ATTRIBUTES MODULATING AFFECTIVE PROFILES IN PSYCHIATRIC PATIENTS Madeleine E. T. Zöller

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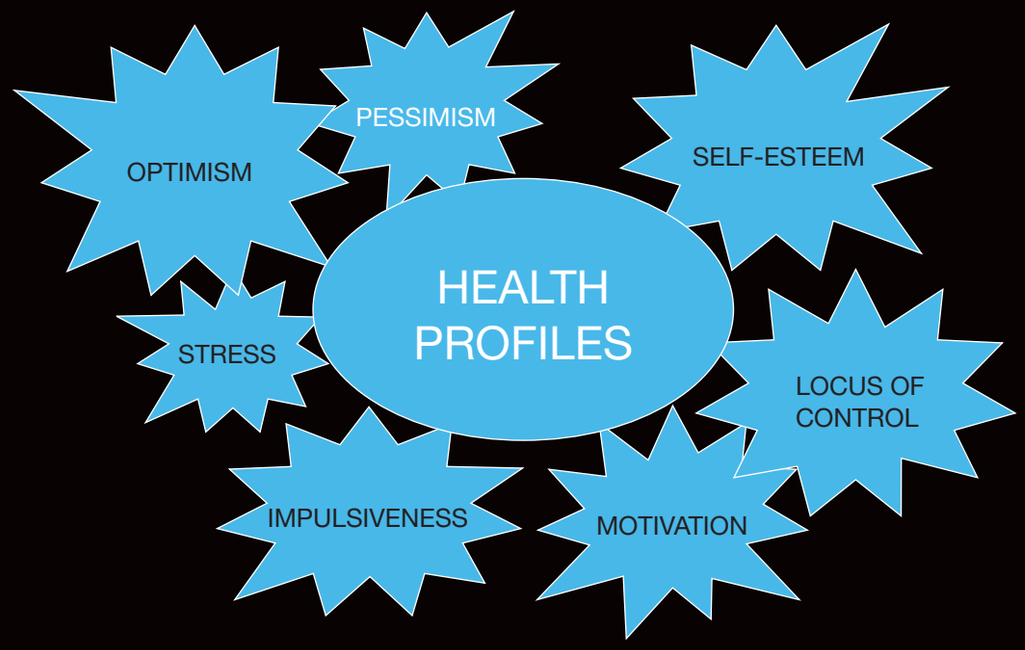

DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF GOTHENBURG

Attributes Modulating Affective Profiles in Psychiatric Patients

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Department of Psychology

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Christer, Per, och De Grå Pantrarna

Abstract

Zöller, M. E. T. (2016). *Attributes Modulating Affective Profiles in Psychiatric Patients*. Department of Psychology, University of Gothenburg, Sweden.

Psychiatrically disabled individuals (study I and II) as well as those with an additional deafness or are hard-of -hearing (study III and IV) often have the burden of a hidden affective disability. Positive (PA) and negative affect (NA) have emerged as significant independent dimensions in studies of affective structure. From these two systems four affective profiles (AP) are constructed, namely: Self-fulfilling (SF), high affective, low affective, and self-destructive (SD).

The aim of **Study I** was to identify factors predicting PA and NA respectively. Results indicated that the patient group had strong associations between AP, energy, optimism, self-reported health and stress. PA was predicted from optimism, whereas stress was counter-predictive. NA was predicted from stress, whereas optimism, energy and pulse rate were counter-predictive. Individuals expressing SF displayed the healthiest profiles compared with those expressing SD. **Study II** aimed at investigating to what extent affective state and mood are predictive of stress experience, and to observe gender effects. Results disclosed that psychiatric disorders had a detrimental effect on stress, energy and optimism. Stress was predicted by NA for both genders, but counter-predicted by PA among men only. **Study III** aimed to clarify the level of communication problems, positive mood, and to identify predisposing and protecting factors in psychiatric health. Results revealed striking communication problems with a high rate of non-fluent sign communication (86%) within the patients' families, and poor knowledge of the Swedish language by the patients. Self-esteem (S-E) was found to predict positive mood for patients as well as controls. Positive S-E was identified as a protective factor. Patients and the healthy controls were significantly different in stress, analgesics, and energy. Stress was positively related to sleep disturbances and analgesics. **Study IV** examined the perceived differences between attributes associated with positive mood, and attributes showing a negative association. Results showed that the patient group expressed less optimism, greater external locus of control, identified regulation, external regulation, amotivation, distractiveness, and motor impulsiveness, and lower levels of positive mood than the controls. Furthermore, a positive mood was predicted by optimism and motor impulsiveness, whereas amotivation and distractiveness were counterpredictive.

In conclusion, the patients differed markedly from the norm group with regard to all health variables. Data indicate that NA is the most important item predicting stress and that it appears more detrimental for health than stress. Analgesics may be a predisposing factor for the Affective Deaf Syndrome, ADS. These patterns suggest that this group of patients attempt to emerge from a condition of disempowerment, but require suitable interventional therapies to succeed. Further research should focus on intervention strategies that emphasize the acquisition of personal empowerment as well as providing a high degree of benefit.

Keywords: Positive mood, affective deaf syndrome, psychiatric diagnoses, disempowerment, impulsiveness

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Swedish summary

Huvudsyftet med denna avhandling var att undersöka hälsoprofiler hos psykiatriska patienter med och utan hörselskada på en öppenvårdsmottagning vid Sahlgrenska universitetssjukhuset i Göteborg. Vi avsåg att med hjälp av den Affektiva Profilmodellen (*Affective Profiles Model*) som baseras på PANAS instrumentet (positiv affekt – negativ affekt) undersöka hur hälsoprofilen påverkades av olika attribut såsom optimism, pessimism, stress, självuppskattning, impulsivitet, motivation och kontroll (*locus of control*). Modulationen av attributen var en komplex interaktion mellan många variabler. Det fanns svårigheter vid mätningarna framförallt av resultaten hos gruppen döva som använde det svenska teckenspråket. Med hjälp av teckenspråkskunnig personal och teckenspråkstolkar samlade vi in data i syfte att kunna hjälpa dessa patienter att identifiera strategier för att uppnå goda hälsoprofiler.

Både psykiskt sjuka individer liksom de som också har dövhet/och eller en allvarlig hörselnedsättning har ofta ett dolt känslomässigt handikapp. PANAS instrumentet som mäter Positiv affekt (PA) och negativ affekt (NA) har visats ha två oberoende dimensioner. Från dessa två system har man konstruerat fyra olika kombinationer av affektiva profiler (AP) dvs. ”självförverkligande” (SF), ”högaffektiva” (HA), ”lågaffektiva” (LA) och ”självdestruktiva” (SD). Dessa härleds från PANAS-instrumentet.

Den Affektiva Profilmodellen (dvs. Kombinationer av hög/låg positiv/negativ affekt) har använts för att förstå mentala hälsoproblem i samhället. I vår studie användes slutsatser angående resultaten i den Affektiva Profilmodellen: hälsa och ohälsa ‘*Affective Profile Model: ill-being and well-being’* som beskrivits och validerats av Erica Schütz (2015). Hennes avhandling består av 4 olika studier och bygger på självrapporter från 2637 ungdomar och vuxna från Sverige och USA. I dessa studier undersökte Schütz rollen hos affekt och dess relation till olika personliga attribut (personlighetskarakteristika och karaktärprofiler) och markörer för dåligt mående och bra mående ‘*ill- and well-being’* såsom kroppslig mående, psykisk stress och energi, depression, lycka, livstillfredställelse med flera indikationer på hälsa. Hennes resultat visade på att personer med självförverkligande hade lägre nivåer av stress. Omvänt hade individer med en självdestruktiv profil mer depression, lägre nivåer av lycka och livstillfredställelse. Egenmakt (*Empowerment*) har visats ha stor vikt för personlig hälsa och utveckling. Personliga attribut som befordrar egenmakt och förmedlas av positiv affekt är bland andra inre motivation, själv-reglering och karaktär.

Den Affektiva Profilmodellen är personcentrerad (Garcia, MacDonald, & Archer, 2015) och detta gör det mögligt att urskilja skillnader mellan profiler i de extrema ändarna av modellen, det vill säga självdestruktiva kontra högaffektiva, självdestruktiva kontra lågaffektiva, lågaffektiva kontra självförverkligande och högaffektiva kontra självförverkligande.

Studie I syftade till att identifiera faktorer som predicerar PA respektive NA. Resultat: En normgrupp med psykiskt friska personer (1925) och en patientgrupp (100) jämfördes där den senare gruppen visade starka associationer mellan affektiv personlighet, energi, optimism, självrapporterad hälsa och stress. PA predicerades från optimism, medan stress var kontrapredicerande. NA predicerades från stress, medan optimism, energi, pulshastighet var kontrapredicerande. Individer som uttryckte en självförverkligande profil (SF) visade de mest friska profilerna jämfört med de som visade självdestruktiva profiler (SD).

Studie II som jämförde psykiskt friska kontrollpersoner (101) med psykiskt sjuka personer (100) hade som syfte att undersöka i vilken grad som affektivt tillstånd och sinnesstämning var prediktiva för stresskänsla, och att observera om könsskillnader förelåg eller inte. Resultaten visade att psykisk sjukdom hade en skadlig effekt på stress, energi och optimism. Stress predicerades av NA för både män och kvinnor, men kontrapredicerades av PA bara för män.

Studie III jämförde friska kontrollpersoner (116) och psykiskt sjuka döva och hörselskadade personer (52). Den syftade till att klargöra vilken nivå som kommunikationsproblemen hade, att undersöka hur positivt stämningsläge påverkade, och att identifiera predisponerande och skyddande faktorer. Resultaten påvisade avsevärda kommunikationsproblem med en hög frekvens av icke-flytande användande av teckenspråket (86%) inom patienternas familjer, och en dålig kunskap i det svenska språket bland patienterna. Självkänsla predicerade positiv sinnesstämning både för patienter och kontroller. Positiv självkänsla identifierades som en skyddande faktor. Resultaten pekade på signifikanta skillnader mellan patienter och den friska kontrollgruppen avseende stress, analgetika och energi. Stress var positivt relaterad till både sömnstörning och analgetikaanvändning.

Studie IV jämförde samma grupper som studie III. Syftet var att undersöka skillnader mellan attribut som var associerade med positiv sinnesstämning och attribut som visade en negativ association. Resultaten visade att patientgruppen jämfört med kontrollerna uttryckte mindre optimism, lägre positiv sinnesstämning och större extern *locus-of-control* dvs. kontroll som härrörde från yttre faktorer. Då det gällde motivation uppvisade patienterna större yttre reglering (*external*

regulation), identifierad reglering (*identified regulation*) och omotivation (*amotivation*). Dessa kategorier av motivation är nära relaterade till varandra. Vid *external regulation* av motivation upplevs beteendet som beroende av belöning eller är försök att undvika negativa konsekvenser, och kan fungera mer som en omedelbar positiv belöning, medan *identified regulation,* som är en underkategori till *external regulation*, används med syftet att nå individens personliga välbefinnande och önskningar och vid *amotivation* upplever individen en brist på sammanhang mellan sitt beteende och konsekvenserna Patienterna uppvisade också större distraherbarhet och större motorisk impulsivitet. Ytterligare resultat var att positiv sinnesstämning predicerades hos patienterna av både optimism och motorisk impulsivitet medan amotivation och distraherbarhet var kontra-prediktiva.

Sammanfattningsvis bidrar avhandlingen med kunskap om affektiva hälsoprofiler hos psykiatriska patienter med och utan hörselskada. Stress tycks mindre skadlig för hälsan jämfört med negativ affekt (NA) i sig själv, vilket uttrycks i den självdestruktiva (SD) symptomprofilen. Data visade att NA är den viktigaste variabeln som predicerar stress. Resultaten från gruppen döva och hörselskadade visade att analgetika (smärtstillande) kan vara en predisponerande faktor för det affektiva dövsyndromet *Affective Deaf Syndrome (ADS)* och identifierades som ett nyckelattribut för patienter i riskzonen. Resultatmönstren visade att motorisk impulsivitet är prediktiv för positiv sinnesstämning medan omotivation och distraherbarhet var kontraprediktiva. Resultaten pekade också på att patientgruppen med dövhet och hörselskada försöker att ta sig bort från ett tillstånd av *disempowerment*, dvs brist på egenmakt och behöver få hjälp med lämpliga terapier för att lyckas.

Preface

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

I. Zöller, M. E., Karlsson, E., & Archer, T. (2009). Self-Rated Affect Among Adults Presenting Psychiatric Diagnosis. *Individual Differences Research,7*(1), 14-28.

II. Zöller, M., & Archer, T. (2009). Predicting Stress in Male and Female Psychiatric Patients and Healthy Volunteers, *Social Behavior and Personality, 37*(8), 1081-1094.

III. Zöller, M.E.T., Archer, T. (2015). Emotional Disturbances Expressed by Deaf Patients: Affective Deaf Syndrome. *Clinical and Experimental Psychology*, 2: 109. doi:10.4172/cep.1000109

IV. Zöller, M.E.T., Schütz, E. & Archer, T. (2016). Mood and Impulsiveness in Affective Deaf Syndrome. *Journal of Psychiatry and Psychology Research: Well-being, Empowerment and Affective Profiles, 1*(1).

Contents

Figures and Tables

Abbreviations

ADS	Affective Deaf Syndrome
ADHD	Attention Deficit Hyperactivity Disorder,
ANOVA	Analysis of Variance
AUC	Area Under the Curve
BIS	Barratt's Impulsiveness Scale
BMI	Body Mass Index
CPRS	Comprehensive Psychopathological Rating Scale
DIP-Q	DSM-IV and ICD-10 Personality Questionnaire
DSM	Diagnostic and Statistical Manual of Mental Disorders
GAF	Global Assessment of Functioning
HA	High affective
ICD	International Classification of mental and behavioral Disorders
LA	Low Affective
LOC	Locus Of Control
LOT	Life Orientation Test
MANOVA	Multivariate Analysis of Variance
MDD	Major Depressive Disorder
NA	Negative Affect
PA	Positive Affect
PANAS	Positive Affect and Negative Affect Scale
PCA	Principal Components Analysis
PTSD	Posttraumatic stress disorder
SD	Self-Destructive
SE	Stress and Energy questionnaire
SES	Rosenberg's Self-Esteem Scale
SF	Self-Fulfilling
SIMS	Situational Intrinsic Motivational Scale
SPSS	Statistical Package for the Social Sciences
SMS	Short Message Service
SSL	Swedish Sign Language
WHO	World Health Organization

Acknowledgements

Firstly, I want to thank all the individuals participating in these studies, who so generously shared their experiences in different ways, and also for making my research possible. I also want to thank my patients and their families for inspiring and motivating me to do research.

I have been lucky to have a very special tutor, professor Trevor Archer, who encouraged me and supported me in so many ways throughout the entire process. Thank you for your commitment, for all discussions, intellectual inputs, and advice, and for your openness, and friendship. I also want to thank my co-worker on two of the papers, Erica Schütz, PhD for her genuine support. I don't want to forget assistant professor Danilo Garcia, co-founder together with Trevor Archer of the network for Empowerment. This novel network continues the research on well-being when dissertations are finished and real research life commences. During these years I met many researchers at the institution whom I am grateful to, in particular the rewarding discussions with associate professor emeritus Lars-Gösta Dahlöf stand out in my memory. I want to thank the Postgraduate studies officer Ann Backlund for being such a professional guide throughout the entire administrative processes and among all for being a solid rock to cling to during the last few months of my time as a PhD student. I also want to thank the Communications officer Ann-Sofie Sten for preparing the cover of the dissertation.

I want to thank my co-workers at the Psychiatric Unit of Deaf and hard-of-hearing who also are the co-workers of my two last papers, psychologists Johannes Einestam and Vera Lundborg, specialist nurse Anette Ohlson, occupational therapist Pernilla Malmros and social counsellor Eva Lundholm who all helped by collecting data from patients often in cooperation with sign language interpreters and Jeanette Alfredsson who helped in collecting data from healthy controls. I also want to express my deep gratitude to professor Jan Svedlund; Martin Rödholm, PhD; Tobias Nordin, PhD; Antonio Gonzales, MD and Peter Sand, PhD, who facilitated my research at the Psychiatric Clinic at the Sahlgrenska University Hospital. I wish to convey very special thanks to associate professor Birgitta Rembeck, who during all these years was my special mentor and also was by my side during this research by participating in the application to the Regional Ethics Inquiry Committee in Gothenburg.

Throughout the years I have felt the support of my very special friends, the Gray Panthers, i.e. Christine Andersson, Mona Kjellgren, Kerstin Malmcrona, Kerstin Morgan, Birgitta Rembeck, Marie Samuelsson, and Ulla Thelander! who all are senior consultants in psychiatry and many of them now emerita from the Sahlgrenska University Hospital. In our meetings during all these years they always asked how my research was progressing, as I was writing three dissertations in a row (medicine, theology and psychology), these queries always encouraged me to retain motivation. I also want to thank my family and all my friends especially psychologist Anneli Dufmats, PhLic for sharing my thoughts and discussions during the years.

