alkoholdebut. Studiens resultat stöder en medvetenhet kring att flickor och pojkars psykiska hälsa kan ta sig i olika uttryck och att hänsyn till detta behöver tas i beskrivningar och förklaringar av psykisk hälsa bland ungdomar. Särskilt bland de ungdomarna som har tidiga alkoholerfarenheter.

Studie II är en normeringsstudie av personlighetsinstrumentet JTCI (*Junior Temperament and Character Inventory*). Instrumentet är avsett för barn och ungdomar

och finns i en självskattningsversion, samt en version som kan fyllas i av vårdnadshavaren (vanligtvis föräldern eller motsvarande föräldrafigur). Studien inkluderade 1046 ungdomar i åldern 12-14 år och 654 vårdnadshavare och de psykometriska egenskaperna hos JTCI undersöktes, samt överrensstämmelsen mellan ungdomarnas egen uppfattning och deras vårdnadshavares skattningar av deras barns temperament och karaktärsegenskaper. Reliabiliteten för JTCI var inte fullt tillfredsställande. Temperamentsdimensionen för uthållighet (Persistence) i självskattningsversionen hade inte tillräckligt hög samstämmighet mellan frågorna som är inkluderade i skalan. Omarbetning och möjligtvis en utökning av den skalan är därför att rekommendera. Det fanns en måttlig överensstämmelse mellan ungdomarnas och föräldrarnas rapportering, något som är i enlighet med vad andra studier har funnit. Information från både barnet och vårdnadshavaren bör därför inhämtas för att få en bättre förståelse av barnets personlighetsmässiga förutsättningar. Studien resultat stödjer också ålders- och könsspecifika normer för JTCI.

Sammanfattningsvis pekar resultaten från den här licentiatavhandlingen på betydelsen av att vuxna är medvetna om flickor och pojkars olika förutsättningar gällande deras psykiska hälsa och personlighet. Flickor med ängsliga personlighetsegenskaper, låg grad av välmående och internaliserade problem kan lätt försummas och upplevas som mer mogna än vad de egentligen är.

PREFACE

This thesis is based on the following two studies, referred to in the text by their roman numerals:

I. Boson, K., Berglund, K., Wennberg, P., & Fahlke, C. (2015). Well-being, Mental Health Problems and Alcohol Experiences among Swedish Young Adolescents: A General Population Study.
Submitted

II. Boson, K., Brändström, S., & Sigvardsson, S. (2016). The Swedish Version of Junior Temperament and Character Inventory (JTCI): Psychometric Properties of Children's Self-Report and Caregivers' Rating.
Submitted

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Karin Boson, February 2016

INTRODUCTION

The present licentiate thesis includes two studies (I and II) investigating mental health, alcohol experiences and personality profiles in a general sample of young adolescents, in popular sciences and commercial media, referred to as "tweenies".

A "tween" [pl. *tweenies*] is a young person in the developmental stage of preadolescence, between early childhood and adolescence, an individual approximately from eight to 14 years old. They are "in between", thereby the name "tween". They use attributes related to the teenage period and adulthood (e.g. clothes and appearance). However, they might be less mature than they look. The term adolescence derives from the Latin word *adolescere*, which means "to grow into adulthood" and the adolescent period is said to begin somewhere around 10 years and ends at approximately 20 years of age. A scientifically used categorization is to divide the adolescent years into three developmental sub phases, referred to as the early (about ages 10-13), middle (about ages 14-17) and late adolescence (about ages 18-21) (Steinberg, 2014). Hence, the adolescents included in this thesis are in the developmental phase of early to middle adolescence, but will be referred to as young adolescents.

Early adolescence is the age period in which the children mature and develop towards greater autonomy, adult body, mind and behavior, but the "tween" is still in need of support from the caregivers. Hence, guidance from caregivers in daily life require adaptation to the maturity level of the child and include both boundaries and support (Collins, Madsen, & Susman-Stillman, 2002; Steinberg & Silk, 2002). However, the transformation from child to adolescent is a developmental phase where caregivers may feel unsure of how to act and how to relate to their child (Steinberg & Silk, 2002). The quality of the attachment between child and caregiver is related to complex developmental systems and processes and said to be the most important underlying factor concerning children's mental health and positive development (Sroufe, 2005). The child's identity is also progressing during adolescence and findings indicate that a positive identity development is related both to maturation of personality and mental well-being (Meeus, 2011; Meeus, van de Schoot,

Keijsers, & Branje, 2012). Physical, cognitive, emotional and social skills take considerably developmental steps during this period and these changes can indeed be experienced as dramatic and challenging both for the child and caregivers (Steinberg & Silk, 2002). Symptoms of worry and sadness directed inward (internalizing behavior) as well as aggressiveness directed outward (externalizing behavior) are common in adolescence and can be seen as part of a developmental process towards maturation and autonomy. However, for some adolescents these problems behavior can develop to more mental health problems and even to personality disorders, such as anti-social personality disorder, later in life (Steinberg, 2014).

The adolescent years are typically the period in which alcohol use normally is introduced and increases steadily (Duncan, Duncan, & Strycker, 2006; Young et al., 2002). Many adolescents in the western cultures will experiment with alcohol at some point in their adolescence and possibly have high risk consumption for a period, but only a minority will develop alcohol abuse. Adolescents with an early initiation of alcohol use and inebriation are however exposed to a higher risk for later alcohol abuse/dependence, especially adolescents with co-occurring mental health problems (Kessler et al., 1996). Still, prospective studies on mental health, alcohol use and personality are insufficient. This could be linked to the fact that most studies use cross-sectional data and are conducted retrospectively with adult informants. The opportunities to claim casual explanations of mental health problems and alcohol abuse are therefore limited.

There are different models to describe causality processes between alcohol and mental health problems (Mueser, Noordsy, Drake, & Fox, 2003): Firstly, mental health problems precede alcohol abuse and alcohol is used as self-medication. Secondly, people with alcohol abuse develop psychological and social problems over time. Thirdly, there is an interaction effect between initial mental health problems and problems developed due to alcohol use. Finally, other important variables affect both increased mental health problems and alcohol abuse. The presence or absence of mental well-being and different personality traits are examples of important variables in the latter model.

How to prevent, detect and treat mental health problems and enhance mental well-being among children and adolescents is a major challenge for professionals, educators, lay people and not least the adolescent her/himself (Howell, Keyes, & Passmore, 2013). It is also clear that mental health among young people in Sweden has not improved the last 20-30 years. There are however, contradictory reports whether mental health problems has increased. Researchers conclude in a systematic review from The Royal Swedish Academy of Science (2010) that children and adolescents' mental health is incompletely investigated.

The present thesis investigates young adolescents' self-reported mental health, alcohol experiences and personality profiles. The participants in the studies constitutes of a general sample from the Swedish multidisciplinary *Longitudinal Research program on Development In Adolescence* (LoRDIA). Young adolescents in general, as well as those with an early alcohol debut, are investigated through mental health profiles, which includes both mental well-being and mental health problems. The thesis also investigate personality dimensions in the same general sample of young adolescents one year later, as well as the psychometric properties of a personality inventory for children and adolescents known as the *Junior Temperament and Character Inventory* (JTCI). This was conducted through children's self-reports and caregivers' ratings. The agreeableness between the child's and caregiver's perspective on the child's personality was examined. Gender analyses (i.e. differentiation analyses between boys and girls) have been applied throughout the studies.

Mental Health among Adolescents

A psychopathological perspective (i.e. psychiatric diagnoses and mental health problems) is frequently used when researchers' and clinicians' are investigating mental health among children and adolescents. Screening for mental illness is often an applied method to draw conclusions on a persons' mental health status (Gillham, Reivich, & Shatté, 2002). This is because poor mental health sets future possibilities at risk with reduced school achievements, employment, social network and reduced possibilities to build one's own family due to mental health problems (Currie et al., 2012). However, good mental health is something *more* than just the absence of mental health problems (Gillham et al., 2002). The World Health Organization clearly states that "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2014).

