# Personality Traits

# 10

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## Contents



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**Abstract**

There is no empirical evidence for a specific physician personality, but we lack large and representative comparison studies. Prospective studies show that the neuroticism trait is a risk factor for stress, depression, and reduced well-being in physicians as well as in the general population. The conscientiousness trait may be both beneficial (reduce drinking and increase performance) and detrimental (for stress and burnout) in physicians. Reality weakness is a pathological trait that has shown predictive validity in Norwegian physicians with respect to severe depression, suicidal ideation, and lack of help-seeking. Despite being relatively stable after young adulthood, traits may develop and change over the whole life span, suggesting that traits causing dysfunction can also change with treatment. Psychotherapy is effective in the treatment of personality disorders.

## 10.1 Introduction

Thirty years ago, Dr. Glen O. Gabbard described compulsiveness and the triad of doubt, feelings of guilt, and an exaggerated sense of responsibility in the "normal physician," yet there has since been limited research on the role of personality traits in the medical profession (Gabbard 1985). This applies particularly to representative and relevant epidemiological studies. Therefore, we do not know for sure whether compulsiveness is more common in medical doctors than in academia, other professions, and other comparable groups.

Dr. Gabbard's two well-known JAMA articles build on observations of several physicians attending workshops for physicians and their families at the Menninger Clinic back in the 1970s and 1980s (Gabbard 1985; Gabbard and Menninger 1989). He wisely shares these observations "without any implication that such dynamics apply to all physicians or to any one particular physician" (Gabbard 1985). Still, it is common clinically to see physician-patients with problems related specifically to trait compulsiveness (or the similar traits of obsessiveness or conscientiousness). Interestingly, conscientiousness in the NEO classification of personality traits (Costa and McCrae 1988) is sought by "headhunters" for many jobs, and is related to school performance, and hence to selection for and admission to medical school. However, the enormous volume of *Gray's Anatomy* can frustrate any high-achieving student. Previously, they may have learnt the details of their school texts more or less by heart, but there are simply too many in *Gray's Anatomy*!

This review is divided into two major sections. First, a review of selected articles about the prevalence of particular personality traits and characteristics in physicians is presented. Second, personality traits as predictors of mental health and well-being in physicians, with a particular attention to prospective and longitudinal studies, are discussed. The review is based on a focused search in Medline (Ovid) October 2016 with the two terms [Physicians]OR[Physician Health]OR[Physician Impairment]/AND [Personality]OR[Personality Assessment]OR[Personality Disorders]

OR[Personality Inventory]OR[Personality Development]. The search was limited to the last 20 years (1996–2016) and this yielded 257 articles that were hand-searched for prevalence and predictor studies. Some studies about prevalence of traits did not include mental health or well-being as an outcome, whereas the predictor studies were restricted to these outcomes.

Personality traits were assessed with different inventories, but some of these may be fairly comparable (see Table 10.1). The most common and validated personality measure in general is Costa and McCrae's NEO or "Big Five" (BF) (Costa and McCrae 1988), named for the five major personality dimensions it measures (see Glossary for terms). Our studies on physicians included Cloninger's Temperament Character Inventory (TCI) (Cloninger 1987), Eysenck's Giant Three (EYS) (Eysenck 1967), and Torgersen's Basic Character Inventory (BCI) (Torgersen 1980). In addition, a few studies with more freely described personality characteristics as well as personality typology were included. For the purposes of this chapter, personality traits as measured specifically by these scales will be shown in *italics*, sometimes preceded by the scale's abbreviated name when it may be unclear which inventory was used.

In the following discussion I will make use of my own experience both as a researcher and clinician. I have more than 20 years of experience in doing research on mental health among medical students and doctors. Since 1993 I have run a part-time specialist practice in psychiatry and psychodynamic psychotherapy primarily with physician patients.