My first experience in research was in psychology. At the Audiological Unit at the Sahlgrenska University hospital I published a study in *Scandinavian Audiology* on 'Directional Hearing: Three different Test-Methods' (Zöller et al., 1973). After this I moved into medicine, psychiatry, with a study on Neurofibromatosis type I that included psychiatric and somatic aspects. The findings from that research led to a further interest in the positive psychological research on affectiveness that the research group around Trevor Archer had developed at the Psychological Institution, Göteborg during the last decade or more. With them I found a place to continue psychological research on attributes modulating affective profiles in persons both in general psychiatry and in psychiatric patients with deafness and hard-of hearing.

With a great surprise and a feeling of content I find myself back at my initial interest in the audiological field. It has been a remarkable journey that is not finished yet.

Introduction

The affective state of an individual influences all areas of life ranging from small everyday decisions, reactions and responses to situations of great life-changing events as marriage, choosing type of education, and to reactions to loss of a close family member. As suggested here affect is central for the human being. Both positive and negative affect help us to relate to other people.

Consequences of dysfunctions of the affective life may lead to isolation and ill-being (Scheiderer et al., 2016). Negative affect may lead to a daily challenge (Miller et al., 2009). Well-being is instead related to positive mood, energy, optimism and a non-negative reaction in different situations (Archer et al., 2008). The World Health Organization's definition of health (WHO, 2001) highlights promotion of health, as an integrated state of physical, mental and spiritual well-being, rather than merely the absence of disease or disability. Hence, an understanding of the mechanisms of affective personality considering both well-being and ill-being is essential in studying psychological function and dysfunction.

The general aim of the present dissertation was to examine how affectivity as measured by the Affective Profiles Model based on the PANAS (positive affect/ negative affect) instrument was affected by different personal attributes such as optimism, pessimism, stress, self-esteem, impulsiveness, motivation, and locus of control. Within the studied groups of hearing and deaf/ hard-of-hearing persons with psychiatric disorders there were many confounding factors to be considered. Even when there were many difficulties to overcome, the ultimate goal was to find markers of ill-being and well-being as well as tools to identify strategies that help individuals to develop good health profiles.

Positive and negative affect as a basis for studies regarding health and well-being

Affective mood is a concept that depends on both positive affect (PA) as well as negative affect (NA) and is defined as (PA/NA) *100. Anxiety and depression can be measured by the method of using the two dimensions of PA and NA. Anxiety is a state of high NA whereas depression is a mixed state of high NA and low PA (Clark & Watson, 1991). Low PA is therefore important in

discriminating depression from anxiety. A subcomponent of NA thought to be specific to anxiety – autonomic hyper-arousal – has been suggested (Clark and Watson, 1991), therefore giving depression-specific features (low PA), anxiety-specific features and features shared between depression and anxiety (general NA). The model has been further revised as evidence has suggested that hyper-arousal is a lower order factor that is associated specifically with panic disorder rather than being a factor common to all anxiety disorders (Brown et al, 1998; Mineka et al., 1998).

The interrelationship between chronic physical illness, depression or depressive symptoms seem to be associated with an individual's cognitive-emotional behavioral profile commonly linked to sets of psychosocial resources determining health outcomes. Endler et al (2001) investigated differences in illness-specific coping strategies, self-efficacy, and perceived control over illnesses in adults (18–72 years) reporting acute (n =137; 41 males, 96 females) and chronic (n = 137; 41 males, 96 females) health problems. The results indicated that individuals with acute illnesses scored higher on general self-efficacy than individuals with chronic illnesses. Emotional preoccupation, instrumental and distraction coping strategies were used more likely by people with chronic illness, whereas people with acute illnesses used palliative coping strategies to a greater extent. Self-efficacy was found to be negatively related to emotional preoccupation coping, regardless of illness category (i.e., acute vs chronic). (see also Avero, Corace, Endler, & Calvo, 2003; Bisschop et al., 2004; De Ridder & Schreurs, 1996, 2001; Endler, Kocovski, & Macrodimitris, 2001; Endler & Parker, 1990; Zeidner & Saklofske, 1996;). Low levels and/or unstable self-esteem may offer an enduring vulnerability factor for depression as depression is characterized by low levels of self-esteem (e.g., Butler et al., 1994; Frank & De Raedt, 2007; Kernis et al., 1998; Roberts et al., 1995; Strauman & Kolden, 1997; Teasdale, 1988; Walker, 1994). Lau has studied Teasdale's emphasizes of the phenomenon that the degree of content and activation of negative thinking patterns determine whether one's initial depression becomes more severe or persistent. He has demonstrated sufficient evidence of this cognitive reactivity as well as an extension of this model to the problem of suicidal relapse/recurrence including a review of preliminary support for this approach (Lau et al, 2004). Sleep problems have been identified in a plethora of conditions associated with psychiatric ill-health (Krystal, 2006; Morrison et al., 1992).

Affective personality self-reported data concerning stress may also be associated with affective state (Watson, Pennebaker, & Folger, 1987). Nevertheless, it appears that both PA and NA influence individuals' relations to stressors, situations associated with stress and the experience of stress (Aldwin, 1994; Melvin and Molly, 2000). In a study by Norlander at al. with 90 individuals, 46

food product employees and 44 flying squad policemen who responded to Positive and Negative Affect Scales (PANAS) and Posttraumatic Growth Inventory (PTGI) it was concluded that the contributions of positive affect upon expectancy motivation, cognitive functioning, clinical problem-solving, decision-making considerations, creative problem-solving, word associations and memory accessibility was documented, thereby underlining associations between affective state and cognitive processing (Norlander, von Schedvin, & Archer, 2005).

Studies on the influences of affective personality attributes have formed the basis of much prevailing notions regarding health and well-being over different ethnical populations, gender and clinical and healthy volunteer populations (Andersson-Arntén, Jansson, & Archer, 2008; Archer, Adolfsson, & Karlsson, 2008; Archer, Adrianson, Plancak, & Karlsson, 2007; Garcia, 2011a, 2011b, 2012a, 2012b; Garcia & Archer, 2012; Karlsson & Archer, 2007; Palomo, Beninger, Kostrzewa, & Archer, 2008a, 2008b; Palomo, Kostrzewa, Beninger, & Archer, 2007; Zöller & Archer, 2009; Zöller, Schütz, & Archer 2016; for a recent review see Garcia, Ghiabi, Moradi, Siddiqui, & Archer, 2012). These studies described results showing that feelings of enthusiasm, activity, feelings of duty, control, strong and proud (i.e. PA) are related to well-being. Feelings such as self-acceptance, goal-orientations and empathy are related to wellbeing, whereas feelings such as anger, guilt, shame, contempt, and distress (i.e. NA) are linked to anxiety, depressiveness, ill-being, rumination, inaction, and health problems.

The Affective Profile Model

The Affective Profile Model (i.e., combinations of high/low positive/negative affect) which was used in the study is one valid tool, among others, for understanding mental-health problems in society. This thesis is using multiple psychological instruments including 'The Affective Profile Model: ill-being and well-being' described and validated by Schütz (2015). In four studies Schütz investigated self-reports from 2.637 adolescents and adults from Sweden and the USA and studied the role of affectiveness and its relation to various personal attributes (personality characteristics and character profiles) and markers of ill- and well-being, such as somatic and psychological stress, stress and energy, depression, happiness, life satisfaction, happiness-increasing strategies, coping and Type-A personality in the light of the affective profiles and gender. The results indicated for example that self-fulfilling individuals (high NA and low PA) compared to all the other affective profiles investigated among other positive markers for health, expressed a higher level of responsibility, emotional stability, better personal relations, vigor, better total coping, higher level of

energy, and lower level of stress. On the contrary self-destructive individuals (high NA and low PA), compared to all the other affective profiles, thereby expressed significantly more stress, more depression, lower level of happiness and life satisfaction.

The Affective Profile Model is person centered and this makes it possible to discern differences between profiles at the extreme ends of the model (i.e., self-destructive vs. high affective, self-destructive vs. low affective, low affective vs. self-fulfilling, and high affective vs. self-fulfilling). Although Archer and colleagues coined the term, affective personalities as their 'working' classification (Norlander et al., 2002). Garcia and Archer have used the label affective profile during the last few years (e.g., Garcia, Kerekes, Andersson Arntén & Archer, 2012 a study on 304 participants (183 boys, 121 girls) high school pupils from west Sweden (M = 17.34 years, SD = 1.16, range = 16–19) from different socioeconomic and cultural backgrounds and specializing in different subjects during their studies). Although Cloninger (2002) describes possible risks throughout life for persons with special combinations of 'difficult temperament' mediated by psychosocial conflicts, the temperament is according to Garcia et al. assumed to have a more pathoplastic effect while the character development is the key to understand and evaluate health. Garcia (Garcia, 2011a) also suggest that their model goes beyond the view of affect as two separate systems and considers the interaction between both dispositions.

The affective profile classification was developed in an orthogonal manner via an individual's experience of positive affect (PA) and negative affect (NA). Four different profiles were constructed from dividing the results on a positive affect-scale into two parts (median split) thereby distributing the participants into one group with high positive affect and another group with low positive affect and with the same procedure dividing the participants' results on the negative affect-scale into two parts. The four profiles developed are high PA- and low NA-values ('Self-actualization', later modified to 'Self-fulfilment'), low PA and low NA ('Low affective'), high PA and high NA ('High affective'), and low PA and high NA ('Self-destructive') For the *pro* and *contra* of the two approaches to the affective profiles model: median split (variable oriented) and cluster analysis (person oriented) see the article by Garcia, MacDonald, & Archer (2014). The article is based a study of 2.225 participants, mean age 31.79 (*SD* = 15.58), 1.160 males and 1.065 females.

The median split method and the cluster analyses method both resulted in four types of affective profiles. 'Self-fulfilment' type of affective profiles showed a higher level of responsibility, more emotional stability and original thinking, less stress and more dispositional optimism than the 'Self-destructive' group (and in certain cases the 'High affective' group, too). The 'Low affective' group

expressed more responsibility and better personal relations than the 'Self-destructive' group. Thus, it appears that personal characteristics necessary for a normal individual's adequate functioning in everyday life bear some relationship to the four types of affective personality. The Affective Profile Model has been used in the research by Archer and colleagues. (Adrianson, Ancok, Ramdhani, & Archer, 2013; Archer, Adolfsson, & Karlsson, 2008; Archer, Adrianson, Plancak, & Karlsson, 2007; Bood, Archer, & Norlander, 2004; Norlander, Bood, & Archer, 2002; Norlander, Johansson, & Bood, 2005; Palomo, Beninger, Kostrzewa, & Archer, 2008a, b; Palomo, Kostrzewa, Beninger, & Archer, 2007).

Garcia, MacDonald and Archer (2015) have presented a summary on the main findings during the past 10 years using the affective profiles model. The summary indicates complex relationships between different characteristics. I shall mention some of the results. **Self-Fulfilling Profile** is among other characteristics associated with high levels of psychological well-being, life satisfaction, high positive affect, low negative affect, and harmony. Low levels of ill-being: low depressive and stress symptoms and sleeping and psychophysiological problems. Personality: low in Neuroticism, high in Extraversion low in Harm Avoidance, high in persistence, high in cooperativeness, high in energy and low in assessment (rumination). **The High Affective Profile** is with among other characteristics associated with high levels of psychological well-being: environmental mastery, self-acceptance, personal growth, and purpose in life. Low levels of subjective well-being: high negative affect. Low levels of ill-being: low depressive symptoms. High levels of ill-being: frequent sleeping and psychophysiological problem and high stress. Personality: high in Neuroticism, high in Extraversion, high in Reward Dependence. High in energy and high in assessment (rumination). **The Low Affective Profile** is characterized by high levels of psychological well-being. High levels of subjective well-being: life satisfaction, low negative affect, and harmony. High levels of ill-being: high psychophysiological and sleeping problems. Low levels of ill-being: low depressive and stress symptoms. Personality: low in Extraversion, high in Emotional Stability, low in Persistence, low in Self-directedness, low in Cooperativeness. Low in energy and high in assessment (rumination). **The Self-Destructive Profile** is characterized among other features by low levels of psychological well-being. Low levels of subjective well-being. High levels of ill-being: high in depressive and stress symptoms and psychophysiological and sleeping problems. Personality: high in Introversion, high in Neuroticism, low in Persistence, high in Harm Avoidance. Low energy and high in assessment (rumination).

In summary, it seems to be the various combinations of positive and negative affect offered in the affective profiles that allows a full use of the dimensions of

both positive and negative affect to interact and thus offers a wide and detailed health profile that is a valuable tool in the research of this dissertation.

Personality and classification systems

Different tools are available to describe mental and personality disorders. Commonly used diagnostic systems in psychiatric research comprise the instruments *Diagnostic and Statistical Manual of Disorders* (*DSM-IV*), (American Psychiatric Association, 1994) and the *International Statistical Classification of Disease and related Health Problems* (ICD-10), (Geneva: WHO, 1992).

The *DSM-IV* uses a set of ten disorders thought to meet this definition. As will be demonstrated in this thesis the self-rating *DSM-IV and ICD-10 Personality - Questionnaire (DIP-Q)* are constructed to function in the same way as the definitions of personality disorders in the *DSM-IV* diagnostic manual (Ottosson *et al*., 2000). A recent study on the joint structure of the *DSM-IV* axis 1 and axis II (Røysamb *et al*, 2011) concluded that both Axis I and Axis II disorders are substantially related to normal traits as defined in the five-factor model of personality (see also Trull & Sher, 1994;). The trait of neuroticism is associated with a spectrum of internalizing clinical disorders such as depression, anxiety, anorexia, panic disorders, and phobias (Clark, Watson, & Mineka, 1994; Hettema, Neale, Myers, Prescott, & Kendler, 2006; Lahey, 2009). The conclusion seems to be that neuroticism, and partly low agreeability and conscientiousness, are common denominators to a range of personality disorders (Saulsman & Page, 2004). Integrative models of normal personality traits and disorders were proposed (DeYoung, 2006; Digman, 1997; Markon, Krueger, & Watson, 2005; Watson et al., 2008; Widiger & Mullins-Sweatt, 2009). Despite knowledge of factors common to Axis I and Axis II disorders regarding personality traits little is known about the combined comorbidity of the two axes.

The analysis by Røysamb et al. (2011) discusses the research mentioned above and includes a broad set of disorders and further represents an expanded replication of previous findings concluding that the internalizing spectrum contains anxiety disorders, major depression, anorexia, pain disorder, and posttraumatic stress disorder. Negative affectiveness represents a common feature of these disorders (Goldberg et al., 2009; Krueger, 2005; Watson, 2005). In contrast to some previous studies (Krueger, 1999; Slade & Watson, 2006), Røysamb et al (2011) did not find sub factors reflecting distress versus fear within the internalizing spectrum. At this general level, these disorders rather share a common liability. Further, disorders varied to which degree they reflected

the core characteristics of the cluster. An example given is that panic disorder and social phobia represent typical disorders of this spectrum, whereas anorexia nervosa and pain disorder represent more peripheral disorders.

There are different personality theories that try to describe how a human person functions psychologically and psychiatrically. Methods focus partly on the person as an entire individual and partly as a complex individual. All human beings have a personality with different properties. When the personality traits become too rigid or too extreme they confine the functionality of the person. These traits are detected in the person's way of thinking, way of dealing with feelings, control of impulses, relations to other individuals, further these traits form the personality structure and may give loss of function in many areas such as work, social relations and relations to oneself. The use of self-rating formulas such as the DIP-Q questionnaire were validated by a large number of studies (Bodlund, Grann, Ottosson, & Svanborg, 1998; Ottosson, 1999; Ottosson, Grann, & Kullgren, 2000).

Personality is one of the most important traits of the human being, and as we have seen it is closely integrated to *DSM-IV* axis I disorders, and constitutes the very essence of the human being. In this study of affective disorders in psychiatric patients, we used diagnoses assessed by *DSM-IV* axis I and II and studied these in relation to the affective profiles. The personality disorders coded on DSM-IV axis II are *Cluster A* with paranoid, schizoid and schizotype disorders, *Cluster B* is characterized by antisocial-, borderline-, histrionic- and narcissistic personality disturbance. *Cluster C* is characterized by phobic-, dependent-and compulsion disturbance.

Personal distress is a very fallible threshold to the diagnosis of personality disorders (Walker, 1994). The absence of distress can also be quite imperfect in signifying significant impairment. Individuals might be significantly impaired by personality traits as mistrust, low empathy and antagonism but not find them distressing. Very few persons seek treatment for an antisocial or psychopathic personality disorder.

Attributes modulating affective personality

Among the personal attributes discussed in this thesis are optimism and pessimism, stress, anxiety, frustration, self-esteem, dispositional optimism, locus of control (internal and external), motivation (intrinsic, identified regulation, external regulation, amotivation), distractiveness and impulsiveness

(impulsivity). The goal of this section is to present research results on how these attributes interact with positive and negative affect and interact with each other. The goal is also to give information on how to interpret the data of from the self-evaluation questionnaires that are used to measure these attributes.