Mental Well-Being

The field of positive psychology is concerned about the individuals' experiences both from the past, the present and the future (Seligman & Csikszentmihalyi, 2000). Mental well-being is a multidimensional concept within this field which can be defined both from a *subjective* (Diener, 1984; Pavot & Diener, 2008), *psychological* (Ryff, 1989, 2014; Ryff & Keyes, 1995) and *social* (Keyes, 1998) perspective. The conceptualization of mental well-being in the present thesis has been taken both from research on satisfaction with life (subjective well-being) and purpose in life (psychological well-being). Both of the previously mentioned constructs connect to a broader concept of *flourishing* which includes high levels on all three well-being dimensions (Keyes, 2002, 2006, 2013; Keyes & Annas, 2009). The opposite of flourishing is *languishing*, which is defined as the feeling of time and life waste as well as thoughts of life purposeless. Findings have shown that the risk of developing a mental illness is six times higher for adults in a languishing state of mind (Keyes, 2002). Further studies also suggest that that anything except flourishing in adolescents and adults is associated with greater burden both to self and society (Keyes, 2013; Keyes & Annas, 2009). Subjective well-being (*hedonia*) and psychological well-being (*eu-*

daimonia) must be collected parallel if we want to measure the *Optimal Well-being* (Keyes, 2007). It is also argued that positive feelings automatically will be present if one experience psychological well-being (Ryff & Singer, 2008). The feeling of meaning and purpose is connected to mental well-being (Ryff, 1989, 2014; Ryff & Keyes, 1995). The experience of meaning in life is central to the psychological well-being (Steger, Frazier, Oishi, & Kaler, 2006; Steger, Oishi, & Kashdan, 2009). To *search* for meaning in adolescence can be a sign of personal growth and high levels of meaning can counterbalance the effect of low levels of subjective well-being and presence of negative affect (Steger et al., 2009).

High prevalence of mental well-being have been reported from studies among Swedish young people (Berlin, Modin, Gustafsson, Hjern, & Bergström, 2012; Petersen et al., 2010). Results from the World Health Organization in Europe also conclude that a majority of young people in western countries, especially boys (11 and 15 years), are satisfied with life (Currie et al., 2012). Girls also report life satisfaction, but typically with significantly lower levels at age 15 compared to boys (Currie et al., 2012; Moksnes & Espnes, 2013). Findings suggest that self-reported life satisfaction among girls decline between age cohorts consisting of 11 and 15 year olds (Currie et al., 2012).

Mental Health Problems

Mental health problems are in this thesis defined as emotional and behavioral problems, experienced by the individual, which may impact relations and/or the everyday functioning in life (A. Goodman & Goodman, 2009; A. Goodman, Lamping, & Ploubidis, 2010). It is a qualitative concept related to both subjective and objective evaluations.

However, differences in time perspective, informants (i.e. child or caregiver) as well as study samples and measures, make it difficult to draw joint conclusions on international trends concerning mental health problems among youth in western countries (Petersen et al., 2010). Although studies report high prevalence of mental well-being, studies which specifically have investigated mental health problems have showed that, especially self-reported anxiety and depression have increased

among Swedish children and adolescents since the 1980s (Heimersson et al., 2013; Salmi, Berlin, Björkenstam, & Ringbäck Weitoft, 2013). Some studies report increased internalized problems and total amount of problems, especially among young girls, whereas results concerning externalizing problems are more ambiguous (Petersen et al., 2010).

It seems like self-reported symptoms on anxiety and depression has increased, but we know too little about the causes of this escalation. One suggestion is that increased self-reported mental health problems is due to excessive demands on mental well-being in an extremely individualistic society, and a decreased tolerance towards different psychological symptoms. Perfect health has become an internalized claim among youths in Sweden (and possibly among adults as well). Disappointments do potentially lead to stress and mental overload (Lindblad & Lindgren, 2010).

Data from the National Ambulatory Medical Care Survey in the U.S. conclude that there has been an expansion in mental health care to children and adolescents in office-based medical practice the last years and the use of mental health care have increased more rapidly among young people than among adults (Olfson, Blanco, Wang, Laje, & Correll, 2014). Although mental health problems seem to have increased, the level of serious psychiatric cases (e.g. schizophrenia and bipolarity) among adolescents have not increased in Sweden or internationally (Bremberg, Hæggman, & Lager, 2006; Currie et al., 2012; Petersen et al., 2010). Though mental health problems are commonly occurring in adolescence, it is worth noticing that the majority of Swedish adolescents do not report severe mental health problems which need to be treated therapeutically (in or out patient psychiatric care) (Salmi et al., 2013).

Consistent gender differences in mental health problems have been found among adolescents, both in Sweden and internationally. Boys continue to report higher levels of externalizing (behavioral) problems and girls report more internalizing (emotional) problems (Berlin et al., 2012; Currie et al., 2012; Koskelainen, Sourander, & Vauras, 2001; Lundh, Wangby-Lundh, & Bjarehed, 2008; Ronning, Handegaard, Sourander, & Morch, 2004). Girls in their late teens report higher levels of internalized problems than boys at the same age and the proportion of teenage

girls with depressive symptoms has doubled, and in some cases three-doubled, in the Swedish society during the last 20-30 years (Bremberg et al., 2006; Salmi et al., 2013). The need for in-patient care due to depression and anxiety seems to have increased among 15-24 year olds, more among girls than boys and the proportion of girls and boys seeking out-patient psychiatric care for anxiety/depression has increased for both sexes (Petersen et al., 2010).

Despite aforementioned gender differences on mental health problems, it is important to note that the *total* amount of reported symptoms, externalizing and internalizing added together, usually do not differ for girls and boys in early adolescence (Berlin et al., 2012; Koskelainen et al., 2001; Lundh et al., 2008; Ronning et al., 2004). Targeting young peoples' health from a gender perspective may therefore have considerable potential to reduce gender health differences in adulthood (Currie et al., 2012).

To summary; knowledge about the *relationship* between mental health problems and mental well-being among young adolescents (12-13 years) is still needed. This is due to the fact that the most common way in research is to investigate these two dimensions separately, but the results are then often contradictory and difficult to draw conclusions from.

Two-Dimensional Model of Mental Health

The positive perspective on mental health has long been neglected in favor of psychopathological perspectives (Gillham et al., 2002; Seligman & Csikszentmihalyi, 2000). However, it is now emerging in the field of developmental psychology (Seligman & Csikszentmihalyi, 2000). Promotion of mental well-being can function as a resilience factor in the face of risk, i.e. presence of mental health problems and/or psychiatric diagnoses. Research on mental well-being therefore suggests that today's society should not only be concerned about mental health problems/psychiatric diagnoses (Keyes, 2007, 2013; Ryff, 1989, 2014).

Previous findings have proposed that mental health problems and mental well-being are functioning on two related, but different continua and both dimensions contribute to the complete understanding of a person's general mental health status

(Greenspoon & Saklofske, 2001; Keyes, 2005). See Figure 1 for an overview of the two dimensional model of mental health which consists of a scale for flourishing vs. languishing (i.e. the presence or absence of emotional, psychological and social well-being) as well as a scale for the presence or absence of mental health problems (Keyes, 2005).

Mental health problems among children and adolescents is never the less a relevant political and social issue, but much of the research on mental health in general and well-being in particular has been carried out on adult populations. In addition, the concept of well-being is mostly lacking when analyzing mental health among children and adolescents. Hence, studies on young populations are needed to evaluate the two-dimensional model across a broader, and younger, age sample (Proctor, Linley, & Maltby, 2008).