**Table 10.1** Personality dimensions (modified after Torgersen (2008))

| Author | Inventory | I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|---|
| Eysenck (1967) | Giant Three (EYS) | *Neuroticism* | *Extraversion* | Not *Psychoticism* | | | |
| Torgersen (1980) | Basic Character Inventory (BCI) | *General Neurotic* | *Impulsive Hysterical* | *Obsessive* | | *Reality Weakness* | |
| Cloninger (1987) | Temperament and Character Inventory (TCI) | *Harm Avoidant* | *Reward Dependent* | Not *Novelty Seeking* | *Cooperativeness* | *Self-Transcendence* | |
| | | Not *Self-Directedness* | | | *Reward Dependent* | | |
| Costa and McCrae (1988) | Big Five (BF) | *Neuroticism* | *Extraversion* | *Conscientiousness* | *Agreeableness* | | *Openness* |
| Torgersen revised (later) (Tyssen et al. 2000; Røvik et al. 2007) | BCI | *Neuroticism* (*Vulnerability*) | *Extraversion* (*Intensity*) | *Conscientiousness* (*Control*) | | *Reality Weakness* | |

**Case I**

*Carl was 55 years old and a specialist in cardiology who worked in a busy hospital department. On admission 3 years ago he told me that he was feeling depressed and very tired from attending to his patients. After having seen outpatients, he worked long hours in his office to keep up with paperwork and strove hard to have a clean desk every night. Yet, he often felt obliged to bring work home for the weekends, and this frustrated his wife who accused him of never having time for her. During the last year he felt that he had lost patience and just prior to admittance he had been harsh and impolite to an anxious and clingy patient with supraventricular tachycardia. He had little time for avocation and no really close friends outside of his immediate family. He presented in my office with a prewritten, three-page record of his history and tentative assessment. He told me about his background and had experienced an emotionally miserable childhood. His father, an officer in the air force, had been quite cold, sarcastic, and controlling towards his two sons. His mother was rather selfish, and the boys grew up feeling that they needed to please her and show admiration for her. In medical school he failed a significant exam in the second year, and later he realized that this was due to a depressive episode. He also suffered from low self-esteem and was vulnerable to student and resident colleagues who made fun of his clumsiness in sports. He accused himself of not being strong enough to hit back. His depression had previously been successfully treated with both antidepressant medication and cognitive-behavioral therapy, but after turning 40 he had been depressed a couple of times after periods of extreme hard work. He had no symptoms of bipolar disorder. His low self-esteem or neuroticism and his perfectionistic work attitude were clearly trait-dependent, and this became the focus in his long-term psychodynamic therapy. After 2 years in therapy, he gradually gave up the idea of going back to full-time work in the hospital, and decided to work part-time in a private practice he could share with a colleague. The increase in leisure time became a new challenge for him. In the beginning he felt guilty about just going for a walk with his wife, but he started to enjoy this and other things in life. He spent more time with his youngest son of 10, and he also started to become friends with two other men of the same age that he really enjoyed being with. He realized that his strenuous work was due to an unconscious wish for the genuine approval that he had missed in his childhood.*

Comments:

Excessive obsessiveness, conscientiousness, and perfectionism are maladaptive traits that often complicate the course of depression and affective disorders. Often these patients need psychotherapy, and long-term psychodynamic therapy with a focus on transference issues may be beneficial if they also have relational problems. The growth of a sound self and identity requires nurturing from more than just a work-performance perspective: for instance, from our relationships with partner and friends, our role as a good parent if applicable, and avocational activities. When Carl realized this, he could enjoy his reduction in work hours and, it is hoped, the rest of his life much more than he had enjoyed the last decade.

## 10.2 Epidemiology

### 10.2.1 Prevalence of Personality Traits in Physicians

The search identified 12 studies that compared personality traits among groups of physicians with traits in other physicians (e.g., specialty), other healthcare workers, or general population norms (Akiskal et al. 2005; Clack and Head 1999; Deary et al. 1996; Eley and Eley 2011; Hojat et al. 1999; Kluger et al. 1999; Lung et al. 2009; Lydon et al. 2015; Magee and Hojat 1998; Nash et al. 2009; Pajonk et al. 2011; Roback et al. 2007). None of these studies were comprised of large and representative samples of physicians, but they did include a diverse range of physician subgroups and specialties.