Stress

Affective personality self-reported data concerning stress may be associated with affective states (Watson, Pennebaker, & Folger, 1987) and both positive affect (PA) and negative affect (NA) may possess explanatory value (Clark & Watson, 1988), despite these scales being correlated with different factors. Nevertheless, it appears that both PA and NA influence individuals' relations to stressors, situations associated with stress and the experience of stress (Aldwin, 1994; Melvin & Molly, 2000). It is possible that the 'affective profile' of individuals predisposes them to confront stressful situations with different propensities.

Psychosocial stress may exert negative influences upon physical health (Watson & Pennebaker, 1989). Negative stress has been described as dysregulation in melancholic and atypical depression involving high vs. low corticotrophin releasing hormone/noradrenalin (Gold & Chrousos, 2002, Chrousos, 2009). Even positive stress may induce negative reactions if maintained chronically without intervals for rest and recuperation (McEwen, 2006; Sapolsky, 2005). The hazards of chronic stress are typically expressed in people with recurrent depression (Farmer et al., 2008).

The dangers of chronic stress are expressed in a multitude of behavioral and somatic factors (Farmer et al., 2008; Ljung & Friberg, 2004). Stress is a common word generally referring to an experience that promotes feelings of anxiety and frustration which push us beyond our ability to successfully cope (McEwen, 2006). It is well-known that stress involves the entire person, body and mind. Stress and /or situations associated with stress appear to accompany many aspects of an individual's everyday life and it seems undeniable that stress negatively influences individuals' psychological and physical health (Friedman et al., 1992). The dangers of chronic stress are expressed in a multitude of psychological and somatic factors (Ljung & Friberg, 2004; Putman, Antypa, Crysovergi, & van der Does, 2010).

Lifestyles and environment are often to blame for chronic stress disorders, but are also able to modify and thereby counteract stress-related disorders. The pivotal role of the brain is also evident from its role in genetic differences when responding to stress. A major depressive disorder (MDD) has a genetic component of approximately 50%, which indicates that environmental effects contribute significantly to disease onset (Shelton, 2007).

The term ‘allostasis’ was introduced by Sterling and Eyer (1988) to refer to the active process by which the body responds to daily events to maintain homeostasis. Allostasis literally means ‘achieving stability through change’. McEwen et al., (2008) explain that they introduced the term ‘allostatic load or overload’ to explain how chronically increased or dysregulated allostasis can lead to disease. They advocate that ‘chronic stress over time often leads to ‘wear and tear of the body’ and to ‘allostatic overload’.’ This is so because of the two-way communication between the brain and the physiological systems and consequently is also possible to reduce the chronic burden and to benefit brain bodily health and resilience when the stress load is reduced by e.g. regular physical activity, social support, and relaxing activities. (McEwen, 2007; 2009).

There are a variety of treatments suggested to counteract the ‘allostatic overload’ caused from stress. Positive affect, good self-esteem and social support are factors that may be protective to allostatic overload and thus to chronic stress disorders (McEwen 2008). A positive outlook at life and a good self-esteem are important for protection against stress (Seeman et al., 2002). Positive affect based on experiences during a working or leisure day, was correlated to lower cortisol production and higher parasympathetic activity (Steptoe et al., 2005). Poor self-esteem was shown to be associated with high levels of plasma cortisol and when combined with low internal locus of control also to be related to 12-13% smaller volume of the hippocampus, as well as higher cortisol levels during a mental arithmetic stressor (Pruessner et al, 1999, 2005). Personal attributes are important in how individuals deal with stress-filled experiences of daily life. Education, self-learning and optimal life-style based upon healthy attachment to self are ways to counteract detrimental effects of stress. Regular physical exercise/activity has repeatedly been shown to promote positive benefits in cognitive, emotional and motor domains associated with reductions in distress and negative affect (Archer et al., 2014).

Optimism and pessimism

It has been observed that negative affect and positive affect are associated closely with personality characteristics such as optimism and pessimism (Peterson, 2000; Peterson & Bossio, 1991; Scheier & Carver, 1982). Several different sources have indicated that dispositional optimism enhances both physical and psychological well-being (Aspinwall & Taylor, 1992; Scheier et al., 1989). It is suggested that the differences in results are due to the different types of coping behaviors that optimists and pessimists apply whereby optimists generally present stable coping tendencies in hypothetical situations (Carver, Scheier, & Weintraub, 1989).

Optimism has been shown to be an intrapersonal resource that may counteract the impact of negative events linked to lower levels of depression, greater well-being, more health benefits and positive outcome over a wide range of studies (e.g., Taylor and Brown, 1988; Scheier and Carver, 1992; Scheier et al., 1994; Bjorck et al., 1999). Individuals with optimistic expectancies express positive outlooks, even under difficult circumstances (Scheier and Carver, 1987), and they possess numerous active coping strategies (Aspinwall and Taylor, 1992; Friedman et al., 1992; Segerström, 2005).

Individuals expressing positive or negative affect may be differentiated both during serious illness (Friedman et al., 1992) and during specific threats to health. Optimists tend to employ more problem-focused (Carver et al., 1993) coping strategies and, if this is impossible, can find adaptive emotion-focused strategies. Pessimists tend to employ denial and separate themselves from the objective both mentally and behaviorally, independent of whether they can solve the problem or not (Clark & Watson, 1988). When a sufficient goal-oriented outcome is obtained, affect is positive but hindrance of this outcome induces negative affect (Carver & Scheier, 1990).

Gray has described optimism and pessimism as dependent upon an individual's extroversion, whereby individuals expressing a high degree of extroversion showed a higher degree of positive affect concerning the type of outcome of a situation (Gray, 1987). Pessimism was principally associated with neuroticism and negative affect. Optimism was primarily associated with extraversion and positive affect. An explanation may be that an individual expressing a lower level of positive affect views a given situation from a negative perspective and expects a worse outcome. High levels of pessimism are not only associated with negative affect (Watson, Clark, & Tellegen, 1988) but also with neuroticism (Costa & McCrae, 1989). Individuals expressing high levels of positive affect also possess the highest potential for survival (Bostock et al. 2009; Marshall et al., 1992; Peterson, Seligman, & Vaillant, 1991; Scheier et al, 1999; Shulz, Bookwala, Knapp, Scheier, & Williamson, 1996).

Carver (2014) demonstrated that self-control and optimism are distinct and complementary strengths. In addition, contrary to pessimism, which is characterized by disengagement from effort, optimism has its strength in a persisting effort and a problem focused coping in the context of potentially controllable challenges (Carver et al, 1993; Rasmussen, Wrosch, Scheier, & Carver, 2006). LOT was demonstrated to separate optimism and pessimism (Herzberg et al, 2006). Both the optimistic and the pessimistic attitudes hold across various life domains. According to Carver & Scheier (2014) the personality dimension optimism versus pessimism has its roots in folk wisdom and in expectancy-incentive motive theories developed during centuries.

Optimism is part of the broad matrix of personality, and studies on dispositional optimism began before the 5-factor personality structure with the broad traits neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience was developed (McCrae & Costa, 1997). As optimism is distinct from these traits (Alarcon, et al, 2013; Kam & Meyer, 2012) (even if it has some overlap with agreeableness and conscientiousness (Sharpe, 2011) it is not easy to capture optimism well in the 5-factor viewpoint (Carver & Scheier, 2014). Optimism is also related to other constructs as hope (Snyder, 1994), attributional style (Seligman, 1991), and self-efficacy (Bandura, 1997). However, the LOT concerns the expectations of the future and is not like the other constructs related to situational expectances or the means of the outcome.

The recent literature has indicated that relationships between posttraumatic growth and dispositional optimism proved to be similar (Bostock et al., 2009). Posttraumatic growth appears to be facilitated and maintained by endorsement rather than absence of posttraumatic stress disorders (Dekel et al., 2012). There is an important difference between acceptance of a reality and active denial. Pessimists tend to have more instable coping tendencies and coping responses that emerge when confronting stressful situations (Solberg et al., 2009). Acceptance is a way in which one is able to restrict perceptions and to confront the situation. Acceptance is not giving up, a pessimistic person, may give up but acceptance may serve the purpose of keeping the person target oriented, and, indeed, by the words of Carver et al. (2010) 'life-engaged' (see also Scheier & Carver, 2001).

In summary, recent research by cognitive scientists studied links between motivation and cognition and examination of the cognitive-affective construct, which has important motivational overtones Carver and Scheier (2014). Optimists and pessimists approach problems differently. They differ in coping with adversity; they also differ in their resources, social as well as socioeconomic (Caver, Scheier, & Segerstrom, 2010; Roberts et al, 2007). Hence, it is of interest to ascertain whether or not optimism/pessimism may contribute better/worse to health and the mediator role of affect. The ability to cope with stress may vary considerably as a function of optimism and affective profile.

Self-esteem

High self-esteem and dispositional optimism are intrapersonal resources that help people cope with adversaries in life (Baumeister et al 2001). Self-esteem appears to be an essential ingredient for psychosocial well-being by modulation of personal aspirations, goals, motives and social interactions (Lakey & Scoboria, 2005). It has been linked to better adjustment, lower depression, and

less helplessness in individuals presenting a variety of health problems (Nicassio et al., 1985; Ezquiaga et al. 1999; Gureje et al., 2004).

Low energy is often connected to a low self-esteem. Conflicting results between studies may be due to different scales used for the measurement of self-esteem. Self-esteem scores can be contaminated by people's efforts to make themselves look good, and the measures may also conceal important distinctions between defensive, inflated, narcissistic, and so-called genuine high self-esteem (Baumeister et al., 2003). Baumeister et al. have reviewed studies from the 70ties up to 2003 and their conclusion is that, 'the benefits of high self-esteem fall into two categories: enhanced initiative and pleasant feelings. We have not found evidence that boosting self-esteem (by therapeutic interventions or school programs) causes benefits. Our findings do not support continued widespread efforts to boost self- esteem in the hope that it will by itself foster improved outcomes. In view of the heterogeneity of high self-esteem, indiscriminate praise might just as easily promote narcissism, with its less desirable consequences. Instead, we recommend using praise to boost self-esteem as a reward for socially desirable behavior and self-improvement.'

The interrelationship between chronic physical illness, depression or depressive symptoms has been associated with individuals' cognitive-emotional behavioral profiles that are linked to sets of psychosocial resources determining health outcomes (Endler et al., 2001; Bisschop et al., 2004). Since depression is characterized by low levels of self-esteem, low levels and/or unstable self-esteem may offer an enduring vulnerability factor for depression (Frank & De Raedt, 2007).

Much evidence suggests that self-esteem may influence individuals' perceptions and cognitive appraisals of and responses to a multitude of events and situations, such as occupation, examinations, illness, stress, chronic pain etc. (McFarlin and Blascovich, 1981; Baumeister and Tice, 1985; Bensik et al., 1992; Conn et al., 1992; Baumeister et al., 1993; Christian, 1993; Lacey Cannella et al., 2007).

Nima et al., (2013) point out that well-ness studies (Cloninger, 2006, Huppert & Whittington J. E., 2003) showed that sheer absence of positive emotions was a better predictor of morbidity than the mere presence of negative emotions. Nima et al., (2013) however state the possibility that the presence of negative emotions in combination with the absence of positive emotions increases morbidity. A limitation of this study in the relation to the results of this dissertation is that the study by Nima et al. (2013), was conducted on university students and not on psychiatric patients, still the study is very useful as it illustrates how mediation and moderation can be used to address different research questions of interactions that often are overlooked.

When McFarlin et al., (1984) compared people with high and low self-esteem those with high self-esteem made better use of situational cues in deciding what is the proper action to do for themselves and that people with low self-esteem were more responsive to directions that simply tell them what to do. Di Paula and Campbell (2002) studied the relationship between the level of self-esteem and knowing when to quit. Compared with low self-esteem, those with high self-esteem persisted more after a single failure, but less after repeated failures when an alternative was available. Baumeister et al., (2003) studied reactions by people with high and low self-esteem when facing difficult or unobtainable goals and given different alternatives. They conclude that a high self-esteem has a value in causing people to endure longer in the face of failure, but if there is no alternative strategy or when the alternative is a poor strategy, they know when to quit. Thus they seem to acknowledge self-regulation strategies better than low self-esteem people.

Healthy social relationships yield a natural feed-back on one's self-esteem. Interpersonal relations are important to counteract stress and depression in individuals with health problems, and is associated with better adjustment, less depression and helplessness (Gureje, Harvey, & Herrman, 2004). Individuals who express high levels of self-esteem appear to possess both belief and expectancy regarding their own merits, abilities, strengths and competence (Baumeister, Bratslavsky, Finenauer, & Vohs, 2001; Rose, Endo, Windschitl, & Suls, 2008).

Motivation

In their work on the Assessment of Situational Intrinsic and Extrinsic Motivation: The Situational Motivation Scale (SIMS), Guay, Vallerand & Blanchard, (2000), explain this theory in a thorough and interesting way. The scale deals with motivation as a situation (or state) and is designed to assess the constructs of *intrinsic motivation* (autonomous), *identified regulation, external regulation* (controlled), and *amotivation* in field and laboratory settings. (Deci & Ryan, 1985, 1991). The overall results from five studies show that the SIMS is composed of 4 internally consistent factors. Past research in many areas confirmed the adequate factorial structure in internal consistency of SIMS (e.g. Guay et al., 2000; Standage et al., 2003).

Starting with the early works of the theory (see Deci and Ryan,1985, 1991) the authors refer to different types of motivation that underlie human behavior and points to the fact that diverse types of motivation are suggested to differ in their inherent levels of self-determination. Self-determination is understood as a true sense of choice, a sense of feeling free in doing what one has chosen to do. The

motivations are listed on a continuum from starting with *intrinsic motivation* on the low level and continues with respectively *extrinsic motivation*, and *amotivation* each on a higher level.

Intrinsically motivated behaviors are those that are engaged in for their own sake, in other words, for the pleasure and satisfaction derived from performing them (Deci, 1971, 1975).

Extrinsic motivation pertains to a wide variety of behaviors where the goals of action extend beyond those inherent in the activity itself where different types of extrinsic motivations can be ordered along the self-determination continuum (from lower to higher levels of self-determination, these are external and identified regulations).

Amotivation (Deci and Ryan, 1985) is a third motivational concept. In order to fully understand human behavior amotivation is needed. For example, amotivated individuals experience a lack of contingency between their behaviors and outcomes. Their behaviors are neither intrinsically nor extrinsically motivated. Amotivation is a sign of no sense of purpose and no expectations of reward or possibility of changing the course of events. It can be regarded in an analogous way as learned helplessness (Abramson, Seligman, & Teasdale, 1978) where the individual experiences feelings of incompetence and expectancies of uncontrollability.

Motivation and indeed amotivation constitute a complex entity in itself. Stress was confirmed to predict helplessness and negative affect, but could be counter predicted by amotivation. (Lindahl & Archer, 2013). A study on high-school pupils' amotivation proved to be multidimensional in the sense that there are four main reasons for amotivation:' Pupils' ability beliefs, pupils' effort beliefs, what value is placed on academic tasks? and the characteristics of the academic tasks' (Legault, Green-Demers, & Pelletier, 2006). High-school pupils' amotivation was shown to predict impulsiveness (Palomo, Beninger, Kostrzewa, & Archer, 2008a). Distractiveness and motivation may well have a complex interaction. For example, adolescent anxiety and distraction in the classroom are negatively associated with intrinsic motivation but positively associated with amotivation (Ratelle, Guay, Vallerand, Larose, & Senécal, 2007). Amotivation refers to a state in which individuals cannot perceive a relationship between their behavior and that behavior's subsequent outcome (Shen, Winqert, Li, Sun, & Rukavina, 2010).

In summary, the four types discussed i.e. *intrinsic, extrinsic, amotivation, and external regulation* are differently related to various types of outcomes. Self-determination has been hypothesized to be associated with enhanced

psychological functioning (Deci & Ryan, 1985; Ryan, Deci, & Grolnick, 1995). Thus one would expect intrinsic motivation to be mostly associated with positive outcomes (e.g., persistence) followed by identified regulation. Surprisingly, the results from many studies show that the most negative outcomes (e.g., depressive states) comes from amotivation followed by external regulation. These findings were achieved from several outcomes in various life contexts (Deci & Ryan, 1985; Vallerand, 1997)

Impulsivity

Impulsivity has been defined as 'a predisposition toward rapid, unplanned reactions to internal or external stimuli with diminished regard to the negative consequences of these reactions to the impulsive individual or others' (Moeller et al., 2001; Potenza, 2007). Impulsivity has a complex interrelation to different behavioral and psychophysiological correlates. (Barratt & Patton, 1983, Potenza, 2007). The problem of impulsive behavior seems to be a tendency to initiate a rapid behavior without any forethought of consequences (Evenden, 1999). The premature or inappropriate behavior may lead to destructiveness of oneself or other individuals (Chamberlain & Sahakian, 2007).