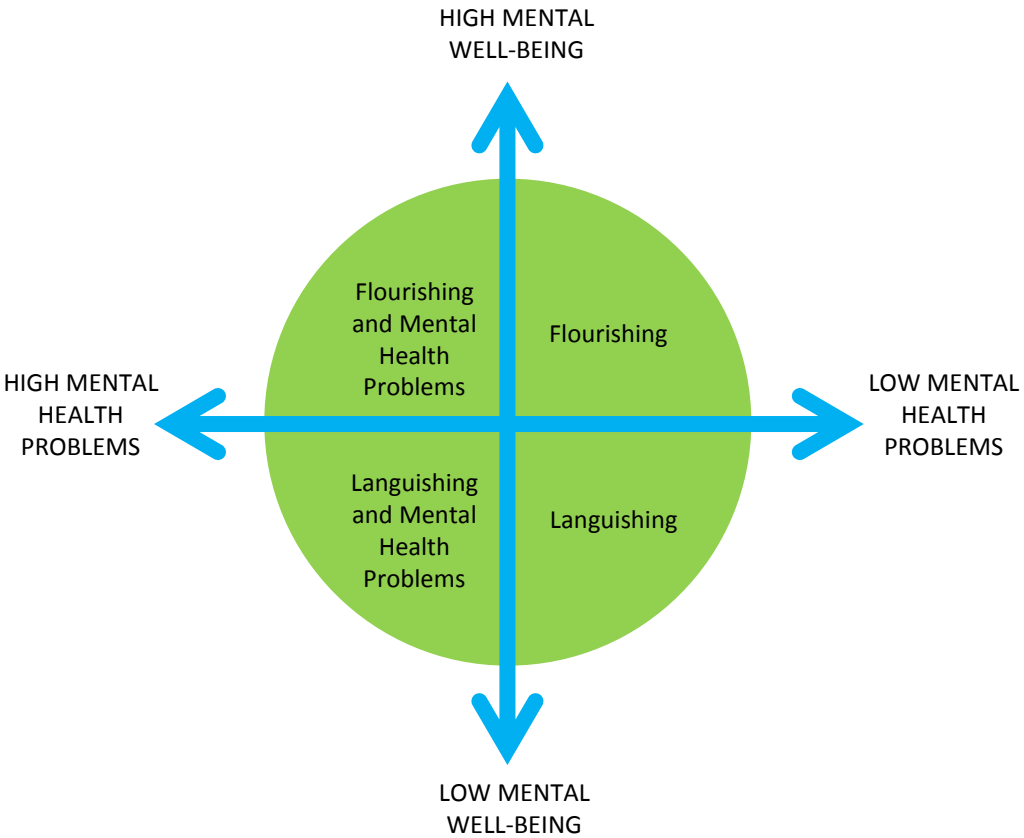

Figure 1. The Two-Dimensional Model of Mental Health

Alcohol Consumption in Adolescence

Alcohol consumption in Sweden seems to have declined collectively among 15-16 year olds, as well as 17-18 year olds between the years 2004-2012 (Englund, 2014; Norstrom & Svensson, 2014; Raninen, Livingston, & Leifman, 2014). The prevalence numbers 2015 are now historically low since the first measures in 1971. About 44 % of the girls and 40 % of the boys aged 15-16 had been drinking alcohol the last 12 months, comparable numbers for 17-18 year olds were 76 % and 73 % respectively (Gripe, 2015). Hence, slightly more girls than boys in both age cohorts can be classified as alcohol consumers. However, alcohol consumption in early adolescence is generally low. Approximately 20 % of both boys and girls in 9th grade report that they had tried alcohol (one glass or more) and 8 % report that they had been inebriated at age 13 or younger (Gripe, 2015). The occurrence of alcohol consumption in early adolescence (age 12-14) does usually not differ between boys and girls (Young et al., 2002). Gender differences have instead been found to emerge later on, where the prevalence of alcohol abuse/dependence are substantially higher among males (Young et al., 2002).

International studies have shown that Swedish adolescents drink alcohol relatively seldom compared to other European countries, but when they do, they drink alcohol to get inebriated to a greater extent. The "heavy episodic drinking" pattern among European adolescents has increased among girls from approximately 29 % in 1995 to 38 % in 2011. Same figures among boys are 41 % and 43 % respectively which imply that girls are adapting a drinking pattern more similar to boys (Hibell et al., 2012).

Sweden has a government alcohol monopoly called "Systembolaget" for sale of all beverages stronger than 3.5% by volume. Minimum purchase age at "Systembolaget" is 20 years, but 18 at restaurants and bars with proper permission. One of the goals of Swedish alcohol policies are to postpone the age of alcohol debut. This is both due to the fact that it is illegal for youths less than 18 years to consume alcohol, but also due to the many risk factors associated with an early debut and further developmental trajectories (biological, psychological and social).

Early Alcohol Debut

An early alcohol debut is one of the strongest predictors for developing an alcohol abuse/dependence and findings suggest that adolescents with co-occurring mental health problems are especially at risk (Kessler et al., 1996). Longitudinal studies are suggesting that advanced drinking habits *per se* at the age of 14 or 18 are neither necessary nor sufficient for developing heavy drinking or alcohol-related symptoms in adult age (Wennberg & Andersson, 2013; Wennberg, Andersson, & Bohman, 2000). However, these mentioned results could also be due to attrition in the sample from age 14 to 43, especially women with serious alcohol problems dropped out (Wennberg & Andersson, 2013). Aforementioned studies refer to adolescents' alcohol experiences approximately 30 years ago. Drinking trajectories from early adolescence to adulthood might therefore have changed from previously mentioned findings.

Alcohol use in adolescence is also related to risky sexual behavior and further mental health problems (Arata, Stafford, & Tims, 2003). In addition, finding have also shown that low levels of life satisfaction among children/adolescents aged 11-14 years are associated with early alcohol use (Proctor & Linley, 2014). In a recent Swedish study (Salmi et al., 2013), a high risk group among 15 year olds was identified; primarily including boys not thriving in life and with intense alcohol consumption (Salmi et al., 2013). A reciprocal relation between mental health problems and alcohol consumption in adolescence has been reported both from the Public Health Agency in Sweden, as well as internationally (Kessler et al., 1996; Malmgren, Ljungdahl, & Bremberg, 2008).

Mental health problems in combination with an early alcohol debut thus seem to increase further risk of developing alcohol abuse and dependence later on (Kessler et al., 1996). Findings have shown that high levels of depressive symptoms among girls are linked to alcohol problems initially and to a more destructive progress over time for boys (Marmorstein, 2009). Multiple, not single, adjustment problems, as well as the level of psychopathology in early adolescence will significantly increase the risk for alcohol abuse (Andersson, Bergman, & Magnusson, 1989). Retrospective results have shown that co-occurrence between mental health problems and substance abuse

problems usually starts between the age of 12 to 14 (Kessler et al., 1996). For example, alcohol use at a young age predicts depressive problems later in life and depressive problems in young age predict an increased usage of alcohol in adulthood (Malmgren et al., 2008).

Studies have found that externalizing problems during childhood are associated with substance use (tobacco, alcohol, cannabis and other illicit substances) at age 15-16 and early adulthood for both males and females (Steele, Forehand, Armistead, & Brody, 1995; Young et al., 2002). However, externalizing problem behavior as a child did not predict how often females had been inebriated aged 15-16 (Steele et al., 1995). On the contrary, higher scores on internalizing behavior problems as a child were related to less alcohol consumption in early adulthood among girls (Steele et al., 1995). The findings suggest that females may follow a different drinking trajectory than that of males.

Most research on alcohol consumption have investigated adolescents aged 15 years and older (Bauman & Phongsavan, 1999). Hence, there is a need for information and deeper understanding about alcohol experiences and alcohol habits in young adolescents, aged 15 and younger. There are however exceptions. One example is the work of Van Der Vorst, Vermulst, Meeus, Dekovic, and Engels (2009) which investigated alcohol consumption in early adolescence (from age 13 to 16), primarily focusing on alcohol drinking trajectories for boys and girls through early and middle adolescence. The study does not include mental health profiles but conclude that being a boy, having a close friend or a father who drinks heavily and permissive caregivers towards alcohol use increases the risk of heavy drinking in adolescence. Willoughby and Fortner (2015) investigated the co-occurrence of depressive symptoms and alcohol consumption from age 14 to 17. The findings showed that 10-14 % of the adolescents had high co-occurrence of depressive symptoms and alcohol use; 14-15 % reported high prevalence of depressive symptoms only and 32-37 % reported alcohol at risk use only.

Even though above-mentioned studies have found evidence for relationships between alcohol and mental health variables among adolescents, there is still a need for studies which *combine* information on mental well-being, mental health problems,

gender and alcohol initiation among the youngest adolescents. Especially, investigating how these patterns of variables are related to each other in such a young population as girls and boys aged 12-13 years.

Personality

Personality refers, in contrast to mental health, to a more normative and relatively stable set of behaviors (including thinking, perceiving, and feeling) (Caspi, Roberts, & Shiner, 2005). The origin of the word comes from the Latin word *persona,* which was the name of the facial mask used by actors in theaters in ancient Greece. Nowadays, *personality* is referred to as the opposite of a mask and instead to the *true person* (Karterud, Wihlberg, & Urnes, 2014). The concept of personality can be defined in multiple ways and a range of personality models are able in the psychological literature. Many definitions focus on individual differences. Development studies of personality have suggested that personality is quite consistent over time and apparent in early childhood, but not stable until early adulthood, although continuing development across the life course (Brändström, Sigvardsson, Nylander, & Richter, 2008; Caspi et al., 2005). Personality traits have shown to be useful predictors of functioning across diverse situations in a person's life (Caspi et al., 2005).