#### 10.2.1.1 Comparison with General Population Norms (Five Studies)

Five studies compared traits with general population norms (Akiskal et al. 2005; Hojat et al. 1999; Kluger et al. 1999; Lydon et al. 2015; Magee and Hojat 1998).

A US study compared a national sample of 188 positive role models in medicine with population norms on the BF dimensions (Magee and Hojat 1998). The whole sample of role models scored significantly higher on BF-*Conscientiousness*, whereas the male role models ($N = 164$) scored higher on BF-*Agreeableness* than other men, and the female role models ($N = 24$) scored higher than other women on BF-*Extraversion* and BF-*Openness*.

A later study of the same role models compared them with 104 internal medicine residents (Hojat et al. 1999). This study found that the residents also scored higher on facets of BF-*Conscientiousness* than population norms.

A study from New Zealand compared 364 doctors (specialist anesthetists, trainee anesthetists, and other physicians) with a community sample using the TCI and found that they were more *Cooperative* than the community sample (Kluger et al. 1999). The anesthetists were also more *Harm Avoidant* and *Self-Directed*, but less *Reward Dependent* and *Novelty Seeking* than the community sample.

In a study of 334 Irish doctors and medical students, BF-personality traits were found to be similar to norm values except that they were high in *Openness* (Lydon et al. 2015). This study emphasized the diversity of personality traits in the sample and gave no support for a specific physician personality.

Another study compared temperament profiles in different profession groups among psychiatric outpatients with matched patients outside of these professions (comparison group) (Akiskal et al. 2005). Physicians and lawyers had higher rates of obsessive-compulsive traits and dysthymic temperament than the comparison group.

Overall, while four of the five studies found differences in levels of various personality traits between selected physicians and the general population, neither the role models nor psychiatric patients can be considered representative physician samples. Nevertheless, both of these groups reported relatively high levels on the obsessive-compulsive spectrum (conscientiousness) compared with population norms. Still, there is no convincing support that the general population of physicians

differs from the nonphysician general population, due to an absence of studies with large and representative physician samples.

#### 10.2.1.2 Stage of Career and Medical Specialties (Five Studies)

Using the TCI, anesthetists in training were more *Novelty Seeking* and *Reward Dependent* than specialist anesthetists, whereas a comparison group of physicians were more *Cooperative* than specialist anesthetists (Kluger et al. 1999). Using the BF, internal medicine residents were higher on facets of *Neuroticism* than the older physician role models (Hojat et al. 1999). A Scottish study compared 39 psychiatrists with a combined group of physicians and surgeons ($N = 149$). The psychiatrists reported higher levels than the other doctors on the BF-measured *Neuroticism*, *Openness*, and *Agreeableness*, but lower levels on *Conscientiousness* (Deary et al. 1996). In a study that compared emergency physicians and paramedics with nonemergency medical doctors and medical students (Pajonk et al. 2011), the authors used a German version of the BF (Hamburg Personality Inventory). They found no homogenous differences between the groups, but rather diversity across groups. Still, a larger proportion (50–70%) of the emergency doctors and paramedics were characterized as "resilient and stable."

The previously mentioned Irish study did not find any differences in traits between specialties, but basic medical trainees (students and interns) reported lower levels of BF-*Conscientiousness* than did postinternship respondents (senior physicians) (Lydon et al. 2015).

In sum, it seems that stage of career, and perhaps age, is more important than specialty comparisons with respect to personality trait differences, but there is a paucity of studies that compare traits in large samples between different specialties.