Recent research on the relationship of impulsivity to psychiatric disorders has been based on the DSM-IV diagnostic criteria. Although impulsivity is directly mentioned in the DSM-IV diagnostic criteria for several disorders and is implied in the criteria for others there has according to Moeller et al. (2001, 2011) until recently been little work on clarifying the role of impulsivity in psychiatric illness. One of the problems in studies on psychiatric patients is that although some examples of impulsive behavior are given in the DSM-IV, impulsivity is not explicitly defined. In the study by Moeller et al. (2001) the overall goal of the article was to provide a definition of impulsivity that can be used to bridge the gap between clinical work and research. They also aimed at discuss the relationship between impulsivity and several psychiatric disorders.

According to Moeller et al. (2001) the behavioral and pharmacological interventions that are effective for treating impulsivity should be incorporated into treatment plans for these disorders. There is a close relation between mechanisms of impulsivity and those of arousal and of physiological responses to stressors (Arnsten et al., 1999; Cameron et al., 2000). These relationships have important overlaps with the regulation of affect. Changes in affect may influence impulsivity in a potential way and this is true also in the opposite direction.

A thorough examination of impulsivity allows us to understand better the modes of normal behavior and action as well as a range of related psychiatric disorders.

Recent efforts in the areas of cognitive psychology, neurobiology, and genetics provided a greater understanding of these behaviors and have given way to improved treatment options (Archer & Bright, 2012). As Archer & Bright pointed out a variety of linear regression analyses based upon several self-report questionnaire studies, including a range of cognitive-emotional personal attributes, indicated that impulsiveness is predicted by negative affect, amotivation and depressiveness, and is counterpredicted by positive affect and internal locus of control in healthy volunteers (Palomo et al., 2008a, b; Miller et al., 2009). The influence of positive urgency, acting rashly under extreme positive affect, and negative urgency as central risk factors for impulsive and maladaptive behavior have also been discussed (Cyders and Smith, 2008a, b; Cyders et al., 2009, 2010; Swann et al., 2005; Zapolski et al., 2009).

A study by Adrianson et al. (2013) examines the emotion regulation strategies such as reappraisal and suppression presented by Gross and John (2003) and discusses the implications for affect, well-being and social relationships. It was found that reappraisal is associated with better interpersonal functioning, and that the employment of reappraisal is related positively to well-being, whereas using suppression is related negatively. A variety of linear regression analyses based upon several self-report questionnaire studies including a range of cognitive-emotional personal attributes have indicated that impulsiveness is predicted by negative affect, amotivation and depressiveness and counterpredicted by positive affect and internal locus of control in healthy volunteers (Palomo et al., 2008a, b; but see also Miller et al., 2009).

Locus of Control

During the last fifty years the concept of control was studied thoroughly in the field of psychology. LOC is a cognitive style or a personality trait characterized by a generalized expectancy about the relationship between behavior and a subsequent occurrence of reinforcement. People with *external* LOC tend to expect reinforcement as reward and punishment. People with *internal* LOC tend to expect reinforcements to be consequences of chance, luck, fate, or the actions of significant others. Between these two extremes lies a continuum of intermediate cognitive styles. The concept was introduced by E. Jerry Phares (1928-2007). In 1966 in the journal *Psychological Monographs* Julian B. Rotter (Rotter, 1966) introduced the internal-external scale to measure LOC. LOC is also the internal-external control of reinforcement.

Many behavior studies confirm that individual's perception of control impacts upon any activities pursued (Judge & Bono, 2001; Millet, 2005; Lefcourt, 1991). There are six theories in the center of the empirical works. The 'self-efficacy' of

Bandura (1997), 'causal attributions' of Weiner (1974, 1985), 'learned helplessness' of Seligman (1975), 'perception of control' of Langer (1983), 'personal causation' of De Charms (1986), and the theory used in this dissertation' locus of control'.

The first five theories are closely linked to LOC (Strickland, 1989; Skinner, 1995; Lefcourt 1991), however two aspects separate them from LOC. Firstly, they are based on motivational terminology whereas LOC is based on expectancy terminology and secondly LOC is used mainly as an attribute of personality (Millet, 2005), which separates LOC from other control theories. This component may explain the strong elements of stability and generalization.

Psychiatric disorders and mood

The interrelationship between chronic physical illness, depression or depressive symptoms has been associated with individuals' cognitive-emotional behavioral profiles that are linked to sets of psychosocial resources determining health outcomes (Endler and Parker, 1990; De Ridder and Schreurs, 1996; Zeidner and Saklofske, 1996; Endler et al., 2001; Bisschop et al., 2004). Depression is characterized by low levels of self-esteem, low levels and/or unstable self-esteem may offer an enduring vulnerability factor for depression (e.g., Teasdale, 1988; Butler et al., 1994; Roberts et al., 1995; Strauman and Kolden, 1997; Kernis et al., 1998; Frank and De Raedt, 2007). Lau et al. (2004) have found that important factors determining whether an initial depression becomes more severe or persistent are the degree of activation, and content, of negative thinking patterns that becomes accessible in the depressed state. This phenomenon has been referred to as cognitive reactivity.

In summary and as alluded to in the subsection on stress a healthy adaption when confronting a stress overload is important. Individuals who express high levels of self-esteem appear to possess both belief and expectancy regarding their own merits, abilities, strengths and competence (Baumeister, Bratslavsky, Finenauer, & Vohs, 2001; Rose, Endo, Windschitl, & Suls, 2008). Self-esteem was predicted by optimism and energy but counterpredicted by, anxiety, depression and stress (Archer et al., 2008).

Affective Deaf Syndrome and mood

This syndrome consists of interactions of communication difficulties due to deafness or hard-of-hearing, affective mood and psychiatric disturbances. Deafness and hard-of-hearing is not only a problem of hearing loss. Although deaf

patients enter psychological and psychiatric treatment with the same disorders as hearing patients, there are special circumstances that are created by their cultural background and position in society that may contribute to vulnerability (Hoyt, Siegelman, & Schlesinger, 1981; Philips, 1996; Williams & Abeles, 2004.

Many deaf individuals comprise a unique linguistic minority group where they identify themselves with the Deaf culture (Landsberger et al., 2013). These persons often express a locus of pride and identity with their Deaf culture. This is a two-sided issue, on one hand their self-esteem is high and they reject persons who are not part of the Deaf culture, on the other hand some complain about the Deaf society being too small, that everyone knows everyone and that this makes them feel trapped in their Deaf community. The deaf residential schools are often a significant step into this Deaf culture (Woll & Ladd, 2011). There is a great difference between the hard-of-hearing patients who more often identify themselves with the greater society and the deaf persons. Whether one prefers to be referred to as 'hard-of-hearing' or 'deaf' is a matter of self-identification and may depend on the early history of the individual patient and to their genetic family.

The 'deaf identity' is a complex, multifaceted complex. There is not a single 'deaf experience' but a membership that depends on shared values according to Landsberger (2013) 'including but not limited to respect and support for manual language, general dissociation from speech, and identification with, as well as a sense of pride in, associating with other deaf individuals'. While the majority of deaf people are mentally healthy and able to pursue self-actualizing lives psychological evaluations continue to be an area of concern due to the need for fluency for the deaf client's preferred language as well as the challenges in arriving at accurate diagnoses (see also Scheider, 2009). According to Leigh & Pollard (2011) there is now a new focus on treatment approaches that focus on cultural relevance. This is also observed in the instructions for Swedish psychiatric healthcare for the deaf (Psykiatristöd Stockholms Läns Landsting, 2016). Deafness and hard-of-hearing may lead to a heightened degree of stress, vulnerability and tiredness. Often the ability to reach health-care is restricted due to the difficulty of communication, which sometimes increases the risk of these persons to get the wrong diagnosis or being maltreated.

This group of deaf and hard-of-hearing individuals are more at risk of trauma and traumatic reactions than the general population (Pereira, 2010; Fellinger, Holzinger & Pollard, 2012; Landsberger et al., 2013; Ronnberg et al., 2013). Landsberger highlights the fact that children with disabilities are 3.4 times more likely to be abused than children without these difficulties and that deaf and hard-of-hearing children and adolescents may be twice as likely to experience different kinds of abuse and neglect. A recent study on traumatization in deaf and hard-of-

hearing adult outpatients was conducted on patients referred during an 18-monh period to a specialized psychiatric outpatient clinics for deaf and hard-of-hearing patients in Norway (Øhre et al., 2015). Among the results it was found that all patients reported traumatic events, and 85% reported traumatic experiences with clearly negative impacts. This is in accordance with our clinical experience from the specialized psychiatric deaf unit in Gothenburg. It is not uncommon that we have had to make social services aware of such suffering among our patients. Øhre et al. stated that the number of patients who reported the first trauma incident before the age of 16 years was the same (71%) both for patients who had lived at home and for those that attended residence school.

Schild and Dalenberg (2012) report that posttraumatic stress disorder (PTSD) is underdiagnosed in the deaf population, rrecruitment occurred in Southern and Central California at various Deaf organizations. They studied 79 deaf adults different check lists as the Clinician Administered PTSD Scale, the Life Event Checklist, the Trauma Symptom Inventory, the Peritraumatic Distress Scale, and the Somatoform Dissociation Questionnaire. The result was an average number of unique trauma types experienced per participant averaging 6.18 (*SD* = 2.65). They rate this as high. They conclude that findings supported the dose-response model for trauma. Vulnerability factors included number of traumatic events, race/ ethnicity, sexual orientation, additional disabilities, prior substance abuse, and low social support. They also found that higher levels of trauma exposure were associated with more depression, anger, irritability, sexual concerns, tension reduction behaviors, and substance abuse problems. The unique trauma symptoms of deaf trauma survivors, including higher levels of dissociation, are discussed. They confirm that even as research suggests vulnerability of the deaf community to trauma, very little data exists on prevalence, symptom manifestation, and/or unique characteristics of the response of deaf adults and children to traumatic events. One problem is that only about 20% of the patient group meets the criteria for PTSD because e.g. they don't clearly report the startle response and detachment from others. However, the result is often that the deaf and hard-of-hearing persons withdraw from society and from working life due to this and other difficulties. Isolation may occur and disempowerment. A concept of information deprivation trauma is introduced.

Mental health in deaf adults have been studied by Kvam, Loeb & Tambs, 2007. They report results from two Norwegian postal surveys. A hearing sample from 1995 to 1997 (Tambs, 2004) studied a random selected hearing population sample of 51,975 subjects 47% men and 53% women, mean age 50.2 years, *SD* = 17.0. they also used the Deaf Register, a voluntary register. The response rate was 46% (N = 431), 41% men and 59% women. The study was based on questionnaires translated into the Norwegian Sign Language. The results showed that a larger proportion of the hearing persons answered *not at all* to questions indicating

mental distress and the deaf persons answered *extremely* to the same questions. Both the hearing women and the deaf women were significantly more anxious than men. Those who became deaf at a young age expressed more feelings of hopelessness than those who became deaf later in life, but did not express feeling fearful or feeling blue significantly more than those who lost their hearing later in life. This study was not on clinical patients, but a study on those deaf patients who had signed up on the Deaf Register.

In an empirical Swedish study Backenroth-Ohsako, et al., (2003), using 'The Karolinska Scales of Personality' (KSP), a personality inventory (Schalling et al., 1987) showed that deaf individuals using control as a coping strategy had a higher anxiety total score (somatic anxiety, psychic anxiety, and muscular tension) and differed significantly from a healthy control sample of hearing persons. Persons rating high on the variable, psychastenia, presented the same results. It was found that the great fatigue at the end of the working day for the hearing impaired persons was due to muscular tension that was used to keep up the professional role at work. The authors have emphasized the detrimental psychological effects of unsuccessful coping with stress and anxiety as a result. This observation was confirmed by many studies both on stress (Hallberg & Carlson, 1993; Hétu et al., 1993, Thomas & Herbst, 1980) and on anxiety (Backenroth, 2001, Backenroth & Ahlner, 1997; 2000; Hallberg & Carlsson, 1993; Hétu et al., 1993). The struggle to communicate together with concerns of misunderstanding has been reported to result in physiological and psychological stress, elevated muscle tension, headaches, and exhaustion (Eriksen & Ursin, 2004; Fellinger et al., 2007).

The coping strategies used by hearing impaired persons are mostly either control or avoidance, a withdrawal from the social scene (Hallberg & Carlson, 1991; Hallberg 1992). To cope with the situation at work, disabled persons adopt roles (Hétu et al., (1993b). The disabled individuals may thus behave in one way at work and in another way with family and friends and this may lead to impairment. Deaf persons often want to spend their social life in the context of other deaf persons to be able to relax and be sure of no misunderstanding in conversations, which is common when hearing and deaf/hard-of-hearing persons communicate. The role of empowerment, self-advocacy, and social relations over life span are important aspects to consider for a healthy work life. Many disabled and employed individuals have higher average levels of social isolation and inactivity and lack meaningful work and leisure time activities than hearing persons (Lyons, 1993, Backenroth, 1996).

Williams et al. (2015) studied the relationship between hearing impairment and mental distress in 105 participants recruited from hearing-impaired adults, who signed up for a vocational stress-management program at The Norwegian Centre for Hearing Impairment and Mental Health. Objective hearing impairment was

moderate or less for 81% (n = 87) of the participants, and the correlation between subjective hearing disability and objective hearing impairment was not significant. The conclusions from the study were that symptoms of depression appear to be closely related to fear of negative evaluation by others and use of avoidant communication strategies.

The reality that the deaf and hard-of-hearing have communication problems with family and society, because of not being able to communicate with the dominant language of the society, may lead to isolation and further contribute to the heavy burden of the disability/impairment. In a recent clinical study in Norway comparing deaf (n = 40) and hard-of-hearing (n = 36) adult outpatients with mental disorders, the hard-of hearing-individuals have been reported to have more somatic complains and greater perceived social isolation than the deaf persons. This was interpreted to indicate a higher stress level and disorders in the hard-of-hearing group living in a predominantly hearing society (Øhre et al., 2016). Some individuals demonstrate a more positive self-esteem due to a balance between their involvement both in the deaf and the hearing world (Brubaker, 1994; Hintermair, 2008); Jambor & Elliott, 2005). At the core of deafness/hard-of-hearing lies a communication problem with the hearing community. This handicap may be important for the development of the clinical profile of individuals with deafness/hard-of-hearing as well as the affective profile. There are some indications that self-esteem may predict positive affect for this patient group and may be identified as a protective factor (Zöller & Archer, 2015).

In a Swedish 12-year follow up population-based cohort study the future risk of disability pension among people with sickness absence due to tautological diagnoses was studied (Gustafsson et al., 2011). The rate of adults with self-reported hearing difficulties was 10.7% 15-20 years ago (1986-93) (Rosenhall et al, 1999); Statistiska centralbyrån, 2006) and in 2006 it had risen to 14.1% (Statistiska centralbyrån, 2006). The conclusion from the study (study period 1985-1996) was that the risk of future disability pension was 40% higher among those initially on sickness absence due to hearing disabilities than among other sickness absentees. Furthermore, the risk was higher among women with hearing disabilities. The authors further conclude that more knowledge is warranted to understand the aspects leading to marginalization among people with hearing difficulties so that preventive actions can be taken already during working life.

This dissertation examines some key issues for the combined mental distress of hearing disability, psychiatric disorders and affective mood. Earlier studies of affective mood and psychiatric illness including patients with deafness and /or hard-of-hearing reported conflicting results. For example, Grinker et al. (1969) studied the mental needs of deaf individuals in the Chicago area. The study involved 159 patients (38 inpatients and 121 outpatients) and the result was that

among deaf psychiatric ill persons as much as 50% of the precipitant causes of the patients revolved around early traumatic physical injuries, operations, or fear of separation from significant relationships. In what was termed 'traumatic injury,' Grinker et al. noted that 21 % of patients displayed disturbed behavior. In a more recent archive study data were obtained from 64 discharged adult patients at the Deaf Unit of Westborough State Hospital in Westborough, MA, USA, between 1999 and 2004 Black & Glickman (2006) found a broader range of diagnoses than past studies with posttraumatic stress disorder being the most common diagnosis. Compared with hearing patients, the deaf patients were less likely to be diagnosed with a psychotic or substance abuse or disorder and more likely to be diagnosed with a mood, anxiety, personality, or developmental disorder. An important finding (Black & Glickman, 2006) was that 75% of deaf individuals fell into the non-fluent range of communication in American Sign Language.

Mood disorders and substance abuse were diagnosed infrequently in past research (Pollard, 1994). The literature does not give indications of a higher prevalence of substance use among deaf persons (Fellinger et al., 2005). One reason for this situation may be that diagnosis assessments was not performed by a psychiatric team specialized in the diagnosis assessment and treatment of deaf and hard-of-hearing patients at a Deaf Unit, but by psychiatrists and other co-workers in general wards not specialized on deaf persons (Landsberger, 2013).

Very few outpatients studies have been done of the adult deaf and hard-of-hearing psychiatric population, and those who have been conducted have mainly used archival data. However, recently two empirical manuscripts have been published Øhre et al., 2015 and 2016. These studies used versions of the Mini International Neuropsychiatric Interview (MINI), the Symptom Check List-25 (SCL-25), and the Global Assessment of Functioning scale (GAF). To my knowledge there has not been any studies on the affective profiles of deaf and hard-of-hearing psychiatric patients except Zöller et al., (2015, 2016). Structured assessment of affective mood and mental distress in deaf and hard-of-hearing individuals is difficult for various reasons. The combination of the complex interaction of affective psychiatric disorders and self-rated affective mood in psychiatric patients with deafness/hard-of-hearing has been termed the Affective Deaf Syndrome (Zöller & Archer, 2015).