The present thesis uses a bio-psycho-social model of personality (Cloninger, Švrakić, & Przybeck, 1993) which is operationalized through the Temperament and Character Inventory (TCI) (Cloninger, Przybeck, Švrakić, & Richard, 1994). The definition of personality in this model is influenced by Allport (1961) and defined as the dynamic organization of psychobiological systems within the individual by which the person both shapes and adapts uniquely to an ever-changing internal and external environment (Cloninger et al., 1993). The bio-psycho-social model define personality as dynamic, non-linear and separate between heredity (temperament) and social learned (character) dimensions of personality (Cloninger et al., 1993).

Early temperament traits i.e. basic reactive behaviors, with a presumed biological basis, have long been in focus of child psychologists. Practitioners and researchers working with adults have instead focused on more sophisticated personality traits. Contemporary developmental science of personality now concludes that "[…] childhood temperament should be conceptualized with an eye toward adult personality structure, and adult personality should be understood in light of its childhood antecedents" (Caspi et al., 2005, p. 454).

Adolescent personality plays an important role concerning mental health and positive functioning. Mental health has been described as: "A state of well-being in which a person realizes and uses his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to his or her community." (WHO, 2014). This definition is very similar to the description of the character dimensions of Self-Directedness, Cooperativeness, and Self-Transcendence, all of which are included in Cloninger's personality model (Cloninger et al., 1993).

The Temperament and Character Inventory

The *Temperament and Character Inventory* (TCI) is a wide spread inventory for assessment of personality dimensions. The inventory is founded on Cloninger's seven dimensional bio-psycho-social model of personality (Cloninger et al., 1994; Cloninger et al., 1993). The bio-psycho-social model of personality, built on both temperament and character dimensions, was developed in the beginning of the 90s (Cloninger et al., 1993). The aim was first to create a clinical personality questionnaire to capture the genetic foundations of a person's personality. Two previously defined personality dimensions: 1) introversion vs. extroversion, and 2) neuroticism/emotional instability vs. emotional stability were complemented by an additional dimension on how the individual responded to pain and pleasure; Harm Avoidance vs. Novelty Seeking.

Today the inventory consists of four temperament dimensions and three dimensions of character to describe the underlying structure of personality. However, the inventory was originally labelled the *Tridimensional Personality Questionnaire* (TPQ) which was based on genetic predispositions (i.e. a bio-psychological model) only. The TPQ was created to assess temperament traits and included three scales: Novelty Seeking, Harm Avoidance and Reward Dependence (Cloninger, Przybeck, & Švrakić, 1991). Unfortunately, the questionnaire could not help clinicians to differentiate individuals with personality disorders or social problems from well-functioning individuals with an extreme temperament profile. As a result, the TPQ underwent revisions and was extended with questions measuring character dimen-

sions and one additional temperament dimension; Persistence. This "new" subscale was initially part of Reward Dependence, but factor analyses showed evidence for a separate construct which motivated further modification of the model (Cloninger et al., 1993).

Temperament dimensions in the bio-psycho-social model of personality have their origin in the individual's biological (i.e. genetic) disposition for activation level, endurance and inhibition capability. Hence, the temperament is linked to the person's automatic response on stimuli (Cloninger et al., 1993). The temperament scales in TCI are 1) Novelty-seeking – activity level, impulsivity, need for exploration, 2) Harm Avoidance – emotionality, level of anxiety, fear and lack of trust for the unknown, 3) Reward dependence – reward seeking behavior, the level of attachment and social dependence, and last 4) Persistence – endurance in problem solving, commitment to tasks and goals despite frustration and fatigue (Cloninger et al., 1994). Support for the personality model consisting of four independent, but inter-correlated temperament dimensions have been found in recent meta-analysis by Miettunen, Lauronen, Kantojarvi, Veijola, and Joukamaa (2008). The results showed a negative correlation with medium effect between Novelty Seeking and Harm Avoidance (Miettunen et al., 2008) which imply that these two dimensions are each other's antagonists.

Character dimensions are in the model best described as the person's thoughts, feelings and behaviors towards one-self, other people and his/her life situation. All these experiences and capabilities are said to develop epigenetically through complex social learning processes during childhood (Cloninger et al., 1993). The character scales in TCI are 1) Self-Directedness – which quantity the individual's ability to steer and maneuver behavior, self-acceptance and self-efficacy, 2) Cooperativeness – ability to cooperate, accept and help others, and 3) Self-Transcendence – level of spiritualism and ability to experience a larger universal perspective (Cloninger et al., 1994). Conclusions on a person's maturity level can be drawn from the first two character dimensions; Self-Directedness and Cooperativeness. High scores on these two character dimensions imply a *mature* personality and the capacity to regulate

behavior despite a challenging temperament (Cloninger et al., 1994; Cloninger et al., 1993).

TCI can enhance the understanding on individual pre-dispositions in treatment and prevention of relapse. In psychotherapy, within-individual change is in focus when the patient is encouraged to develop character abilities, understand inner processes and behavior patterns through problem insight (Cloninger & Cloninger, 2011). The inventory is theoretically founded in biological, psychological and sociological perspectives and developed through clinical experiences. Psychological traits in personality are assumed to mature when individual's genetic pre-disposition interact with the surrounding environment (Cloninger et al., 1994).

Previous research on TCI has shown that spouses are able to rate their partner's personality with an average correlation of 0.58. However, spouses have the tendency to rate their partner's character (0.53) slightly less accurate than temperament dimensions (0.64). The findings gave little support for the idea that one member of the spouse pair were a better rater than the other.

Personality Assessment in Childhood and Adolescence

The *Junior Temperament and Character Inventory* (JTCI) is an adapted version of TCI and made for children and adolescents (Luby, Svrakic, McCallum, Przybeck, & Cloninger, 1999). The JTCI has two versions to capture the child's personality structure; one self-report version for the child/adolescent to fill in and one caregiver version by which the caregiver (i.e. parent or parental figure) rate the child's temperament and character. Research on JTCI are increasing, and the instrument has been investigated psychometrically among children and adolescents in clinical samples (Cho et al., 2008; Cho et al., 2009; Copeland, Landry, Stanger, & Hudziak, 2004; Hemphälä, Gustavsson, & Tengström, 2012), general samples (Andriola et al., 2012; Asch et al., 2009; Luby et al., 1999; Lyoo et al., 2004; Moreira et al., 2012; Vangberg et al., 2013), and in twin samples (Isen, Baker, Raine, & Bezdjian, 2009; Kerekes et al., 2010). However, only one Korean study has investigated the self-report version and caregiver version (JTCI 108 items) parallel in a general sample (Lyoo et al., 2004). The results confirmed that JTCI had satisfactory psychometric

properties for use in child and adolescent populations. The children's self-reports compared to the caregiver ratings showed that children reported higher scores on Novelty Seeking, Reward Dependence, Persistence and Self-Transcendence. No substantial differences on Harm Avoidance, Self-Directedness and Cooperativeness were found between the children's and caregivers' perspectives (Lyoo et al., 2004). The Korean study concluded that children had a more "assertive" view on themselves compared to their parents.

Originally in Cloninger's personality model, it was hypothesized that temperament dimensions were heritable and stable and the character were expected to mature through socialization (Cloninger et al., 1993). Both temperament and character domains were nevertheless seen as part of a repetitive epigenetic process in which each interacts with the other in motivating behavior (Cloninger et al., 1993). Later, findings from twin studies with children aged 9 to 10 years (Luby et al., 1999) and adults (Gillespie, Cloninger, Heath, & Martin, 2003) have shown that both temperament and character dimensions can be heritable. Moreover, the results also showed that a shared environment did not contribute significantly to comparable character development in adults (Gillespie et al., 2003).

The JTCI/TCI is a helpful instrument to enhance understanding and to describe development and change of personality over time, both *within-individual* oriented, as in psychotherapy (Cloninger & Cloninger, 2011), and *between-individual* oriented, as in age, gender and norm comparisons (Cloninger et al., 1994). The JTCI can also function as a screening instrument to identify children and adolescents at risk of developing mental health problems, personality disorders or other problem behaviors.

Personality and Mental Health among Adolescents

Temperament and character dimensions are associated with both positive (e.g. prosocial behavior and well-being) and negative aspects (e.g. attention-deficit hyperactivity disorder and emotional problems) of mental health among adolescents (Andriola et al., 2012; Cho et al., 2008; Cho et al., 2009; Garcia, 2011; Garcia, Kerekes, Andersson Arnten, & Archer, 2012; Garcia & Moradi, 2011). Character dimensions also add valuable information about the mature or immature personality

and possible personality disorder (Cloninger et al., 1993). Low scores on the character dimensions have been linked to symptoms involved in personality disorders, and if so, the temperament profile is said to discriminate between the different types of personality disorders (Svrakic et al., 2002).