#### 10.2.1.3 Comparisons with Nurses and Special Groups of Physicians (Four Studies)

An Australian study compared doctors ($N = 214$) and nurses ($N = 212$) on TCI-measured personality traits (Eley and Eley 2011). Doctors were lower in *Novelty Seeking*, *Reward Dependence*, and *Self-Transcendence*, but higher in *Self-Directedness* and *Cooperativeness* than the nurses. Another study compared physicians and other health professionals (including nurses) during the Asian SARS outbreak in 2003 (Lung et al. 2009). This study found no differences between the groups in EYS-*Extraversion* and EYS-*Neuroticism*.

Two other studies looked at physicians with medicolegal problems (Nash et al. 2009; Roback et al. 2007). A comparison study at Vanderbilt University using personality inventories in 88 problematic physicians found that those classified as "sexually boundary violators" showed more serious character pathology than those classified as "behaviorally disruptive" or "other misconduct" (Roback et al. 2007).

In a study among 566 Australian general practitioners, males who self-reported medicolegal matters (civil claims, Medicare fraud inquiry, disciplinary hearing, etc.) had higher EYS-*Neuroticism* scores than doctors who did not report such matters (Nash et al. 2009).

The differences in TCI-measured temperaments between the Australian nurses and doctors resemble those between trainees and already-trained anesthetists, since both the nurses and the young anesthetists were higher in *Novelty Seeking* and *Reward Dependence*. Still, effect sizes were small and we need more studies before any conclusion can be made here.

#### 10.2.1.4 What About Sex Differences? (Three Studies)

The study of physician role models found that females scored higher than the males on BF-*Openness*. Moreover, the differences between the female role models and population norms were larger than the differences among their male counterparts (Magee and Hojat 1998). Among Australian general practitioners, men reported higher EYS-*Psychoticism* scores than did women, whereas women reported higher EYS-*Neuroticism* scores than did men (as in community samples) (Nash et al. 2009). A survey on gender differences in 371 medical graduates in medicine and dentistry in London found that men reported more "leadership potential," "spirit of curiosity," and "tolerance of ambiguity and uncertainty" than women (Clack and Head 1999). On the other hand, women reported more "ability to inspire confidence in others", "ability to listen," "ability to work in team," "caring and compassionate nature," and "motivation," and being more "satisfactory at interpersonal relationships in professional life." These findings were concluded to be in keeping with existing general theories on personality differences between men and women, and therefore not doctor specific.

To sum up, it seems that doctors possess diverse personality traits, as do the general population. We have no reasons to believe that their personalities differ much from other comparable groups, such as other professionals or academics. Still, the pressures and responsibility of being a physician may be more stressful to individuals with particular traits. This should be investigated first and foremost in prospective studies.

### 10.2.2 Personality Traits as Predictors of Mental Health and Well-Being in Physicians

This section focuses on studies with prospective or longitudinal designs, because temporality is an essential criterion with respect to the possible causation and identification of any risk factors (Hill 1965). Other important criteria, such as strength and consistency of the associations between the traits and outcome, will also be alluded to and therefore some prospective studies that were not identified by the search will also be discussed.

The search above identified 14 prospective and longitudinal studies (Brewin and Firth-Cozens 1997; Finset et al. 2005; Gramstad et al. 2013; Grotmol et al. 2010; Isaksson Ro et al. 2010; Mahmood et al. 2016; McManus et al. 2004; Richman et al. 1996; Ro et al. 2008; Sen et al. 2010; Stoen et al. 2013; Tyssen et al. 2001; Tyssen et al. 2004; Tyssen et al. 2009). Seven of these were about depressive symptoms and suicidal ideation as outcomes (Brewin and Firth-Cozens 1997;

Gramstad et al. 2013; Grotmol et al. 2010; Sen et al. 2010; Stoen et al. 2013; Tyssen et al. 2001; Tyssen et al. 2004); four were about work stress and burnout (Gramstad et al. 2013; Isaksson Ro et al. 2010; McManus et al. 2004; Ro et al. 2008); two were about problem drinking (Mahmood et al. 2016; Richman et al. 1996); and three included measures of positive psychology, such as work and life satisfaction (Finset et al. 2005; McManus et al. 2004; Tyssen et al. 2009). Most of the studies were Norwegian, and 7 of the 14 studies were from the Longitudinal Study of Norwegian Medical Students and Doctors (NORDOC). This survey included the BCI in 1993 and 1994, either in medical school or in the first postgraduate (internship) year, and mental health outcomes were measured several years later. Unfortunately, the BCI has not been well validated in samples other than Norwegian.