Gender and Affective Profiles

Gender and affective profile poses indeed a difficult question also among non-psychiatric patients. It has been demonstrated that female participants display

more negative health symptoms (Wilson et al., 2005). Karlsson and Archer (2007) found distinct gender effects in their studies of positive and negative affect. Female participants expressed higher levels of responsibility and vigor, greater emotional coping and higher level of energy as well as higher levels of negative affect, stress and Type A-personality. Andersson Arntén (2009) studied the effect of gender in 212 employees, (135 males and 77 females). Women expressed significant higher levels than men for the following variables: anxiety, stress and psychological subjective stress experience but also for energy. No significant gender effects were registered neither for depression, somatic subjective stress experience, positive and negative affect nor for dispositional optimism.

When using the median split model, women recall experiencing negative affect to a larger extent compared to men, and men recall experiencing positive affect to a larger extent than women (e.g. Crawford& Henry, 2004; Schütz, 2015). Despite this fact suggesting clear general differences in affectivity between men and women, past research using the median split has not found interaction effects between the type of profile and the person's gender on well-being and ill-being (see Garcia, 2011). Garcia states that while it is plausible to suggest that the differences in affectivity between profiles overrule possible gender differences (Garcia & Siddiqui, 2009; Garcia 2011), it might be so that this lack of finding depends on the choice of method to create profiles. However, when using the median splits and cluster analysis approaches both allocated females to a self-destructive profile more often than chance and males less often than chance to the same profile.

Aims

The overall aim of this dissertation was to explore how attributes may modulate affective profiles in psychiatric patients. It studied the influence of an affective personality type, affective state and mood upon self-reported indicators of psychological health in adult hearing and deaf and/or hard-of hearing patients presenting psychiatric symptoms.

The Affective Profile Model offers an exceptional way of reaching beyond a single dimensional framework of affectivity by taking into account how dimension, positive affect and negative affect, interact. These interactions may offer help to discern individual differences in cognitive and emotional aspects of health and well-being as well as in illness and ill-being. However, there is a scarcity of studies on positive and negative affect and the affective profile using PANAS when clinical samples of psychiatrically ill patients are concerned. Furthermore, there are even fewer studies with psychiatric deaf and hard-of-hearing patients using this method. This is the main reason to conduct this study as it will give an opportunity to fill a gap in the knowledge of how attributes may modulate affective profiles in psychiatric hearing and deaf/hard-of hearing patients.

The ultimate aim of this research was to improve the well-being of psychiatric patients, and as there is a huge amount of results from psychiatrically non-clinical samples, the results of this dissertation will also be discussed in relation to results from non-clinical groups in order to obtain information from aspects of well-being that might be missing in patients with clinical disorders.

Study I and II included patients in general psychiatry, and study III and IV included patients from specialist psychiatry for deaf and hard-of-hearing patients.

Study I examined the influence of an affective personality profile upon self-reported indicators of psychological health in adult patients presenting psychiatric symptoms and identified the factors predicting positive and negative affect respectively. But also, compared self-rated affect as indexed by stress, energy and dispositional optimism as life orientation among patients with a healthy norm group.

Study II aimed at examining to what extent affective state and mood were predictive of the stress experience in both psychiatric patients and healthy volunteers and further determined whether or not gender effects were present.

Study III investigated emotional disturbances by deaf and hard-of-hearing patients as expressed in the Affective Deaf Syndrome. This syndrome consists of complex interactions of communication, impaired affective mood and psychiatric disturbances. The first aim was to clarify the level of communication problems. The second aim was to study the differences in affective mood between a patient group with deaf/hard-of-hearing patients and a healthy control group. The third aim was to identify predisposing and protective factors for ill-being in the patient group by identifying key attributes for the identification of patients at risk.

Study IV examined the differences between attributes associated with positive mood and attributes showing an association in deaf/hard-of-hearing patients with psychiatric disorders.

Methods and Materials

Ethical statement

The ethics protocol of Sahlgrenska University Hospital was applied and maintained for patients and healthy controls. For studies I and II approval was obtained from Göteborgs Universitet, Medicinska fakultetens forskningskommitté [Medical Faculty Research Committee] on the 28th of January 2002, number Ö 676-01 and for studies II and IV from Regionala etikprövningsnämnden i Göteborg [Regional Ethical Inquiry Committee in Gothenburg] on the 16th of July 2014, number 353-14. The protocol guaranteed total anonymity of results for both groups. The patients and the volunteers signed an informed consent prior to participation inclusive of a possibility to disrupt the study at any time without giving a reason.

Participants

The patient group (Study I and II)

One hundred psychiatric patients, 42 women and 58 men, at age *M* = 38.9 years (*SD* = 12.4; *range* = 21-71), while for the 42 men, mean age was 39.3 years (*SD* = 11.9; *range* = 21-65), and for the 58 women, the mean age was 38.5 years (*SD* = 12.8; *range* = 21-71) were assessed consecutively over a 1-year period at an outpatient ward at the Sahlgrenska University Hospital, Göteborg, Sweden by one of the authors (M. Zöller). All new patients were invited to take part in the study. This was done at the first meeting with the psychiatrist. All patients agreed to participate in the study. There were no exclusion criteria because only patients with affective disorders were referred to the outpatient ward. The group fulfilled the psychiatric diagnostic criteria (DSM-IV-R and ICD-10) for Major Depressive Disorder 54%, Anxiety Disorder 37%, and a mixed group 9% including Bulimia nervosa, Polymorph psychosis and Attention Deficit/Hyperactivity disorder (ADHD). Almost one third of the patients had a second Axis I disorder i.e. a double diagnosis, 15% of the men and 17% of the women.

The rating scales for background information are: *The Comprehensive Psychopathological Rating Scale.* (Åsberg, Perris, Schalling, & Sedvall, 1978; Svanborg &Åsberg, 1994, 1991). And *Questionnaire (DIP-Q) (Study I and II)* is a patient self-estimation scale (Bodlund et al, 1998; Ottosson, 1999; Ottosson, Grann, & Kullgren, 2000). Table 1 presents background variables and table 2 correlations for GAF year and CPRS-Depression.

Table 1. Background variables CPRS, DIP-Q and GAF for patients and healthy controls in study I and II

CPRS self-report, patients *M (SD)*	depression 23.4 *(10.6)*	anxiety 23.4 *(10.2)*	compulsion 16.5 *(12.4)*	psychoses 5.2 *(6.4)*
Heredity 1st grade relative, patients *(%)* men/women	36/42			
DIP-Q *(%),* patients, men/women	cluster A: 7/15	cluster B: 19/19	cluster C: 4/9	
DIP-Q, >2 general criteria, patients *(%),* men/women	54/48			
DIP-Q>2 general criteria, healthy controls (%), men/women	20/12			
DIP-Q Personality disorders, patients (%), men/women	1 Diagnose 74/79	2 Diagnoses 45/60	3 Diagnoses 36/48	4 Diagnoses 26/26
GAF < 70, patients (%), men/women	47/36			
GAF <70, healthy controls (%), men/women	12/5			

Table 2. GAF Year and CPRS-Depression correlated to variables pertaining to self-reported indicators of physiological health for a group of 201 persons (psychiatric patients, 101 healthy controls). Pearson Correlation and Significance (2-tailed)

	GAF Year	**CPRS-Depression**
LOT	0.329; p<0.001	-0.403; p<0.001
PA	0.416; p<0.001	-0.486; p<0.001
NA	-0.381; p<0.001	0.390; p<0.001
Stress	-0.478; p<0.001	0.524; p<0.001
Energy	0.278; p<0.001	-0.383; p<0.001

The Norm Group (Study I)

The patients were compared with a norm group comprising 1925 healthy individuals who completed the questionnaires anonymously. At the time of testing each person was an unpaid healthy volunteer. The individuals were included by one of the authors (Karlsson & Archer, 2007). All volunteers were later included in a lager study.

The Control Group (Study II)

The control group consisted of 101 persons who completed the same instruments as the patient group. The participants were healthy persons (as evidenced by the occupational health unit) recruited on a volunteer basis from the Volvo car factory and other private companies. The human resources department helped to find persons for the control group that matched in gender and age to the patient group. The control group had no psychiatric diagnoses and had no known heredity for psychiatric disorder, and was not on any medication. Mean age for the healthy control group was M = 38.3 years (*SD* = 13.7; *range* = 20 – 71), 51 persons were men M = 38.1 years (*SD* =12.8; *range* 20 - 67) and 50 were women M = 38.5 years (*SD* = 12.8; *range* 21-71). Background variables were: post high school education M = 3.6 years (*SD* = 3.6; *range* 0 - 12), employment = 100%, alcohol

as beer/wine less than once a week, liquor four times weekly, cigarette smoking = 27%, and physical exercise 3 times a week.

The patient group (Study III and IV)

The patient group included 52 patients, 33 deaf and 19 hard-of-hearing (including a few relatives who also received treatment at the unit), the group consisted of 10 men and 42 women with a mean age of 42.6 years (*SD* = 12.7; *range* = 21-71). The study was conducted at the special unit for deaf and hard-of-hearing patients at the Gothenburg University hospital. The exclusion criteria were psychotic disorders, mental retardation, and when the patients were considered by the clinicians as unfit to take part in the study. The neuropsychological assessment was performed by the neuropsychologist at the ward. The patients fulfilled the (DSM-IV and ICD-10) criteria for the following psychiatric conditions: Major Depressive Disorder 43%, Anxiety disorder 33%, Trauma- and Stressor-related disorder 33%, Attention Deficit/Hyperactivity disorder 21,4%, Obsession-Compulsive disorder 12%, Schizotypal personality disorder 7%, Autism Spectrum Disorder 21%. Personality disorder cluster B = 5%, Substance-Related and Addictive disorders = 5%. Forty-two % of the patients fulfilled more than one diagnosis. Mean exercise 3 times/week (*SD*=1.1, *range* 0-7). Alcohol mean 3.7 units (*SD* = 8.6, *range* = 0 - 40). Number of cigarettes/day mean 2.2 (*SD* = 4.5, *range* = 0-15).

The control group (Study III and IV)

The number of healthy controls were 116 participants, 41 men and 75 women, with a mean age of 46.5 years (*SD* = 13.8; range 19 – 75). Each participant was asked to complete a battery of psychometric test instruments as well as a Background and Health Questionnaire. Mean exercise 3 times/week (*SD*=0.8, *range* 0-7). Alcohol mean 6.6 units (*SD* = 6.6, *range* = 0-63.6). Number of cigarettes/day mean 0.8 (*SD* = 3.2, *range* = 0-20).

Procedures

All patients were in their habitual psychiatric state. Most patients had been treated by medication and /or psychotherapy for some period prior to the study. The patients with hearing loss ranged from very severe to total loss of hearing. The Swedish Sign Language (SSL) was used when needed and was offered by trained translators who helped the same patients with interpretation also outside the study. The healthy volunteers were not paid for their participation.

Two different patient groups were compared to either a norm group (study I) or to a control group (studies I-IV). The patients were recruited consecutively from the University Hospital in Gothenburg, Sweden from an outpatient ward for

general psychiatry (study I and II) and also from an outpatient ward for specialist psychiatry for deaf/hard-of hearing.

The procedure for the patients was similar in all four studies. All clinical diagnoses according to the DSM and ICD systems were formally made by an experienced psychiatrist/psychologist (M. Zöller, senior consultant psychologist and senior consultant psychiatrist, PhD) who also was responsible for the psychiatric care of the Deaf Unit of the University. Nevertheless, the diagnoses were established at meetings of the psychiatric team to ensure that all the information gathered from the patients was applied. All the patients were informed that they could leave the study at any time.

The psychiatric examination builds upon earlier experience from the same clinic from a study of a 12-year follow-up of patients with Neurofibromatosis I (Zöller, 1997). Similar psychological instruments were used in the studies of this dissertation and worked well in research as well as in clinical praxis, in which it has a natural place in the diagnostic part as well as in the treatment of the individuals' symptoms.

The psychological instruments were used by patients already well-known at the clinic where they already have shared their life history, their problems and agony of life. They were all in a state free of psychiatric symptoms during the study and had already taken part in individual psychotherapy, individual or family counselling if they chose to do so. Medication at the time of the study was at a very low level and many patients did not choose medication. The approach to the individuals at the unit is family centered and also relatives and close friends are welcome to a family treatment or could choose individual talks with the psychiatric team However they were not invited to take part in the study.

The two groups of patients were treated in a similar way and at the same clinic. All patients were invited to participate in the study during one year. They were familiar with the psychiatric team. The procedure was the same for the two groups apart from the need of the deaf/hard-of-hearing individuals for interpreters. Although the psychiatric group members of the deaf unit know the Swedish Sign Language (SSL), official interpreters were required to give the patients their fundamental right of an interpreter as the Swedish sign language is an official language in Sweden.

The reason for having different sizes of patient groups is that we need the double amount of time when we interact with deaf/hard of hearing patients and thus in a year only half as many of these individuals could take part in the study. We felt it advantageous to use the same period to collect data thereby accepting a lower number of patients in the deaf/hard of hearing group rather than using a two-year

period. As all patients were invited to take part in the study there was no way to increase the number of patients. The selection of psychological instruments was made to address the research questions on how attributes are modulating affective profiles in psychiatric patients.

Firstly, a medical interview and physical examination was carried out and then the patients completed the questionnaires in question. The patients were examined physically according to clinical routine standards including pulse rate (PR), blood pressure (BP), heart rate (HR), weight, height and neurological status. Medication was recorded. The specialist team for deaf/hard-of-hearing consisted of a psychiatric consultant, a psychologist, an occupational therapist, a social counsellor and a specialist nurse and the team has established expertise in clinical treatment of deaf people for several years. They all worked with interpreters using the Swedish Sign language (SSL), who regularly worked with the clinical team specializing in psychiatric care of deaf people and thus were well known to the patients. There was a problem to present the questions so that they were understood by patients not knowing the Swedish language and only having rudimentary knowledge by the SSL. This included a degree of translating and interpreting the questions and answers which are part of the problem of loss of hearing. The patients had the possibility to use text message (SMS) if they had any further questions or wanted to interrupt the study the procedure. Only patients who were able to fully comprehend the questions were included. Consequently a few patients with severe mental retardation were not included in the study. Apart from two deaf patients all patients were willing to take part in the study.

All individuals in the norm group were seen in groups of 3-to-8 individuals with the researcher and asked to complete a form. They were unpaid and were recruited in classrooms or at workplaces. At the time of data collection, the norm group was not involved in any other type of study. People belonging to the norm group, all reported themselves healthy and were given the same questionnaires as the patients. The healthy individuals of the control group (in study II) were selected from the personal administration of a work place and had to meet the inclusion criteria of health, age and background factors thereby matching the patient group. They were seen in groups at their work place where also questionnaires were completed. The control group of study II and IV were selected to be close to the patient group regarding socio-economic status and age. The schedule for data collections is presented in table 3.

Table 3. Schedule for data collections

Background Questionnaire type I	Background Questionnaire type II	CPRS, DIP-Q	PANAS	SE	LOT	SES	BIS, LOC, SIMS
Study I		Study I	Study I	Study I	Study I		
Study II		Study II	Study II	Study II	Study II		
	Study III		Study III			Study III	
	Study IV		Study IV	Study IV	Study IV		Study IV

Instruments

The self-evaluation questionnaires used were chosen to give a flexible and comprehensive adjustment to clinically questions and issues. They all had a statistical, structural and dynamic basis. Characteristics of negative aspects as also positive aspects were measured by the questionnaires. The goal in this study was to use psychological diagnostic tools as a basis for treatment if suitable.

Positive Affect and Negative Affect Scales (All studies)
The PANAS instrument is a self-evaluation instrument that estimates the degree of affectiveness, whether as negative or positive affectiveness (Kercher, 1992; Varg, 1997; Watson, Clark, & Tellegen, 1988). The adjectives describe feelings (affect) and mood level (Watson & Clark, 1994). Response alternates were presented on a 5-grade Likert scale, extending from 1 = not at all, to 5 = very much. The test person should tell how he felt last week. The negatively charged adjectives were summarized to provide a final NA result and the positively charged adjectives a PA result. The results on the PA-scale was divided into two parts and thereby distributing the participants into one group with high PA and another group with low PA (cut off point = 53.2%). The same procedure was utilized or the participant responses on the NA-scale (cut-off point = 48.9%). Following this procedure, the results from the two scales were combined assigning each participant into one of the four affective personality categories, as follows: individuals showing high PA and low NA (self-fulfilling), high PA and high NA (high affective), low PA and low NA (low affective) and low PA and high NA (self-destructive). Currently, the notion of affective profiles was applied to describe participants' expression of mood state (Garcia et al., 2014; Schütz et al., 2013). In the present material, internal reliabilities (Cronbach's *alpha*) were 0.88 for Positive affect and 0.82 for Negative affect. Affective mood, which is defined as (Positive affect/ Negative affect) *100 = .88 (Chronbach's α).