Clinical findings recommend TCI diagnostic process of personality disorders among adult patients (Richter & Brandstrom, 2009). The temperament and character dimensions in adolescence can also provide predictive information regarding later development of alcohol and substance abuse disorders (Wennberg & Bohman, 2002). Namely, personality variables such as impulsivity, Novelty Seeking and low level of Harm Avoidance at age 11 have been identified as early individual risk factors of alcohol abuse at age 27 (Cloninger, Sigvardsson, & Bohman, 1988). Gender differences on group level have been found on the temperament dimensions; Novelty Seeking and Harm Avoidance. Girls reporting higher levels on Harm Avoidance whereas boys report higher levels on the Novelty Seeking scale (Andriola et al., 2012). Findings from the same study also showed associations between Harm Avoidance and emotional problems.

Personality assessment with JTCI may facilitate the identification of adolescents at risk of developing personality disorder and/or mental health problems. New Swedish norms of the TCI were established in 2008 (Brändström et al.) and the importance of separate gender and age specific norms was urged. The study also concluded that the TCI is poorly suited for children and adolescents under the age of 17. Instead, the JTCI (Luby et al., 1999) was recommended. However, norms and psychometric validation of the Swedish self-report and caregiver version of JTCI is still lacking for young adolescents.

MAIN AIM

The main aim of the present licentiate thesis was to investigate young adolescents' self-reported mental health, alcohol experiences and personality. Gender perspectives throughout the thesis were also intended. The participants in both studies constitutes of a general population recruited through the Swedish multidisciplinary *Longitudinal Research program on Development In Adolescence* (LoRDIA).

In **Study I**, the relation between mental health problems (i.e. patterns of self-reported internalizing and externalizing problems), mental well-being and alcohol experience was investigated among Swedish girls and boys aged 12-13 years. Using a person-oriented approach, this study explored the presence of specific configurations that were more frequent ("types") or less frequent ("antitypes") than expected by chance. Patterns of variables *within* the individual are analyzed instead of characteristics on a group level (Bergman & Lundh, 2015). Based on previous research, four configurations of mental well-being and mental health problems were hypothesized to come out as more frequent than expected by chance in the general sample: 1) girls with high well-being and no internalizing or externalizing problems; 2) boys with high well-being and no internalizing or externalizing problems; 3) girls with low well-being, internalizing problems but no externalizing problems; and 4) boys with high well-being, no internalizing problems, but with an externalizing problem. Previous findings have indicated a higher prevalence of mental health problems and lower well-being among adolescents with an early debut of alcohol consumption. Therefore, it was also hypothesized that girls and boys with a low degree of mental well-being and presence of internalizing and/or externalizing problems would come out as more frequent configurations ("types").

The aim of **Study II** was three-fold: 1) establish norms for the Swedish self-reported version and caregiver version of the Junior Temperament and Character Inventory (JTCI) among adolescents aged 12-14 years; 2) investigate the psychometric properties of the Swedish JTCI, both the self-report version and caregiver version; 3) investigate the congruence on the child's self-report and caregiver-rating of the JTCI. Questions such as if the caregivers can rate their child's personality and how

well the child and caregivers' perspectives overlap were sought to be answered. Gender analyses (i.e. differentiation analyses between boys and girls) were conducted throughout the study. It was hypothesized that children's self-reports and their caregiver's rating would overlap moderately. Gender analyses have not been conducted on the congruence between self-reports and caregiver ratings previously. Hence, no hypotheses were articulated regarding potential differences between caregivers' rating of sons and caregivers' rating of daughters.

SUMMARY OF THE STUDIES

Brief Description of the Research Program

The two studies included in this licentiate thesis are a part of the ongoing prospective longitudinal program, *Longitudinal Research on Development In Adolescence* (LoRDIA). The program's overall aim is to study the transitions from childhood to adolescence in relation to peer and family factors, mental health, and personality factors and to follow the intertwined process between risk and resilience factors connected to alcohol and drug abuse. Data are collected from the general population, both from the adolescents, their caregivers and their teachers through repeated surveys.

The program follows adolescents from age 12 to 17 years from four municipalities with 9,000-36,000 residents in the south-west and south-centered parts of Sweden. Data collections started year 2013 with two cohorts in 6th and 7th grade and continued with annual surveys up to 8th and 9th grade. The final data collection will end with a diagnostic interview for discovering psychiatric disorders and/or substance use disorders when the adolescents are at age 17.

A total number of 2,021 adolescents were invited to participate in the program in 2013 (Figure 2). Out of these individuals, 1,520 (75 %) questionnaires were collected at the first data collection wave. External omission at baseline was due to absence from school (9 %) and/or declined consents from caregivers (10 %) or the child (6 %). The total number of invited participants was 2,127 for the second data collection wave in 2014 (Figure 3). The additional number of invited participants was due to immigration to the municipalities and the participating schools. General omission analyses have showed that the study sample in LoRDIA is representative for the total amount of invited participants regarding demography (gender and ethnicity) and school performance (grades and attendance).

The surveys were administrated in classroom settings for the students in the first three collection waves. In addition, caregivers received a survey by regular mail during wave one and two and the teachers participated with short reports on the pupils' school function each wave.

The research program and data collection details for the first data collection were approved by the Region Research Ethics Board in Gothenburg, Sweden (No. 362-13; 2013-09-25) and with approval confirmed for the second data collection wave (2014-05-20).

This licentiate thesis explores the same young adolescents concerning mental health and personality. In Study I, participants were in 6th and 7th grade (approximately 12-13 years old) and in Study II, they were in 7th and 8th grade (approximately 13-14 years old).

Study I

Method

Participants

For the present study, participants (i.e. children aged 12-13) were recruited from the first data collection wave (Figure 2). Children following a school plan for intellectually disabled as well as those who filled out the simplified version of the questionnaire due to reduced reading and/or concentration capabilities were excluded from the study. Thus, the remaining respondents for this study were 1383 individuals, evenly distributed between the genders and across 6th and 7th grade. Mean ages (standard deviations) were 12.6 years (0.64), equal for both sexes, and mean age 12.1 years (0.4) for 6th-graders and 13.1 (0.4) for 7th-graders.

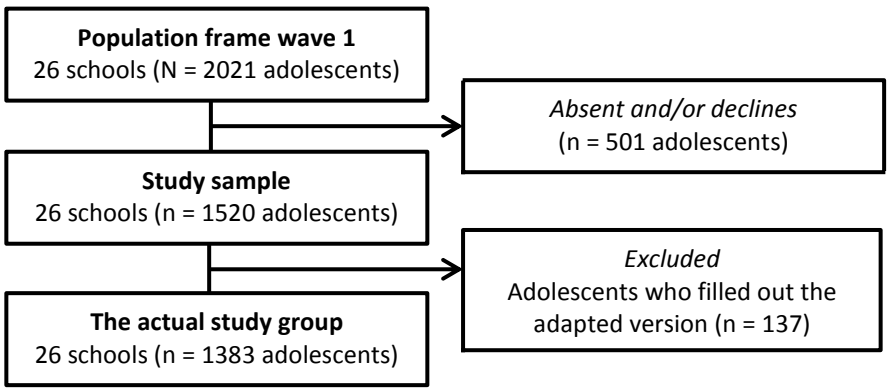

Figure 2. Recruitment Flow Chart for Study I

Procedure

Data for the first wave were collected in 2013 (from November ending in March 2014). All caregivers and children received an information letter that briefly explained the purpose of the study. A passive consent was requested from the caregiv-

ers (i.e. not actively responding "no" when asked to let their child participate in the study), as well as a written consent from the child on the day of the survey. It was emphasized that participation was voluntary, that collected information would remain confidential and that participants were free to withdraw from the study at any time.

The survey was group administered at schools in classrooms and absent students got their survey posted to their home by regular mail. Each questionnaire was introduced by a member in the research team and filled out individually by the student using paper and pen. The students answered a structured questionnaire assessing background variables as well as relations to family and peers, school adjustment and teachers, mental health and psychological problems. At least one member of the research team was monitoring the students and available for answering questions. Approximate time for completing the survey was 1.5-2h including a short break in the middle.