#### 10.2.2.1 Depressive Symptoms and Suicidal Ideation

Brewin and Firth-Cozens (1997) identified self-criticism as a predictor of depression 2 years later, even when controlled for workload in the first postgraduate year, in a British cohort study of 318 medical students. In the same study self-criticism, which closely resembles neuroticism, predicted depression in the male doctors 10 years later, but not in their female colleagues.

In the same vein, a 10-year follow-up NORDOC study showed that earlier low self-esteem (which also is similar to neuroticism) partly mediated the predictive effect of perceived parental bonding on severe depressive symptoms (Grotmol et al. 2010). A 15-year follow-up of the same cohort, with repeated measures, showed that those who had reported high levels of BCI-*Neuroticism* at medical school had a threefold increase in risk for later severe depressive symptoms when controlled for other predictors (Stoen et al. 2013). Students with high levels of BCI-*Reality Weakness* had double the risk of severe depressive symptoms in the 15 years after leaving medical school. *Reality weakness* is a trait used to describe an individual's perceptions that border between reality and fantasy; and it measures chronic illusions, paranoid traits, and problems with identity-security and relationships. Torgersen intended it to capture personality pathology, such as paranoid, borderline, and schizotypal personality disorders (Torgersen and Alnæs 1989).

Sen et al.'s large cohort study followed interns ($N = 740$) from 13 US hospitals across their internship year. BF-*Neuroticism* at baseline was an independent predictor of the increase in depressive symptoms even when work-related and other predictors were controlled for (Sen et al. 2010). This study also found evidence for a genetic polymorphism effect on depression that was moderated by the neuroticism trait.

In another Norwegian cohort study of young physicians, the effect of BCI-*Neuroticism* on depressive symptoms was mediated (absorbed) by perceived job stress, whereas BCI-*Reality Weakness* had an independent and direct effect on depressive symptoms (Gramstad et al. 2013). In this study BCI-*Extraversion* protected against depressive symptoms.

With respect to suicidal ideation, a prospective study of 522 Norwegian doctors showed that both BCI-*Neuroticism* and BCI-*Reality Weakness* predicted change in suicidal thoughts from the end of medical school to the end of the first postgraduate (internship) year, even when other predictors controlled for (Tyssen et al. 2001). BCI-*Reality Weakness* was the only trait predictor for the transition of suicidal thoughts to suicidal planning from medical school to the first and fourth postgraduate years (Tyssen et al. 2004).

In all, these studies show that neuroticism, self-criticism, and reality weakness predict depressive symptoms over many years after leaving medical school. BCI-*Neuroticism* also predicted mental health treatment needs during internship in a NORDOC study that was not captured by the search (Tyssen et al. 2000). Reality weakness was the most important trait predictor of depression and aggravation of suicidal ideation over the first few postgraduate years. This finding indicates a detrimental role of personality problems in young doctors at the very stressful beginning of their career. To sum up, personality traits, particularly neuroticism, can be risk factors for depression after leaving medical school. The long-term predictive validity of neuroticism with regard to mental disorders is in keeping with several studies of other populations (Jeronimus et al. 2016). In fact, personality traits and mental disorders may share the same genes, and recently a high genetic correlation between BF-*Neuroticism* and major depression ($r = 0.56$) has been found (Lo et al. 2017).