Stress-Energy (SE) (Study I, II and III)
The SE-instrument is a self-estimation scale that during the preceding ten minutes assesses an individual's experience of own stress and energy (Kjellberg &

Iwanowski, 1989). The test is divided into two sub-scales that express each participant's level of mood in two dimensions: 'experienced stress' and 'experienced energy'. Response alternatives follow six-graded scales that extend from 0 = not at all to 5 = very much. The experienced 'neutral-point' within the Stress scale (i.e. neither stressed nor calm) lies on average at 2.4, whereas the equivalent point for energy is at 2.7 (Kjellberg & Iwanowski, 1989). *Stress and Energy* (SE). Se paper I and II. The internal consistency for stress = .90 (Chronbach's α) and energy = .75 (Chronbach's α).

Life Orientation Test (Study I, II and IV)
The LOT-instrument is a self-estimation instrument that assesses an individual's degree of dispositional optimism. The instrument is based on a general model, regarding self-regulated behavior, which indicates that optimism exerts meaningful behavioral consequences (Scheier & Carver, 1982, 1985, 1987, 1992; Scheier et al., 1989, 1999; Segerstrom, 2005). The instrument as revised in 1994 (Scheier, et al., 1994) has eight items, plus four filler items. The task for each respondent is to decide on a scale anchored by 0: strongly disagree and 4: strongly agree. Internal consistency was .76 (Chronbach's α).

Background and Health Questionnaire type II (Study III and IV)
Includes age, gender, partnership, number and age of own children, years of education after the mandatory nine-year education, smoking and drinking habits, pain, sleeping problems, physical exercise, television hours/day, percentage of sedentary work, self-evaluation of general health, use of mood-enhancing drugs and analgesics, height, weight and waist circumference were completed according to the description and procedure outlined by Palomo et al. (2008b).

Rosenberg's Self-esteem Scale (SES) (Study III)
The Self Esteem Scale is a self-estimation, 10-item questionnaire which was constructed to measure the extent to which individuals consider themselves 'sufficiently functional' (Rosenberg, 1965). Self-esteem is measured using 10 items (statements, each item rated on the four point Likert scale, 1 = 'agree completely' and 4 = 'disagree completely') concerned with feelings about oneself and one's attitude towards one's resources, relations to others and achievements, whereby half the statements express positive aspects about self and half express negative aspects. The reliability of the test was determined to be .86 and it was only weakly correlated with age, education, and general intellectual performance (Fitts, W. H. 1965). The internal consistency in our studies was .85 (Chronbach's α).

Barratt's Impulsiveness Scale (BIS-11) (Study IV)
BIS 11 is a questionnaire released in 1995 to assess the personality/behavioral construct of impulsiveness (Patton et al., 1995). This scale uses the word

impulsiveness rather than the more general term impulsivity. It is the most widely quoted instrument for the assessment of impulsiveness that has been used to advance our understanding of this construct and its relationship to other clinical phenomena for 50 years (Stanford et al., 2009). Participants respond to statements on a 4-point scale. 'Rarely/Never' – 'Occasionally' – 'Often' – 'Almost Always/Always', whereby 16 out of the 25 items express impulsiveness such as 'I do things without consideration', or 'I act impulsively, and, conversely, 9 out of 16 items express non-impulsiveness, such as 'I have good self-control', or 'I plan for the future'. Nine of the twenty-five items are formulated to express scores of 'non-impulsiveness' thereby providing a reverse order, avoiding response bias, and sixteen items provided direct scores of impulsiveness.

The Barratt Impulsiveness Scale 11 – has three second order factors these are: distractiveness, motor impulsiveness and nonplanning impulsiveness each is also divided into two 1st order factors. In our study we found distractiveness $\alpha = .41$ the two 1st order factors attention $\alpha = 0.16$ and cognitive instability $\alpha = .55$. The second order motor impulsiveness $\alpha = .60$ is divided into 1st order of motor $\alpha = .55$ and perseverance consisting of only one variable. The second order nonplanning impulsiveness $\alpha = .60$ is divided into self-control with $\alpha = .56$ and cognitive complexity consisting of only two variables. The reliability of the whole questionnaire without the subdivisions into the 2nd and 1st order factors was $\alpha = .57$.

Locus of Control (LOC) (Study IV)
Locus of Control was measured using a modified version (Millet, 2005), using an abbreviated version of the Rotter scale (Rotter, 1966), and further developed (Andersson, 1976), for use mainly in Swedish work settings. The scale has a minimum score of 8 and a maximum of 40, with a lower score representing an external locus of control orientation and a higher score representing an internal locus of control orientation. In the current study the score was reversed for four of the 8 items (on a 5-point scale) to enable recalculation to represent External locus of control (Chronbach's $\alpha = .70$).

Situational Intrinsic Motivational Scale (SIMS). (Study IV)
The present version of SIMS included four items for each factor, *e.g.*, *intrinsic motivation*: 'Because I think this activity is interesting', *identified regulation*: 'Because I am doing it for my own good', *external regulation*: 'Because I am supposed to do it', and *amotivation*: 'there may be good reasons to do this activity, but personally I don't see any'. The statements have seven response alternatives [1 = not at all, 2 = very little, 3 = a little, 4 = moderately, 5 = enough, 6 = a lot, 7 = exactly] that provided the eigenvalues of 5.70, 2.63, 1.33, and .73, for each factor respectively. It was shown (Guay et al., 2000) that perceived competence, concentration and behavioral intentions of future persistence toward the activity

were associated with SIMS factors according to the self-determination continuum and specific and positive interrelations between Academic Motivation Scale factors (Vallerand et al., 1989) and the SIMS factors. The internal consistency (Chronbach's α) in our study for the four factors were: *intrinsic motivation* = .87, *identified regulation* =.81, *external regulation* = .82, and *amotivation* = .74.

Data Analyses

Study I

Pillai's Multivariate Analysis of Variance (MANOVA) was applied with affective personality and gender as independent variables and with stress, energy and LOT as dependent variables, one-way ANOVA was performed likewise. A linear regression analysis was conducted to determine to what extent positive and negative affect may be predicted from the dependent variables.

A non-parametric chi-square test was carried out to compare the patient population and the norm group with regard to the dependent variables. Follow-up ANOVAS were conducted on the variables in question.

Study II

One-way analysis of variance (ANOVA) and descriptive statistics were used. Pillai's MANOVA was applied with type of group (male patients, female patients, male controls, female controls) as dependent variables and PA, NA, and CPRS as independent variables. Linear regression analyses were performed for females and males on LOT, PA, NA, DIP-Q, (GAF General Criteria and GAF-year) and CPRS.

Study III

Data were analyzed using SPSS version 20 software. Pillai's MANOVA was applied with type of group and gender as independent variables and with stress, energy, and number of cigarettes/day, pain, analgesics, television, self-esteem and affective mood as dependent variables, a correlation analysis was performed and one-way ANOVA was carried out likewise.

A linear regression analysis was performed to examine to what extent affective mood may be predicted from the dependent variables. A nonparametric chi-square was carried out to compare the patient population and the healthy controls to the patient population and the controls with regard to the dependent variables.

Study IV

Data were analyzed using SPSS version 20 software. Pillai's MANOVA was applied with type of group as independent variables and with dispositional optimism, external locus of control, internal locus of control, motor impulsiveness, identified regulation, external regulation, amotivation,

distractiveness, motor impulsiveness, non-planning impulsiveness and positive mood as dependent variables. Data were analyzed with MANOVA rather than multiple ANOVAS because the MANOVA also determines the interactions occurring among the dependent variables.

One-way ANOVA was performed to analyze mean differences between the patient group and the healthy volunteers' group. A linear regression analysis was used to assess to what extent positive mood may be predicted from the dependent variables.

Results and Discussion

Study I

Self-Rated Affect Among Adults Presenting Psychiatric Diagnosis
The aim was twofold. Firstly, to examine the influence of an affective personality profile upon self-reported indicators of psychological health in 100 adult patients presenting psychiatric symptoms and to identify the factors predicting positive and negative affect respectively. Secondly, it aimed at comparing this patient group with a norm group comprising 1925 healthy individuals on self-rated affect as indexed by stress, energy and dispositional optimism. To do so all participants completed the Health and Background Questionnaire, DIP-Q, GAF (Global Ability of Function), PANAS (positive affect and negative affect), LOT (optimism), and Stress-Energy. The group fulfilled the psychiatric diagnostic criteria (DSM-IV-R and ICD-10) for Major Depressive Disorder 54%, Anxiety Disorder 37%, and a mixed group 9%.

The main finding was that it appears that both negative affect ($p<.001$) and stress ($p<.001$) are expressed overwhelmingly in patients presenting psychiatric symptoms. Depression, anxiety (see table 3) and low level of GAF <70 (83% of the patient group and 17% of the healthy controls) may be some of the reasons of this result. Considering the results of the Health and Background Questionnaire from the patient group this is what could be expected.

The result of all the participants indicated a significant effect of affective personality ($F(24, 26) = 7.35$, $p<.0001$, *power* = 1.0) but not for gender ($F(8,65) = .63$, $p>.7$, *power* = .28) nor any affective personality x gender interaction. This result was not expected because the women expressed more psychological disturbances (GAF<70 or general criteria $\geq$ 2) 61% compared to men 48%. Women have expressed a somewhat more negative psychological profile in other studies (Wilson et al. 2005). A recent study (Langvik et al. 2016) has indicated that women in non-clinical environment may present more negative scores on PANAS-NA. No significant gender differences were observed in extroversion and positive affect.

The Affective Personality for the patient group (n = 100) was studied in its detail. Most of the patients belonged to the Self-Fulfilling group (n= 36) and the Self-Destructive group (n = 34). The results found was that the ***SF group*** (self-fulfilling) differed markedly ($p<.001$) from the HA (high affective), LA (low

affective) and the SD (self-destructive) group with a *greater area under the curve, AUC* (i.e. positive affect, energy, non-stress, non-negative affect, energy-stress quotient and optimism). It differed furthermore from the HA ($p<.05$) with *less NA and less Stress* and from the SD ($p<.05$) group with *less NA and less Stress,* but with more *PA and more optimism.* The results also pointed out that the ***LA group*** differed ($p<.05$) from the HA and SD group with *less NA and less Stress*. As a conclusion it can be emphasized that the healthiest groups were the SF group and the LA group. Both these groups contain low levels of negative affect and stress. This may indicate that these persons have less anxiety and less depression thus having a higher degree of well-being.

Results also indicated that positive affect was predicted by dispositional optimism and energy whereas stress was counter-predictive. Conversely, negative affect was predicted by stress whereas dispositional optimism, energy and pulse were counter-predictive. It may be reiterated that optimism, like self-esteem, has been shown to predict expected challenges and are associated with somatic health (Scheier & Carver, 1982). The present results are in agreement with studies confirming that dispositional optimism is directed towards expectancies and the future and in combination with lower levels of stress offers important markers for psychological health (Robinson-Whelen, Kirn, MacCallum, & Kiecolt-Glaser, 1997; Scheier, Carver, & Bridges, 1994).

The patients' health status was assessed through analysis of the AUCs with regard to positive affect and 'non-negative' affect, energy and 'non-stress', energy-stress quotient and dispositional optimism. This health hexagon demonstrates the markedly greater AUC of the 'self-fulfilling' in the patient group, particularly 'non-negative' affect and 'non-stress'. Reductions in the health AUC, as exemplified in patients presenting the 'self-destructive' profile, are notable with particular regard to 'non-negative' affect and 'non-stress'.

The second purpose of the study was to compare self-reported affect as assessed through self-estimated stress, energy and dispositional optimism among psychiatric patients with a healthy volunteer norm group, for this purpose, the AUC was used. A nonparametric χ^2 was carried out to compare between the patient population $n = 100$ and the norm group $n = 1925$ with regard to the dependent variables: PA, Stress, Energy, NA and LOT, resulting in a significant overall effect ($\chi^2 = 216.33$, $df = 55$, $p=.001$). Follow-up ANOVAs were conducted on the respective variables. There were between-group effects for the following variables: PA, Energy, LOT, NA and Stress.

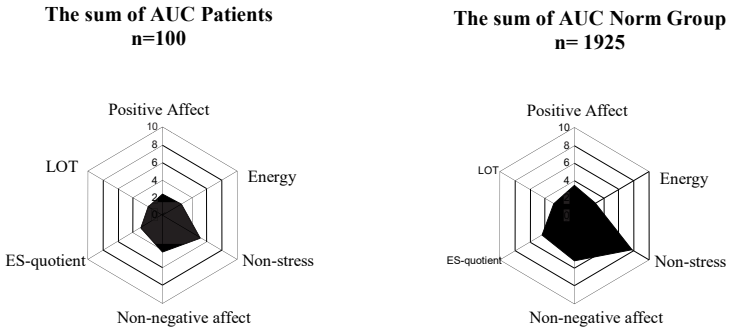

Figure 1. 'The Health Hexagon'. Areas under Curve (AUCs), presenting an overall assessment of psychological health for the sum of the 100 patients $M = 30.9 \pm 37.7$ units and for the norm group of 1925 individuals $M = 43.4 \pm 38.2$ units.

The present study indicated that the patient group and norm group differed considerably over all the variables assessed, particularly regarding self-reported energy. (See figure 1).

Depression, anxiety and low level of GAF may be some of the reasons of this result. Considering the background data from the patient group where the psychiatric diagnosis mainly were major depressive disorder and anxiety disorder this is what could be expected. There has been indicated that there are plausible links between negative affect, anxiety and depression and lack of self-esteem (Archer et al., 2008). These data fit well with earlier observations (Dua, 1993). Anxiety has been considered as a state of high negative affect and depression as a mixed state of high affect and low positive affect (Clark & Watson, 1991).

Taken together, the results of the outpatient group and the norm group are reconcilable with several other observations in illustrating the complex associations between affective personality, stress, energy and dispositional optimism, not least in possibly underlying comorbidity (Palomo et al., 2007; Schütz, 2015). It is possible that, as shown above, the ability to achieve 'non-negative' affect and 'non-stress' states, i.e. inhibiting negative affect and stress, bears greater health outcome than positive affect. Optimism appears to function as a protective factor, as implied previously.

Study II

Predicting Stress in Male and Female Psychiatric patients and Healthy Volunteers

This study aimed at examining to what extent affective state and mood were

predictive of the stress experience in both psychiatric patients (n= 100) and a healthy control group (n= 101) and at determining whether or not gender effects were present. The participants answered the Background and Health Questionnaire, DIP-Q (GAF-year and general criteria), CPRS, LOT (optimism), Stress-Energy and PANAS.

Results indicated significant influence of psychiatric symptoms (patients and controls) (p<0.001) between the groups for all the variables.

The patients presented a GAF-year mean value of 56.49 (±18.64), thereby placed in the group 51- 60 which implies moderate symptoms or moderate difficulty in social, occupational or school functioning; in contrast, the healthy control group presented a mean value of 82.62 (±16.85), thereby placed in the group 81- 90 which implies transient symptoms, if any, and few expectable reactions to psychosocial stress, and no more than slight impairment, if any, in social, occupational or school functioning. The number of GAF-general criteria presented by the patient group were below 2 (1.77 ± 1.52) whereas the control group presented a mean value under 1 (0.60 ± 1.15).

The patients' results pertaining to mean values for CPRS-Depression (23.36 ± 10.63), CPRS-Compulsion (16.50 ± 12.36) and CPRS-anxiety (23.43 ± 10.17) also indicated the expected levels for a psychiatric General Psychiatry outpatient group and lie within a light-to-moderate symptom level. It should be noted that the means for CPRS-Depression, CPRS-Compulsion and CPRS-Anxiety obtained from the healthy controls markedly lower than those of the patient group. Taken together, the groups were considered representative for the present study. Interestingly, a significant influence of presenting psychiatric symptoms was observed upon expressions of stress, and lack of energy and optimism.

The present results were consistent with research on psychiatric patients with Neurofibromatosis I wherein both patients presenting psychiatric symptoms at a similar level of severity as the present patient group and a healthy control group were investigated. (Zöller et al., 1997; Zöller, 1997).

The only 'direct' significant effect of gender found within the two groups, i.e. patient group and control group, pertained to CPRS-anxiety expressed by the healthy controls wherein the female participants evidenced more than twice as much anxiety as the males.

A major focus of this study was to ascertain which personal attributes contributed the total populations (controls and patient groups together) experience of stress. The results indicated that to a marked extent only two attributes contributed; negative affect was directly predictive whereas positive affect was counter

predictive. Although stress also was counter-predicted from positive affect optimism measured as life orientation (LOT) was found not to affect stress. (See table 4).