Measures

Mental health problems

The Swedish self-report version of Strengths and Difficulties Questionnaire (SDQ-S) is a broadly used and validated instrument with the aim to detect emotional and behavioral problems (R. Goodman, 1997; R. Goodman, Meltzer, & Bailey, 1998). The questionnaire consists of 25 items which constitutes five subscales; all but the prosocial scale were used for this study.

For this study, only the SDQ difficulties subscales were used and grouped into two overarching measures which are preferably used in low risk community samples (A. Goodman & Goodman, 2009; A. Goodman et al., 2010). The measures are: internalizing problems and externalizing problems. Previous studies have used a 90th percentile cut-off point for the five-factor model to define high risk groups (R. Goodman et al., 1998; Koskelainen et al., 2001; Lundh et al., 2008; Ronning et al., 2004; Van Roy, Grøholt, Heyerdahl, & Clench-Aas, 2006; Van Roy, Veenstra, & Clench-Aas, 2008). For this study, cut-offs indicating externalizing and/or internaliz-

ing *problem styles* were set at one standard deviation above mean score (i.e. 9 out of 20 for externalizing problems and 8 out of 20 for internalizing problems).

Mental well-being

A mental well-being scale was created by using two questions concerning satisfaction with life and purpose and meaning in life (Berlin et al., 2012). For the purpose of the present study, we reverse-coded and summed each participant's responses. The mental well-being score range from 2-8 and the consistency of the scale was controlled by a split-half analysis with an obtained alpha value of 0.77 indicating satisfactory internal reliability. The cut-off indicating high mental well-being was sat at 6 or more out of maximum 8 points.

Alcohol experiences

Two questions about alcohol experiences (Englund, 2014) were included. First, *"How old were you when you (if ever) drank at least one glass of alcohol?"* and second, *"How old were you when you (if ever) were drunk due to alcohol?"*. The questions were coded "Yes, have tried alcohol (at least one glass)" and/or "Yes, have been drunk" if they answered "11 years or younger", "12 years", "13 years" or "14 years". Otherwise, the items were coded "Never tried alcohol" or "Never been inebriated" respectively if they answered "never".

Statistical Analyses

Independent t-tests using SPSS (version 22.0, 2013) were conducted to compare the mean between girls and boys on self-rated SDQ - total difficulties score, SDQ - externalizing and internalizing scores and mental well-being scores. For Cohen's *d* an effect size of 0.2 to 0.3 can be interpreted as a "small" effect, around 0.5 a "medium" effect and 0.8 to infinity, a "large" effect (Cohen, 1988). Two Configural Frequency Analysis (von Eye, 2001; von Eye & Wood, 1996) were conducted in SLEIPNER vs. 1.0 (Bergman & El-Khouri, 1995).

Results and Discussion

The results showed, as predicted, that a majority of the general sample of young adolescents had no internalizing or externalizing problems, and reported a high degree of mental well-being. These configurations came out as more frequent "types" than expected by chance (girls $p = 0.001$ and boys $p = 0.015$). The results were in line with other studies on adolescents' mental health (Currie et al., 2012; Keyes, 2006) where *flourishing* (high well-being and low mental illness) was the most prevalent "diagnosis" among youth ages 12-14 (Keyes, 2006).

However, girls with low well-being and internalizing problems were also more frequent than expected by chance ($p = 0.000$). Notable, this configuration was four times larger than what we could expect from the prevalence numbers in the sample, the same pattern was less frequent among boys. These results support previous findings on mental health problems among girls, showing that adolescent girls report a higher degree of internalizing problems as well as lower life-satisfaction than boys at the same age (Moksnes & Espnes, 2013). In addition, our results reveal that this health-profile is more common than expected even among such young adolescents as 12-13 year olds.

The results also support the prediction that more boys than girls were expected to report a pattern of externalizing problems combined with high well-being. Girls with high well-being and externalizing problems were on the other hand only half as common as expected by chance in the material. Both girls and boys reporting high well-being combined with internalizing problems were "antitypes" in the general sample, i.e. less frequent than expected by chance. These results suggest that having only an externalizing problem style (more common among boys) might be more robust towards the risk of low well-being than an internalizing problem style (more common among girls).

The findings also showed that a majority of young adolescents in our sample were alcohol naïve and had not tried alcohol. The prevalence numbers of alcohol use (tried alcohol or been inebriated) were less than previously reported epidemiological numbers (Young et al., 2002). Few 12-13 year olds had been inebriated (3.1 %) or tried alcohol (12.4 %) in our sample population. These numbers are lower compared

to retrospective reports from 9th graders, where approximately 8 % of both boys and girls in 9th grade report and that they had been inebriated and 20 % report that they had tried alcohol (one glass or more) at the age 13 or younger (Gripe, 2015). There are different interpretations of these results; adolescents in LoRDIA might underreport their alcohol experiences or elder adolescents might exaggerate retrospectively. It is also possible that many young adolescents in LoRDIA might have their alcohol debut after the data collection (i.e. between the age of 12 and up to the year they turn 14). Moreover, and in line with previous mentioned study by Young et al. (2002), a higher amount of boys than girls had tried alcohol (7.5 % and 4.9 % respectively). Early alcohol experiences can potentially be understood as part of an externalizing problem style, more common among boys than girls at this age (Berlin et al., 2012; Currie et al., 2012; Koskelainen et al., 2001; Lundh et al., 2008; Ronning et al., 2004). However, 28 % of the girls compared to 13 % among the boys among those with early alcohol experiences had been inebriated.

Health-profiles among the adolescents who had tried alcohol showed that the majority reported a high level of mental well-being (114 cases out of 150, 76 %). However, the proportion of high well-being differed between the sexes; 58 % among the girls and 86 % among the boys. Three configurations came out as significant "types" in this alcohol subsample. The first were girls with low mental well-being, internalizing problems but no externalizing problems ($p = 0.009$). The same configuration for boys was not represented in the sample. Second, girls with low mental well-being with both internalizing and co-occurring externalizing problems ($p = 0.001$) were more frequent than expected. Last, boys with high mental well-being with neither internalizing problems nor externalizing problems ($p = 0.007$) came out as a "type" group, more frequent in the sample than expected by chance. In sum, the subgroup was, contrary to our prediction, overrepresented by boys reporting high mental well-being and no co-occurring internalizing or externalizing problems. Still, girls reporting low well-being and internalizing problems combined with or without co-occurring externalizing problems were more frequent than expected.

Gender differences on "type" configurations were indeed present in this subgroup and the majority of boys who had tried alcohol did not report internalizing or exter-

nalizing symptoms as girls did. These findings suggest that girls might use alcohol for other reasons and in different settings than boys. Alcohol use among boys could also be a part of young boys experimenting with their masculinities and/or a part of a norm breaking/delinquent behavior setting more easily accessible for boys than girls. Our interpretation is that girls with early alcohol experiences represents of a more vulnerable group than boys who have tried alcohol at the same age.

Study II

Method

Participants

For this study, adolescents (aged 12-14) and their caregivers whom answered the Junior Temperament and Character Inventory (JTCI) were included from the second data collection wave in LoRDIA.

The originally amount of respondents were 1449 children (see Figure 3). However, 403 participants were excluded from the study due to missing information about the child's age and gender and/or more than 5 % missing items and incorrect answers on validity items in the JTCI. Thus, the actual study group included 1046 adolescents (girls: n= 582 [56 %]; boys: n= 464 [44 %]), mean ages (standard deviations) for girls were 13.40 years (0.603) and 13.32 (0.601) for boys. The sample also included 654 ratings from caregiver (originally the caregivers were 709, but due to the above mentioned exclusion criteria, 56 of them were excluded). Further, 481 adolescents (girls: n= 275 [57 %]; boys: n= 206 [43 %]), mean ages (standard deviations) were 13.38 years (0.612) for girls and 13.35 (0.579) for boys) and 481 caregivers with an overlapping rating were selected for the comparison analyses (313 mothers, 63 fathers, 87 joint caregivers, one "other caregiver" and last, 17 unclassified caregivers).