#### 10.2.2.2 Stress and Burnout

A large 12-year British cohort study among almost 1700 senior house officers (residents) in hospitals or general practice used BF measures obtained earlier (McManus et al. 2004). The study found that *Neuroticism* was the most important independent predictor of stress 5 years later as measured by the 12-item version of the General Health Questionnaire.

This is in keeping with one of the studies mentioned above, which found that BCI-*Neuroticism* predicted job stress in the internship year (Gramstad et al. 2013).

With regard to burnout, the British cohort study also found that the emotional exhaustion factor of burnout was predicted by both high levels of BF-*Neuroticism* and low levels of BF-*Extraversion* in a multiple regression model (McManus et al. 2004).

We followed a sample of doctors that had participated in a counseling intervention for burnout at Villa Sana in two studies (Isaksson Ro et al. 2010; Ro et al. 2008). The first one found that higher levels of EYS-*Neuroticism* and lower levels of EYS-*Extraversion* at baseline predicted more reduction in burnout 1 year after the intervention (Ro et al. 2008). A 3-year follow-up found that there was a reduction in EYS-*Neuroticism*, but that the reduction in emotional exhaustion occurred sequentially before the reduction in EYS-*Neuroticism* both at the first and third years of follow-up (Isaksson Ro et al. 2010).

It seems that neuroticism is an important marker of stress-vulnerability in doctors, at least early in their career. In another prospective NORDOC study, which was not captured by the search we found that BCI-*Neuroticism* alone

predicted half of the explained variance in a multiple regression predictor model of job stress during internship (Tyssen et al. 2005). We also found that the combination of BCI-*Neuroticism* and BCI-*Conscientiousness* was the most important predictor of work stress, both in medical students (Tyssen et al. 2007) and first-year postgraduates (Røvik et al. 2007). Both studies indicate a protective effect of BCI-*Extraversion*. These findings were in keeping with Doherty and Nugent's review of cohort studies on personality among medical students; conscientiousness is a predictor of academic success early in the curriculum, but may also predict later stress among the students (Doherty and Nugent 2011). Later on, when they start seeing patients and meeting the challenges of clinical work, it seems that extraversion and openness are important protective factors for the students.

#### 10.2.2.3 Problem Drinking

Twenty years ago, Richman et al. showed that personal susceptibility (narcissism) predicted problem drinking in internship, or more specifically the interaction between narcissism and workplace abusive experiences predicted such problems (Richman et al. 1996). This is one of very few prospective studies on personality and drinking among doctors. In a recently published 15-year follow-up we identified low BCI-*Conscientiousness* measured at medical school as an independent predictor of hazardous drinking throughout the years, even when mental distress and other factors were controlled for (Mahmood et al. 2016).

Conscientiousness seems to have a protective effect against problem drinking. Consistent with this, we have found that low BCI-*Control* (or conscientiousness) at the beginning of medical school predicted hazardous drinking 6 years later (Kjøbli et al. 2004). But we need more studies on this, and in particular we need more studies on the role of narcissism with respect to alcohol and drug misuse in doctors. There are few studies on the predictive role of narcissism in medical students and doctors (see Case II below).

#### 10.2.2.4 Work and Life Satisfaction

A prospective NORDOC study of job satisfaction 4 years after graduation found that the interpersonal problem of being withdrawn was a univariate significant predictor, but the significance disappeared in the fully adjusted model (Finset et al. 2005). The study also included the BCI traits, but none of these were significant.

The large British cohort study mentioned previously found that lower levels of BF-*Neuroticism* predicted overall satisfaction with medicine as a career 5 years later (McManus et al. 2004).

In another study, we looked at life satisfaction in Norwegian doctors 4 and 9 years after leaving medical school (Tyssen et al. 2009). The doctors were more dissatisfied than a general population comparison sample matched on age, sex, and educational level. The only significant trait in the adjusted model was BCI-*Neuroticism*, and low levels of this trait predicted higher life satisfaction almost 10 years later. BCI-*Conscientiousness* predicted less increase in life satisfaction from

the end of medical school to the end of the first postgraduate year, possibly due to the detrimental effect of being overly compulsive during this stressful year.