Table 4 Standardized weights (ß) values from linear regression analysis with Stress as dependent variable [F(8,192) = 43.03, p< =0.001; Adjusted R^2= 0.627] and LOT (optimism), Positive affect , Negative affect, DIP-Q general criteria, DIP-Q GAF (year), CPRS depression, CPRS compulsion and CPRS anxiety as independent variable, (n = 201), in all the participants

Stress

Predicting variable	Standardized Beta (β)
LOT	-0.07 *ns*
PA	-0.20**
NA	0.36***
DIP-Q general criteria	0.09 *ns*
DIP-Q GAF (year)	-0.08 *ns*
CPRS-depression	-0.16 *ns*
CPRS-compulsion	-0.13 *ns*
CPRS-anxiety	0.08 *ns*

**p<0.01; ***p<0.001

This result that stress could be predicted from negative affect has been observed quite regularly (Andersson-Arntén et al., 2008; Archer et al., 2008; Archer et al., 2007; Karlsson and Archer, 2007; Palomo et al., 2007). In a study by Archer et al. (2008) stress was the major contributor to negative affect, anxiety, depressiveness, as well as being the major obstacle to positive affect, self-esteem and motivation. Positive affect was counterpredicted by depression, negative affect was predicted by anxiety and depression, and counterpredicted by self-esteem. Interestingly, self-esteem was predicted by optimism and energy but counterpredicted by anxiety, depression and stress.

The variables that predicted stress were different between men and women thereby providing another type of gender effect. For men, both negative affect and the DIP-Q criteria predicted stress whereas positive affect was counter-predictive for stress. The female participants experienced stress to a lesser degree and stress was only predicted by negative affect. This notion implies that the predictors of stress ought to have a direct bearing based upon the regression analyses. Accordingly, the observation that only negative affect predicted stress among female participants (patients and controls) whereas negative affect, DIP-Q general criteria predicts stress in the male participants, with positive affect counter predictive as well as, brings into question the status and properties of stress over gender.

Taken together, the results of the psychiatric patient group and healthy control group are reconcilable with several other observations in illustrating the complex

associations between affective personality, stress, energy and dispositional optimism, not least in possibly underlying comorbidity (Palomo et al., 2007).

Study III

Emotional disturbances expressed by deaf patients. Affective Deaf Syndrome
The aim of this study was to describe the emotional disturbances within a group of deaf/hard-of-hearing psychiatric patients. Firstly, we clarified the level of communication problems. Secondly, we studied the differences in affective mood between a patient group with deaf/hard-of-hearing patients and a healthy control group. Thirdly, we identified predisposing and protective factors for ill-being in the patient group by identifying key attributes for the identification of patients at risk.

The instruments used were the Background questionnaire, PANAS, SES (self-esteem) and SE (stress and energy). At the time of the inclusion in the study the patients fulfilled the diagnostic criteria ICD and DSM for Depressive disorders = 43%, Anxiety disorders = 33%, Trauma- and Stressor-Related disorders = 33%, Attention-Deficit/Hyperactivity disorder = 21,4 %, Autism spectrum disorder (ASD) 21%, Obsession-Compulsive disorder = 12 %, Schizotypal Personality disorder = 7%, Personality disorder Cluster B = 5%, Substance-Related and Addictive disorders = 5%. Furthermore, 42 % of the patients fulfilled criteria for more than one diagnosis. Most common was Depressive disorder combined with Anxiety disorder and/or Trauma-and Stressor-Related disorders. There was a significant difference in dl wine/week between the groups $p = < 0.05$. The healthy controls had a mean of 0.83 dl/week and the patient group only a mean of 0.23 dl/week. There were no differences in the total amount of alcohol units/ week $p = 0.1$. There was a significant difference of sitting still during the day $p< 0.01$, the patients were sitting less during the day.

The results indicated that the communication between family members was hampered by a high rate of non-fluent sign communication (86%) within the families of the patients. Only few (10%) of the patients were found to have fluent Swedish language skills. It is interesting to notice that in the study of Black & Glickman they found that 75% of deaf individuals fell into the non-fluent range of communication in American Sign Language (Black & Glickman, 2006).

We found significant differences between patients and the healthy control group for positive affect, negative affect, self-esteem, energy, stress, number of cigarettes/day, pain, analgesics, hours of television watching, self-esteem and positive mood.

The results form correlation analyses (Pearsons' r) for the patient group between different attributes is presented in in table 5. Smoking of cigarettes and physical activity did not correlate with the other variables studied.

Table 5. Patient group. Correlation coefficients (Pearson's r) between Positive affect, Negative affect, Self-esteem, energy, stress, sleeping problems, analgesics, pain and television

	PA	NA	SES	Energy	Stress	Sleep	Analg.	Pain	TV
PA	1.00								
NA		1.00							
SES	.44**	-.51**	1.00						
Energy	.57**	-.32*	.53**	1.00					
Stress	-.39**		-.45**		1.00				
Sleep		.32*	-.40**	-.28*	0.29*	1.00			
Analg.		.47**			0.35*		1.00		
Pain	-.34*			-.36**			0.34*	1.00	
TV						-.30*			1.00

PA = Positive Affect, NA = Negative Affect, SES = Self-esteem, Sleep = sleeping problems, Analg. = Analgesics, TV = Television; *p<0.05, **p<0.01.

In order to understand predisposing and protective factors for ill-being in the group of deaf/hard-of-hearing we conducted regression analyses. The results indicated that positive affective mood for the patients could be predicted from high self-esteem whereas analgesics were counter- predictive for affective mood. The conclusions were that analgesics may be seen as a predisposing factor for the Affective Deaf Syndrome (ADS) and was identified as a key attribute for the patients at risk. On the other hand, the analysis for the healthy volunteers indicated that positive affective mood could be predicted from high self-esteem and high energy whereas stress was counter-predictive for positive affective mood. (See table 6).

Table 6. Affective mood in patient group and healthy volunteers. Standardized weights from multiple regression analysis with affective mood as dependent variable and stress, energy, number of cigarettes/day, pain, analgesics, television, sleep and self-esteem as independent variables

Positive mood

Predictor variable	Standardized Beta (β) patient group	Standardized Beta (β) healthy volunteers
Stress		-0.40***
Energy		0.21**
Analgesics	-0.29*	
Self esteem	0.49**	0.41***

**p<0.01, ***p<0.001. Only significant results are given.

The fact that self-esteem is predictive for positive affective mood has earlier been demonstrated (Archer, Adolfsson & Karlsson, 2008). We have clinically observed that many of the deaf and hard-of-hearing patients have very little support from their families. This may be due to communication difficulties. Living and growing up without full means of communication with the family is a great handicap because usually this is the place for learning to understand oneself, other persons,

and society. Many of the families are having problems in different areas and this might be a contributing factor to the Affective Deaf Syndrome.

Considering the pattern of our results from the patient group it is concluded that all information regarding the differences between patients and healthy controls is useful for designing intervention. The fairly good self-esteem may be a good starting ground for psychiatric and psychological treatment. It helps the patients to interact with the intervention program and makes them open enough to integrate the treatment into their lives.

As we have seen, the use of analgesics is a problem for the patient group and make them at risk for less positive mood. Analgesics may thus be seen as a key attribute for risk and must be taken into consideration when treating the patients' psychiatric illness. It may be considered further why our results indicate that analgesics and not pain is counter-predictive for positive mood in the patient group.

On the basis of clinical experience of this patient group, it appears that the patients have the capability to use the self-evaluation questionnaire although this needs to be done in cooperation with sign language interpreters trained to deal with the issues and concerns that exist in mental health settings. We suggest that repeated self-evaluations over a period of treatment may add to further knowledge of the Affective Deaf Syndrome. One reason for our opinion is that the patients felt at ease with the results when individually revealed to them after the end of the study during their regularly meetings with their psychiatrist. They also expressed that this made them feel co-responsible for the treatment and this situation has rendered an experience of self-control by the patients and a subjective feeling of contributing to their own progress.

Study IV

Mood and Impulsiveness in Affective Deaf Syndrome
The aim of this study was to investigate associations between positive mood and impulsiveness in the deaf and hard-of-hearing patients with psychiatric disorders compared to a control group. The same groups were used as in study III. The instruments used were: A Background and Health Questionnaire, PANAS, LOT (Optimism), Barratt's Impulsiveness Scale (BIS-11), Locus of Control (LOC) and Situational Intrinsic Motivational Scale (SIMS).

The results indicated that the variables that define the patient group are less optimism, a greater external control, a higher identified regulation, higher external regulation, higher amotivation, more distractiveness, higher motor impulsiveness

and a lower positive mood. There were no significant differences between the groups for internal locus of control, intrinsic motivation, and non-planning impulsiveness. (See Table 7). No significant group effect was found for gender. The analysis did not indicate any significant interaction by group and gender.

Table 7. Results of multivariate analyses with type of group and gender as independent variables and personal attributes as independent variables. Mean and standard deviation for the two groups.

		Patient group M/SD (n = 52)	Control group M/SD (n = 116)
Optimism	[F(1,166) = 63.98, ***p<0.001***]	1.98±0.58	2.73±0.56
External Locus of Control	[F(1,166) = 18.2, ***p<0.001***]	3.08±0.50	2.70±0.55
Internal Locus of Control	[F(1,166) = 1.76, p = ns]	3.21±0.56	3.07±0.63
Intrinsic motivation	[F(1,166) = 0.05, p = ns]	4.05±1.61	4.11±1.60
Identified regulation	[F(1,166) = 11.93, **p<0.01**]	4.74±1.49	3.86±1.53
External regulation	[F(1,166) = 14.71, ***p<0.001***]	3.79±1.49	2.82±1.53
Amotivation	[F(1,166) = 8.90, **p<0.01**]	3.28±1.37	2.61±1.35
Distractiveness	[F(1,166) = 15.37, ***p<0.001***]	2.33±0.42	2.12±0.28
Motor impulsiveness	[F(1,166) = 12.39**, *p<0.001***]	2.21±0.39	2.03±0.23
Non-planning impulsiveness	[F(1,166) = 0.004, p = ns]	2.70±0.40	2.69±0.39
Positive Mood	[F(1,166) = 44.88, ***p<0.001***]	134.29±53.30	210.40±73.69

Notes: M = mean; SD = standard deviation. For each variable the significance is given between the patient group and the control group, ns = non-significant.

Correlation analyses were also carried out using all the eleven variables in the study. Results revealed that positive mood for the group of all participants may be defined from a strong optimistic position and from a loss of external control, external regulation, heightened amotivation, and heightened distractiveness.

The results from a regression analysis of the data from the patient group indicated that positive mood (F (7,44) = 5.141, p<.001, *adj.* R^2=.36 was predicted by optimism and motor impulsiveness, and was counter predicted by amotivation and distractiveness. On the other hand, the data from the healthy volunteers expressed that positive mood (F (7,107) = 11.06, p<.001, adj. R^2 =.38) was predicted by optimism and was counter predicted by identified regulation and distractiveness.

Table 8. Patient group and the healthy volunteer group. Standardized weights from linear regression analysis with positive mood as dependent variable.

Positive mood

Predictor variables	**Standardized Beta(β) patient group**	**Standardized Beta(β) control group**
Optimism	.31*	.46*
Amotivation	-.32*	
Distractiveness	-.42*	-.22*
Motor impulsiveness	.51**	
Identified regulation		-.20*

*p<.05, *p<.01, ***p<.001.

The present findings (see table 8) strongly suggest the predictive associations in the patient group between positive mood with optimism and motor impulsiveness. On the other hand, are positive mood counter-predicted by amotivation and

distractiveness. The results further demonstrate that distractiveness as well as motor impulsiveness are significantly higher than in the patient group. Non-planning, however, did not attain a significant difference, but was relatively high in both groups. It is an interesting fact that our study concludes that positive mood is predicted by motor impulsiveness in the patient group, but not in the control group. Could the patient group experience that motor impulsiveness has a positive value by induction of a higher positive mood?

The pattern of results suggests that the deaf/hard-of-hearing group seek to emerge from a condition of disempowerment but require suitable interventional therapies to succeed.

General Discussion and Conclusions

The four empirical studies in this thesis investigated the psychological disability of attributes modulation affective profiles in persons with psychiatric diagnoses. From the results obtained, the following conclusions were made:1) Psychological dysfunction had a significant stronger Self-Destructive affective profile, expressing high negative affect and low positive affect. The High-Affective Profile, which also contained much negative affect was also significant higher among patients than among the healthy individuals. 2) Psychological dysfunction caused by stress was predicted by negative affect for both men and women, but was counter-predicted by positive affect among men. 3) Psychological dysfunction was expressed in the Affective Deaf Syndrome which consists of complex interactions of communication difficulties, impaired affective mood, and psychiatric and psychological disturbances. Analgesics was interpreted as a key factor for risk. 4) Psychological dysfunction of mood expressed by amotivation and distractiveness was contributing to ill-being.

Psychological dysfunctions expressed in the Affective Profile

Psychological well-being is decisive for the way we function as individuals, how we develop and adapt to each other and to our comprehension of life as being meaningful. Research on well-being concerns itself with healthy individuals from the general population and is also applicable to situations in which individuals have to deal with somatic and mental ill-health.

A plethora of studies using PANAS showed that feelings of enthusiasm, activity, feelings of duty, control, strong and proud (i.e. PA) were related to well-being. Feelings such as self-acceptance, goal-orientation and empathy were also related to well-being, whereas feelings such as anger, guilt, shame, contempt, and distress (i.e. NA) are linked to anxiety, depressiveness, ill-being, rumination, non-action and health problems (Archer, Adolfsson & Karlsson, 2008; Garcia, 2011).

The findings in the empirical studies included in this thesis showed that the patients differed markedly from the norm group with regard to all measured health variables i.e. lower positive affect, lower energy, lover non-stress, lower non-negative affect, and lower optimism. Stress appears less detrimental for health in comparison to negative affect itself which is expressed by a self-destructed symptom profile. Negative affect was the most important factor in predicting stress. The healthy volunteer group was found to be less affected by stress than

the psychiatric patient group. The clinical implications of the present findings appear to be as follows: The clear associations between, stress, affect and mood state, despite modulation by pharmacotherapeutic agents, are more serious for the patient group. It is interesting to note that mood states and affect are associated with serotonergic systems (Coccaro, 1989; Peirson and Heuchert, 2000; Tranter et al., 2002). Serotonergic functioning correlates with positive and negative affect in healthy male individuals (Zald and Depue, 2001). Flory et al. (2004) showed that brain serotonergic functioning was related to estimates of positive affect (Flory et al., 2004).

It is possible that the 'affective profile' of individuals predisposes them to confront stressful situations with different propensities. Most studies use PA and NA to define emotional state rather than a 'trait like' temperament (Lyubomirsky, King & Diener, 2005). Lyubomirsky et al. conclude that happiness, pleasant moods, and closely related constructs precede indicators of physical well-being and adaptive coping. They also suggest a conceptual model which postulates that a happiness-success link exists, not only because success makes people happy, but also as positive affect engenders success. Individuals characterized by NA experience greater stress, anxiety and strain during a wide range of circumstances and events in which they experience limited, control, if any. Spector & O'Connell, (1994) and Watson & Pennebaker (1989) consider the correlation between negative affect and measures of health complaints to be a sign that *individuals high in negative affect* tend to be more self-observing and dwell upon matters *than individuals low in negative affect*. Data not including psychiatric patients imply that stress could be predicted from negative affect (cf., Agerström et al., 2006; Karlsson and Archer, 2007; Palomo, Beninger, Kostrzewa, & Archer, 2004, 2007; Schütz et al., 2014).

Bearing in mind the results of the total associated dysfunctions of the group of psychiatric patients with low optimism, low level of energy, low level of positive affect and high levels of stress and negative affect it is important to propose in what way patients can improve their affective state. Anxiety and depression are the main disorders in the patient group. Both pharmacological treatment and different psychological methods as cognitive behavioral therapy (KBT), inter personal therapy (IPT) and sometimes psychotherapy are underlined by the treatment at the psychiatric clinic of the study.

Personal attributes that render empowerment are important in what way individuals deal with stress-filled experiences of daily life. Education, self-learning and optimal life-style based upon healthy attachment to self are ways to counteract detrimental effects of stress. Finally, the special role of physical exercise as a mean to counteract detrimental effects of stress in individuals

defined, and afflicted, by personal disempowerment ought to be considered (Archer et al., 2014).

Psychological Dysfunctions expressed in Affective Mood

The need for competence, autonomy, and relatedness are central concepts to understand the regulation of behavior. Competence is needed for being effective in one's interactions with the situation. Autonomy is 'a sense of feeling free from pressures and to have the possibility to make choices among several courses of action'. Relatedness helps to establish interpersonal attachments and bonds between individuals, and is based on a fundamental striving for contact with others. A social context helps people to fulfil the basic needs of individuals and groups and will affect self-determined types of motivation (i.e., intrinsic motivation and identified regulation) whereas events that counteract these needs will produce non self-determined types of motivation. For instance, some studies have shown that negative feedback is associated with a decrease in perceptions of competence and intrinsic motivation (Vallerand & Reid,1988). Moreover, many studies have shown that providing choice (i.e., autonomy support) is associated with feelings of autonomy and self-determined types of motivation (Deci & Ryan, 1985; Vallerand, 1997). The role of empowerment, self-advocacy, and social relations over life span are important aspects to consider for a healthy work life. Many disabled and employed individuals have higher average levels of social isolation and inactivity and lack meaningful work and leisure time activities than hearing persons (Lyons, 1993, Backenroth, 1996). Impairment results from illness or disease (Backenroth-Ohsako et al., 2003) and is closely related to personality and work life. Backenroth (2003) concludes that hearing impairment can be considered a hidden disability (see also Backenroth & Ahlner, 1997).