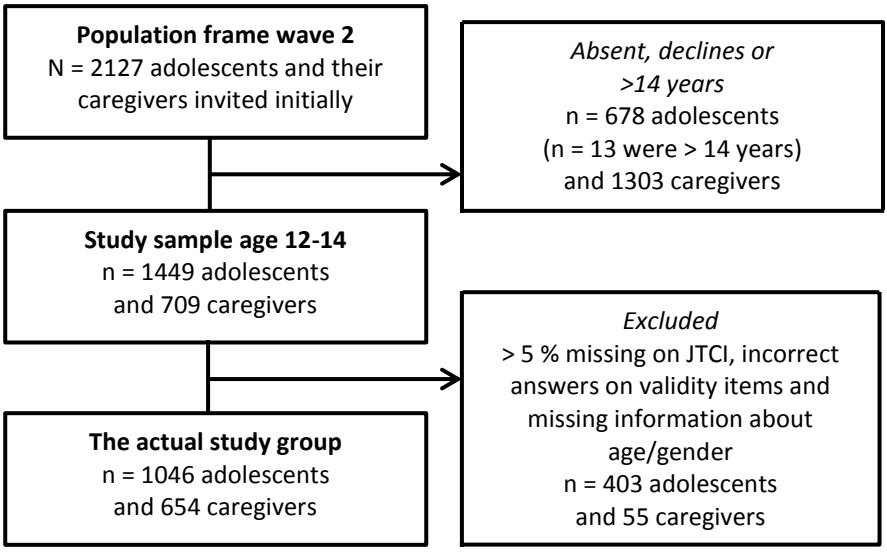

Figure 3. Recruitment Flow Chart for Study II

Procedure

Data were collected over a four week period in October-November 2014 and followed the same procedure as described for Study I. Approximate time for completing the survey was 1-1.5h including a short break in the middle.

The caregivers also received a paper survey (including the personality scale, see below) by regular mail parallel to the data collection in their children's schools. Caregivers could choose to give a joint answer on their child or fill in the questionnaire separately. The questionnaire included questions about their child's psychological strengths and difficulties as well as questions about their child's personality. An active, written consent was requested for their participation at the first data collection wave in LoRDIA, but was not requested again since all questions in the second data collection wave were about their child, not themselves.

Junior Temperament and Character Inventory (JTCI)

Both the self-reported version and the caregiver version of the Junior Temperament and Character Inventory (JTCI) consist of 108 "true" or "false" items. The two versions are almost identical except for the modification of the pronouns. The Swedish version of JTCI consists of the following number of items; Novelty Seeking = 18, Harm Avoidance = 22, Reward Dependence = 9, Persistence = 6, Self-Directedness = 20, Cooperativeness = 20, and Self-Transcendence = 10.

Statistical Analyses

The internal consistency, factor correlations and convergent validity for the JTCI (i.e. the self-reported version and the caregiver-rating version) were analyzed. Descriptives on temperament and character dimensions were presented in terms of means and standard deviations. Age and gender effects were analyzed by multivariate correlation analyses. The internal consistency of JTCI dimensions was evaluated using Cronbach's alpha coefficients. Paired-sample t-tests were conducted to compare the child self-report and the caregiver rating on JTCI. All analyses were conducted with SPSS (version 22.0, 2013).

Results and Discussion

This study provides norms for the Swedish JTCI child self-report version and the caregiver rating version for adolescents aged 12-14 years. The JTCI dimensions in both versions showed poor to good internal consistency with Cronbach's alphas from 0.52 (Reward Dependence) to 0.82 (Harm Avoidance). Persistence in the self-report version was, however, unacceptable ($\alpha = 0.28$). The results were similar to a Korean study which also reported the lowest Cronbach's alpha value for the Persistence dimension (Lyoo et al., 2004). The low internal consistency on Persistence was potentially due to the low number of items included (i.e. 6 for Persistence compared with 22 for Harm Avoidance). The questions concerning Persistence might also be

difficult for adolescents aged 12-14 years in Sweden to understand, although the internal consistency was questionable in the caregiver version as well.

The multivariate analyses on age and gender effects showed that boys had significantly higher scores in Novelty Seeking than girls and girls reported higher scores in Harm Avoidance, Reward Dependence and Cooperativeness. These results were consistent with findings in the adult version (Brändström, Richter, & Przybeck, 2001). Consistent gender differences have also been reported on mental health problems, with boys having higher degree of externalizing (hyperactivity, aggression) problems and girls having more internalizing (anxiety, depression) problems (Berlin et al., 2012; Currie et al., 2012; Koskelainen et al., 2001; Lundh et al., 2008; Ronning et al., 2004). The analyses also showed an interaction effect, regarding gender and age on Novelty Seeking, which indicate higher levels of Novelty Seeking behavior by age, especially for girls. These results highlight the importance of age- and gender specific norms of the JTCI, as recommended previously (Brändström et al., 2008).

Correlations between the seven dimensions in JTCI were very weak to moderate with Pearson correlation coefficients ranging from 0.00 to -0.51. However, moderately strong negative correlations between temperament – Harm avoidance and character – Self-Directedness, indicate that these dimensions of personality are intertwined and might be difficult to discriminate as two separate constructs, both for the child and the caregiver. Similar results have been reported recently by (Vangberg et al., 2013) in a Norwegian sample. The moderately positive relations between Self-Directedness and Persistence, Self-Directedness and Cooperativeness also indicate that these constructs are related. Still, it was likely to find correlations between dimensions due to interactions of behavior in the development of personality over time. In fact, Self-Directedness and Cooperativeness correlates significantly, but at most moderate, to almost all the other temperament and character dimensions. The exception is Cooperativeness and Self-Transcendence which had zero correlation on both the child's self-report the caregiver rating. Congruent findings were reported in the Korean study (Lyoo et al., 2004).

Although the true origin of spirituality is said to begin in childhood and adolescence (Brändström et al., 2008), no other personality inventory measures the childhood spirituality with good reliability. Self-Transcendence does, however, not correlate substantially (zero to weak) with other dimensions in JTCI except for Harm Avoidance in both self-reports nor caregiver ratings. This implies that Self-Transcendence is well-differentiated from the other six dimensions in JTCI, thus adding a unique perspective on personality. Our results on the child's self-report also correspond well with Lyoo et al. (2004) on each of the dimensions but Harm Avoidance and Self-Transcendence which showed a stronger (but still weak) correlation among Swedish compared to Korean adolescents at the same age. These findings imply that adolescents with spiritual experiences/abilities statistically also report higher levels of anxiousness and emotional problems in Sweden. Approximately the same relation between Harm Avoidance and Self-Transcendence was found in the caregiver ratings and observed in other studies from Italy and Norway (Andriola et al., 2012; Vangberg et al., 2013). Association between Harm Avoidance and emotional problems, using the Strengths and difficulties questionnaire – SDQ (R. Goodman, 1997), have also been reported in convergent validity analyses previously (Andriola et al., 2012). Personality traits have shown to be useful predictors of functioning across diverse situations and mental health in a person's life (Andriola et al., 2012; Caspi et al., 2005; Vangberg et al., 2013). Thus, a combination of high Self-Transcendence and high Harm Avoidance might be interpreted as a risk profile regarding mental health problems.

Concordance between child self-report and caregiver ratings on the child's personality was modest, and similar to previous research on spouses (Brändström et al., 2008). Our findings displayed differences with very small to large effect sizes (d = *0*.17 – 0.99) between children's own report on temperament and character compared to caregiver's rating.

A general pattern emerged in the comparison analyses. Caregivers tended to overestimate their child's Self-Directedness (i.e. ability to maneuver behavior and having self-acceptance and self-efficacy) on one hand and underestimate the child's Harm Avoidance (i.e. anxiousness behavior and fear for the unknown) on the other.

These results are especially noticeable among girls (caregivers' rating of daughters). Caregivers also seem to underestimate their sons' ability on Persistence (i.e. endurance in problem solving, commitment to tasks and goals despite frustration and fatigue). The same dissonance between caregivers' and their daughters' estimation did not exist even though girls and boys reported similar mean scores on Persistence. The results also imply that caregivers rate their child as slightly more active, impulsive, and in need for exploration than the child him/her self (Novelty Seeking). Caregivers also rate their child as more reward seeking, with higher level of attachment and social dependence than the child (Reward Dependence). The children were rated with higher ability (although with a small effect) to cooperate, accept and help others (Cooperativeness) and significantly lower level of spiritualism and ability to experience a larger universal perspective (Self-Transcendence). This latter result was surprising and even though the mean scores on Self-Transcendence are relatively low, large effect sizes were found on the differences between child and caregiver rating. These results might indicate that caregivers lack the full insight of their child's spiritual life.