The findings in study III showed that self-rated energy was predictive for positive mood for the healthy controls but not for the patients. Healthy controls experienced energy, but patients did not. This circumstance begs the question: Why was experience of energy not predictive for positive mood in the patient group as it was in the control group? Was it because analgesics block this energy? The less experience of energy in the patient group must be taken seriously and be considered as central for the prevention of emotional disturbances and for the treatment of the patients' disorders. One reason for the lack of energy among the patients might be the psychiatric conditions in the patient group. Not surprisingly, analgesics were found to be counter-predictive for positive mood in the patient group, but not for the healthy controls. Analgesics was interpreted as a predisposing factor for the Affective Deaf Syndrome (ADS) and identified as a key attribute for the patients at risk. This will be a factor to consider in the

treatment aimed at overcoming the affective problems of the patients.

The present findings in study IV strongly implicate the predictive associations in the patient group between positive mood with optimism, amotivation, distractiveness and motor impulsiveness. According to (Black and Glickman, 2006) impulsiveness in total is predicated by NA. In clinical samples (Scheier & Carver, 1985) confirmed that motor impulsiveness was related to episodes of mania, but also to ADHD. Stanford (2009) also demonstrated that attentional impulsiveness (distractiveness) was related to both episodes of mania and depression and that non-planning was linked to unipolar depression and ADHD. Self-esteem was found to predict positive affective mood for both groups although the patients had less self-esteem. The fact that self-esteem is predictive for positive Affective mood was demonstrated earlier (Archer, Adolfsson & Karlsson, 2008). We observed clinically that many of the deaf and hard-of-hearing patients have very little support from their families. This may be due to communication difficulties.

Positive mood was for the patient group revealed as predicted by optimism and motor impulsiveness, and counterpredicted by amotivation and distractiveness. This pattern of results suggests that the deaf and hard-of-hearing patients attempt to emerge from a condition of disempowerment but require suitable interventional therapies to succeed.

In sum, the results of our study demonstrated a significant difference between the groups where distractiveness and motor impulsiveness were significantly higher than in the patient group. Non-planning, however, did not indicate a significant difference, but was relatively high for both groups. It is an interesting fact that our study could conclude that positive mood is predicted by motor impulsiveness in the patient group, but not in the control group. Motor impulsiveness was strongly associated with positive mood in the patient group, but not in the control group. Could it be the case that the patient group experiences motor impulsiveness to have a positive value through the induction of a higher positive mood?

Gender and Affective Mood

Gender and affective profile poses indeed a difficult question also among non-psychiatric patients. It has been demonstrated that female participants display more negative health symptoms (Wilson et al., 2005). Karlsson and Archer (2007; 2008) found distinct gender effects in their studies of positive and negative affect. Female participants expressed higher levels of responsibility and vigor, greater emotional coping and higher level of energy as well as higher

levels of negative affect, stress and Type A-personality. Andersson-Arntén (2009) found that women expressed significant higher levels than men for the following variables: anxiety, stress and psychological subjective stress experience but also for energy. No significant gender effects were registered neither for depression, somatic subjective stress experience, positive and negative affect nor for dispositional optimism.

When using the median split model, women recall experiencing negative affect to a larger extent compared to men, and men recall experiencing positive affect to a larger extent than women (e.g. Crawford& Henry, 2004; Schütz, 2015). Despite this fact suggesting clear general differences in affectivity between men and women, past research using the median split has not found interaction effects between the type of profile and the person's gender on well-being and ill-being (see Garcia, 2011). Garcia states that while it is plausible to suggest that the differences in affectivity between profiles overrule possible gender differences (Garcia & Siddiqui, 2009a; Garcia 2011). Garcia, MacDonald and Archer (2015) found that females were assorted to a self-destructive profile more often than chance and males less often than chance to the same profile.

The results of the present dissertation seem to be in the same direction in a group of psychiatric patients. More women 15% than men 7% among the patient group in study I and II had personality disturbances according to cluster A (paranoid, schizoid and schizotypal disorders), and 9% and 4% respectively to cluster C (withdrawal and anxiety), but the amount of cluster B (antisocial, borderline, histrionic and narcissistic) personality disturbances were the same 19% for both men and women. The number of psychiatric diagnoses differed also: 71% of the women had 4 diagnoses, but only 11% of the men fulfilled the criteria for diagnoses.

Study I in this dissertation found a significant effect of Affective Personality, but not gender nor any Affective personality x gender interaction effect. Study II aimed at investigating to what extent affective state and mood were predictive of the stress experience, and to observe gender effects.

The results showed that psychiatric disorders had a detrimental effect on stress, energy and optimism. Stress was predicted by NA for both genders, but counter-predicted by PA only among men. DIP-Q criteria predicted stress only among male participants and PA was counter-predicted for stress among men only. In study IV a MANOVA was applied with the type of group (patients and healthy controls) and gender as independent variable and optimism, locus of control (extern and intern), intrinsic motivation, identified regulation, external regulation, amotivation, distractiveness, non-planning impulsiveness, motor impulsiveness,

and positive mood as dependent. The results indicated a significant effect for group but no significant group effect was found for gender.

In the study of Zöller (1997), the only 'direct' significant effect of gender found within the two groups, i.e. patient group and control group, pertained to CPRS-anxiety expressed by the healthy controls wherein the female participants evidenced more than twice as much anxiety as the males.

There is a difficulty in drawing conclusions from the above studies on the aspect of gender. Different psychological instruments seem to be sensitive for the gender aspect in different ways. Also the groups are too small to produce definitive answers on the aspect of gender. Some data agree with earlier studies, but taken into account that few studies have been performed on psychiatric patients and even fewer on deaf/hard of hearing psychiatric patients ultimate conclusions cannot be drawn. Future research will provide the answer.

Psychological dysfunctions expressed in the Affective Deaf Syndrome

Living and growing up without full means of communication with the family is an immense handicap because usually this is the place where one learns to understand oneself, other persons, and society. Many families have problems in different areas and this might be a contributing factor to the Affective Deaf Syndrome. Mood disorders, substance abuse, and traumata and their sequelae were diagnosed infrequently or have hardly been addressed at all in past research (Pollard, 1994). One reason for this situation may be that diagnosis assessment in earlier studies was not performed by a psychiatric team specialized in assessment and treatment of deaf and hard-of -hearing patients at a Deaf Unit, but by psychiatrists and other co-workers in general wards not specialized on deaf persons.

As shown in this dissertation there were psychological dysfunctions both in the affective profile as well as in affective mood. Deafness and hard-of-hearing may lead to a heightened degree of stress, vulnerability and tiredness. According to this information research has shown that the mental and physical ill-being is higher within this group than in the general population. Often the ability to reach health-care is restricted due to the difficulty of communication, which sometimes increases the risk of these persons to get the wrong diagnosis or being maltreated. The results also show that this group of deaf and hard-of- hearing individuals are more at risk of trauma and traumatic reactions than the general population (Pereira, 2010; Fellinger, Holzinger & Pollard, 2012; Landsberger et al., 2013;

Ronnberg et al., 2013.). Landsberger highlights the fact that children with disabilities are 3.4 times more likely to be abused than children without these difficulties and that deaf and hard-of-hearing children and adolescents may be twice as likely to experience different kinds of abuse and neglect. This is confirmed by our experience. It is not uncommon that we need to make social services aware of such suffering among our patients and especially the children. Schild and Dalenberg (2012) report that the posttraumatic stress disorder (PTSD) is underdiagnosed in the deaf population. The problem is that only about 20% of the patient group meets the criteria for PTSD because e.g. they don't clearly report the startle response and detachment from others. However, the result is often that the deaf and hard-of-hearing persons withdraw from society and from working life due to this and other difficulties. Isolation may occur and disempowerment. Backenroth-Ohsako et al., (2003) have emphasized the detrimental psychological effects of unsuccessful coping with stress and anxiety as a result.

Many deaf individuals comprise a unique linguistic minority group where they identify themselves with the Deaf culture (Landsberger et al., 2013). These persons often express a locus of pride and identity with their Deaf culture. This is a two-sided issue, on one hand their self-esteem is high and they reject persons who are not part of the Deaf culture, on the other hand some complain about the Deaf society being too small, that everyone knows everyone and that this makes them feel trapped in their Deaf community. The deaf residential schools are often a significant step into this Deaf culture (Woll & Ladd, 2011). There is a great difference between the hard-of-hearing patients who more often identify themselves with the greater society and the deaf persons. Whether one prefers to be referred to as 'hard-of-hearing' or 'deaf' is a matter of self-identification and may depend on the early history of the individual patient and to their genetic family.

The 'deaf identity' is a complex, multifaceted complex. There is not a single 'deaf experience' but a membership that depends on shared values according to Landsberger (2013) 'including but not limited to respect and support for manual language, general dissociation from speech, and identification with, as well as a sense of pride in, associating with other deaf individuals'. While the majority of deaf people are mentally healthy and able to pursue self-actualizing lives psychological evaluations continue to be an area of concern due to the need for fluency for the deaf client's preferred language as well as the challenges in arriving at accurate diagnoses (see also Scheider, 2009). According to Leigh & Pollard (2011) there is now a new focus on treatment approaches that focus on cultural relevance. This is also observed in the instructions for Swedish psychiatric healthcare for the deaf (Psykiatristöd Stockholms Läns Landsting, 2016).

In summary.
To illustrate the difficult situation for the deaf and hard-of-hearing patients I will describe some of the consequences of the specific profile of the group.

The profile of the group of deaf and hard-of-hearing patients consists of the interactions of negative affect and low positive affect fulfilling the criteria of a self-destructive profile in many of the patients.

A greater risk of a low NA than only a small amount of PA has been demonstrated. Stress is predominant in the patient group; psychosocial stress may exert negative influences upon physical health and has been described as a dysregulation in melancholic and atypical depression. Stress also promotes feelings of anxiety and frustration which may push the patients beyond their ability to successfully cope.

Lifestyles and environment are often to blame for chronic stress, but are also able to modify and thereby counteract stress-related states. Self-esteem was lower than among controls, but still good enough, together with dispositional optimism that is another intrapersonal resource, to help the patients cope with adversaries in life. However, there is still a risk for these patients as much evidence suggests that self-esteem may influence perceptions and cognitive appraisals and responses to a multitude of events and situations, such as occupation, illness and chronic pain.

Amotivation may contribute to a difficulty to experience a lack of contingency between the behaviors and outcomes of the actions of the patients, and may point to a sign of no sense of purpose, and no expectations of reward or possibility of changing the course of events. It can be regarded in an analogous way as learned helplessness. Identified regulation on the other hand is identified with the wish of the person, and can be a strength when used in an appropriate way. External regulation on the other hand can be seen as an outward control of the behavior, a person does something because he/she feels obliged to do it. External locus of control is the reverse of the inner control of the person.

Impulsivity have been discussed in many studies and is related to ADHD among other disorders. Impulsivity belong to impulsiveness, where distractiveness and motor impulsiveness are second order factors together with nonplanning impulsiveness. Studies have shown that impulsiveness is predicted by negative affect, amotivation, and depressiveness, and is counterpredicted by positive affect and internal locus of control in healthy volunteers.

The conclusion our study is that the deaf and hard-of-hearing psychiatric patients seem to be less affected by psychiatric disorder as such than other groups of psychiatric patients as for example with anorexia (Lundblad et al., 2015) and hearing psychiatric patients (Zöller et al., 2009). Still they seem to have more self-

rated stress, more use of analgesics and less self-rated energy than healthy hearing volunteers. One of the reasons for this might be that the hiddenness of the disability adds to the burden of the other symptoms as the individual with hearing loss tends to deny his/her problems because of the risk of being stigmatized or discriminated against.

Studies of positive and negative affect and affective attributes may be a way in which the knowledge of the burden of the affective deaf syndrome may be increased.

Limitations

One weakness of the study may be the interaction of many different variables in the patient group with often more than one axis I disorder and a low general function. There is the problem of applicability to other groups. However, the results of the large norm group and the stability of the healthy volunteer group give valuable information on the affective profile.

The particular condition of the deaf/ hard-of -hearing patient-group implies that the number of individuals available for participation was limited. Nevertheless, the present findings seem robust. The aim of the study was to study deaf and hard-of-hearing psychiatrically ill patients in order to understand if and how these individuals may differ from healthy individuals. The purpose was to look for weaknesses and strong sides of the profile of the patients and healthy individuals and use the results clinically as indications to which resources may less strong in the ADS group and may be trained to benefit the health of this group. A second control group would have been an advantage, but we did not find deaf and hard-of-hearing volunteers without psychiatric disorders who were willing to undergo a psychiatric examination to establish their psychiatric health and then volunteer to answer the questionnaires. Thus, this limitation remains to be considered in a future study.

Future Directions

There are four areas that need a further study. Firstly, future studies should use person-oriented techniques to approach the post-traumatic stress-syndrome. We know from the patients' own reports during treatment and from the neuropsychological investigation that the patients often experienced repeated traumata during their life. It is not unusual that the persons already as small children were sexually abused, often by persons close to them. As adults, they are often put or put themselves in situations where they are used in different ways. Future research should investigate these problems further. Secondly, further

studies need to clarify personality development for this group. Disorders of development of the personality is related to trauma, but might be studied also in its relation not only to school performance and intelligence, but also to the future oriented perspective of the person. Thirdly, as we discovered in our studies analgesics seem to play a hidden role. Is there a kind of anxiety that provokes the patients to use non-prescript medication? Is there a hidden problem of addiction that is not related to alcohol as the results showed that the alcohol consumption in the deaf patient group was significant less than in the group of healthy volunteers? Perhaps is there a relation between anxiety and an immature personality or dependent personality disorder? It is important to get more information about this aspect. Lastly, further research should add more information on the psychosocial aspects in order to investigate relations between these and psychological and neuropsychological aspects.

Causes and Consequences

This thesis provides a huge number of interrelated findings. The model of the affective system mirrors a complex adaptive system that expresses a complex reality. This dissertation has contributed with data describing the profile for deaf psychiatric patients. The variables that define the patient group are less optimism, a greater external control, a higher identified regulation, higher amotivation, higher external regulation, more distractiveness, higher motor impulsiveness and a lower positive mood.

The main contributor to ill-health is negative affect and stress, however analgesics also seem to be a contributor. Motor impulsiveness and self-esteem are ways to counteract the negative influences.

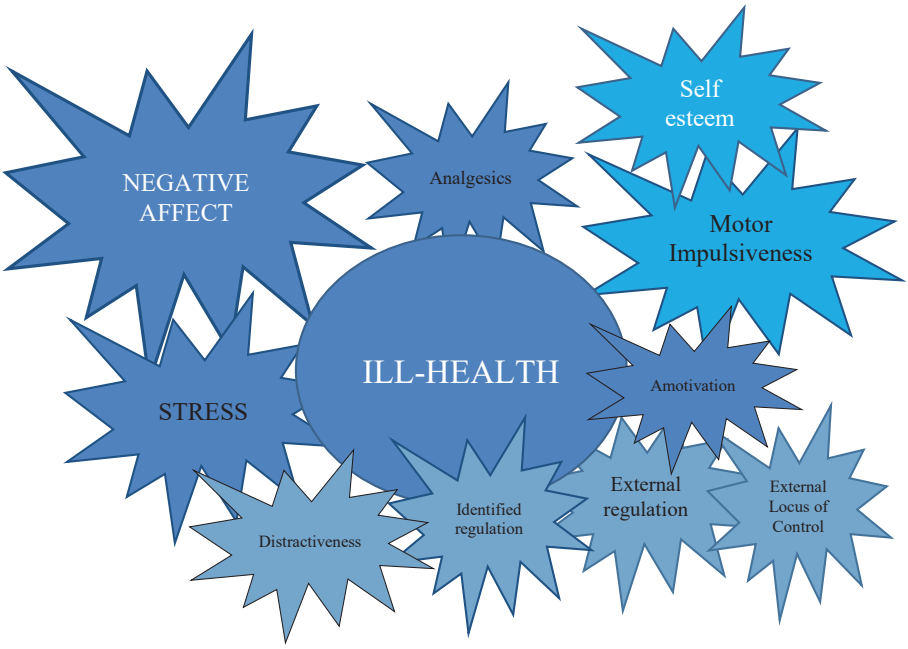

Figure 2. Profile of ill-health among the deaf patients

Concluding Remarks

Considering the pattern of our findings among the patient group compared to healthy controls, it is concluded that all information regarding the differences between patients and healthy controls is useful for designing intervention. The fairly good self-esteem may be a good starting point for psychological and psychiatric treatment. It helps patients to interact with the intervention program and makes them open enough to integrate the treatment into their lives. As we have seen the use of analgesics is a problem for the patient group and renders them at risk of less affective mood. Analgesics may thus be seen as a key attribute of risk and must be taken into consideration when treating the patients' psychiatric illness. With the new research results of the disempowerment of our patient groups we will be better armed to help them reach empowerment.

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