The previously mentioned findings agree with the literature in which a relatively low congruence between children's and caregivers' reports on the child's mental health problems (worriedness, anxiety and depressive symptoms) have been found (Duhig, Renk, Epstein, & Phares, 2000; Myers & Winters, 2002; Waaktaar, Borge, Christie, & Torgersen, 2005). Hence, self-reports from the child is therefore suggested to complement the caregivers information (Alfredsson, 2015).

GENERAL DISCUSSION

The main aim of this licentiate thesis was to investigate young adolescents' mental health, alcohol experiences and personality profiles. The sample in both studies constitutes of a general population recruited through the Swedish multidisciplinary *Longitudinal Research program on Development In Adolescence* (LoRDIA).

The results showed that young adolescents aged 12-13 years in general are "doing just fine", i.e. in general they report high mental well-being and seldom co-occurring mental health problems. However, among adolescents who reported mental health problems (27 %), those with internalizing problems had to a higher degree low mental well-being whereas those with externalizing problems had to a higher degree high mental wellbeing. These findings contribute to extend theoretically knowledge about how mental well-being and mental health problems are related. Namely, internalizing problems are more related to low mental well-being and externalizing problems relates more to high well-being among young adolescents.

Girls with both internalizing problems and low degree of mental well-being appear to be a vulnerable risk group and overrepresented both in the general sample, but also among those with alcohol experiences. On the contrary, boys with high mental well-being and no co-occurring internalizing or externalizing problems were overrepresented among those with early alcohol experiences. More boys than girls had early alcohol experiences, however 28 % of the girls had been inebriated compared to 13 % among the boys out of those with an early alcohol debut. These findings on alcohol experiences among young adolescents differ from those in elder age cohorts (15-18 years) in which slightly more girls than boys can be classified as alcohol consumers (Gripe, 2015). The results might also reflect gender differences on *how* alcohol is consumed among the youngest adolescents. Girls might use alcohol for other purposes and in other settings than boys.

The JTCI dimensions in both the self-report and caregiver rating version showed unacceptable to good internal consistency. Hence, not all dimensions were found to be reliable, such as the dimension Persistence. Thus, it is possible that adolescents aged 12-14 years have trouble to discriminate the questions measuring Persistence as a separate construct compared to caregivers' ratings. Additional items and re-

formulations might frame the dimension more properly. It is also possible that the need for endurance in problem solving, commitment to tasks and goals despite frustration and fatigue (Persistence) are less obligatorily in early adolescence compared to in adulthood. Answers on these questions may therefore be less reliable. Young adolescents experience an everyday life which is different to the everyday life of adults. Formal responsibilities are (and *should* be) greater and more frequently occurring in adulthood, e.g. obligations both at work and in the household. The need for an income to pay for a living is also an important external motivation factor for adults to be committed to tasks. Hence, the Persistence dimension in Cloninger's biopsychosocial personality model might be more contextually bound than previously expected.

Age and gender effects were found on both temperament and character dimensions. However, larger effects on age might be assumed in a sample with wider age range. Gender differences in personality might be related to gender differences concerning mental health (both mental well-being, and mental health problems) among young adolescents. Further studies which investigate Cloninger's bio-psychosocial model of personality in early adolescence and implications for mental well-being and mental health problems are recommended.

Caregivers rated their child's personality as more mature (higher scores on Self-Directedness and Cooperativeness) than the child himself/herself. Especially daughters' capabilities for self-acceptance and self-efficacy (Self-Directedness) were overestimated. Their levels of anxiety and fear of new situations (Harm Avoidance) were on the contrary underestimated by the caregiver. This pattern might result in an underestimation of daughters' need for emotional support by their caregivers. A similar pattern did not emerge for boys, which imply that caregivers and their sons agree to a higher extent than caregivers to daughters concerning Self-directedness and Harm Avoidance. However, caregivers underestimated their sons' ability for persistence (or what is said to measure Persistence), but caregivers' and daughters' ratings were congruent.

The caregiver rating of the child's personality might reflect caregivers' mental representations with gender stereotypes about Swedish boys' and girls' behavior.

Girls may be assumed to be well-functioning, healthy and mature and boys may be assumed to be less patient and persistent. The rating might also be due to projection of idealized or wanted behavior on their child. Contradictory, caregivers' rating of their child's temperament in form of activity level, impulsivity and need for exploration (Novelty Seeking) are overlapping with the child's own report more than any other dimension in JTCI. The same pattern has previously been shown among spouses whom tend to rate character traits on their partner as more similar to their own. They tend to rate character traits of their partner as less accurate than temperament. Character dimensions are therefore suggested to be more subjectively rated than temperament (Brändström, Przybeck, & Sigvardsson, 2011). Possible, this conclusion is applicable to child and caregiver ratings as well. The results also imply that caregivers have limited insight concerning the internal behaviors of their children (i.e. feelings and thoughts). Caregivers' strong underestimation of their child's (both daughters and sons) ability to experience a larger universal perspective (Self-Transcendence) is another indicator of this. No gender difference was apparent concerning this character dimension.

Disagreements between the child's own experiences and an objective rater (teacher or caregiver) have also been shown on mental health problems. The tendency is to rate internalizing problems (e.g. anxiety and sadness) less accurately than externalizing problems (e.g. aggression and hyperactivity). Internalizing problems seem more difficult to detect as a problem for an adult rater compared to externalizing problems (A. Goodman et al., 2010). Girls generally report more internalizing and less externalizing problems compared to boys. They also report lower levels of mental well-being than boys. Potential gender stereotypic patterns did also emerge for temperament and character dimensions. Hence, gender differences concerning mental health and personality dimensions are visible already in early adolescence, but unfortunately, not easily detectable for adults. Caregivers, as well as teachers and other significant adults, are therefore encouraged to search for information actively to get a better understanding of young adolescents' inner thoughts and feelings.

Limitations

When interpreting the findings, some limitations need to be considered. To begin with, even though valid measures have been used, the data for both studies are based on self-reported information which is to be treated with caution when interpreting the results.

For Study I, it is also worth to notice that no volume or frequency measure on alcohol consumption, except a lifetime minimum of at least one glass of alcohol, was included in the analyses. How much alcohol and how often they drank could therefor vary extensively within the group. Still, one glass of alcohol or more can effectively differentiate the alcohol naïve children from those who have crossed society's clear boundaries about no alcohol usage in early ages. It is also important to recognize that results from the study cannot be taken to imply causality. At this time point, developmental trajectories are not yet detectable. Alcohol experiences at young age might have preceded potential internalizing and/or externalizing problems and vice versa.

In Study II, only adolescents and caregivers with a valid self-report were included in the analyses. There are several potential ways to explain the causes of more than 5 % missing items and wrong answer on the validity items. Children with reduced reading and/or concentration capabilities might have missed items and/or misinterpreted the validity items "*Answer false on this question*" and "*Answer true on this question*". Missing items and incorrect answers on the validity items might also be an indication of defiance. Further studies on how conduct problems and hyperactivity/inattention problems might be related to JTCI answering style are needed. Finally, a vast majority of caregiver ratings came from mothers only. Further studies on how mothers, fathers and other parental figures might rate the child differently are therefore suggested.

Conclusions

Study I comes with a novel approach for understanding mental health among adolescents. The results can complement the picture and contribute to knowledge concerning mental health among the youngest adolescents, both on mental well-being and mental health problems. Further research and practice should incorporate both gender

and well-being perspectives when describing and explaining mental health among adolescents, especially adolescents with an early alcohol debut.

Study II shows that the internal structure for JTCI is not fully satisfactory; the Persistence dimension does not form a reliable construct in the Swedish self-report version. Revision and expansion of this dimension is therefore suggested. The child's own perspective as well as the caregiver's is recommended to provide a thorough understanding of the child's personality. The results also support the importance of age- and gender specific norms of the JTCI.

It is important to recognize that personality dimensions, though apparent in early childhood, are not assumed to be stable until adulthood, and with potential to continue to development across the life course (Brändström et al., 2008; Caspi et al., 2005). Hence, the levels of temperament and character dimensions in adolescence should therefore be seen as part of an ongoing development process rather than static personality traits.

Together, these studies point out the need for gender awareness when studying mental health and personality. Girls with anxious personality behaviors, low mental well-being and internalizing problems might easily be neglected and experienced as more mature and healthy than they feel themselves. However, as the definition of "tweenies" imply; they are "in between" and often in the mental state of an elder teenager. They use attributes related to the teenage period and adulthood (e.g. clothes and appearance), but they might be less mature than they appear.

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