It seems that the traits of neuroticism and conscientiousness are also important with respect to positive psychological outcomes because they reduce work and life satisfaction in physicians. Nevertheless, we need more analytical studies about satisfaction with life and work in physicians.

## 10.3 Unique or Physician-Specific Dimensions

We lack representative studies that compare physicians with the general population, but we have some quite representative Norwegian studies on doctors ($N = 814$) and police officers ($N = 3272$) aged about 40 that both include the BCI (Aasland et al. 1997; Berg et al. 2005). When mean levels between these samples are compared, the police officer sample reports significantly higher BCI-*Conscientiousness* and BCI-*Extraversion*, as well as lower BCI-*Neuroticism* than do the medical doctors. This applies to both genders, but the difference in extraversion is more prominent in women than it is in men. Effect sizes were generally small in these preliminary calculations, except for a small to medium one (Cohen's $d = 0.49$) with regard to difference in BCI-*Conscientiousness* between the two samples of women (the police officers reported higher levels).

Generally, it seems that the police officers, who are a highly selected group, possess more "healthy" or beneficial personality traits. Both higher extraversion and lower neuroticism have been linked to subjective well-being. The relatively higher level of neuroticism in doctors may explain in part the susceptibility of this group to depression and suicide. The comparison studies on depression so far have been mainly on self-reported depressive symptoms, and we still lack studies with validated diagnostic interviews that compare doctors with other samples (Mata et al. 2015).

### 10.3.1 Major Dimensions of Personality

Despite scarce evidence about a higher frequency of the obsessiveness dimension among physicians than others, this concept deserves additional discussion for two important reasons. First, conscientiousness predicts good performance and success in medical school, as mentioned above (Doherty and Nugent 2011). Second, the obsessive dimension is often referred to when stress and mental health problems in the medical profession are discussed (Myers and Gabbard 2008). As clinicians, we very often meet physician-patients with burnout and depression that struggle because of their compulsiveness, perfectionism, or overly conscientiousness. These are all traits that belong to the obsessiveness dimension. Obsessiveness was first described in the 1960s by Lazare, who had a background in psychoanalytical work and clinical experience (Lazare et al. 1966). He also described the dimensions of neuroticism and hysterical traits, and in 1980 Torgersen identified the hereditary

basis for these three major dimensions (Torgersen 1980). They are, in this sense, biologically rooted. Eysenck has also referred to these three dimensions as the "Giant Three," somewhat as an alternative to the Big Five (Eysenck 1994). It is important to acknowledge that Eysenck's *Psychoticism* trait is not obviously about being "psychotic" or "reality weak." Eysenck defined it as the "halfway stage towards psychosis," but this has later been criticized because the wording of the items suggests that high *Psychoticism* is also about being impulsive or irresponsible and not thinking things through (Torgersen 2008). Therefore, Torgersen claims that this is the opposite of obsessiveness or conscientiousness. In Table 10.1, these traits have been referred to as Not *Psychoticism*. On the other hand, psychoticism has now been included as one of the pathological traits in the new DSM-5 system, and there are parallels between some of the items in Torgersen's *Reality Weakness* and Eysenck's *Psychoticism*.

## 10.4 Developmental Issues

### 10.4.1 Biology or Social Factors?

That intrinsic maturational processes underlie personality development has been a tradition since Freud, who argued for psychosexual development as internal processes (Briley and Tucker-Drob 2014). In more recent times, Eysenck and Cloninger have linked personality to biological systems, such as the activation of reticular systems and the presence of neurotransmitters. Costa and McCrae have also followed this tradition by emphasizing the role of biology and genetics within individuals. Recent studies show that 40% of the variance in personality can be attributed to genetic factors (Vukasovic and Bratko 2015). However, there are also theories that link the development of personality to social challenges and exogenous influences. Erikson, with his focus on phases of life; Ainsworth and Bowlby, with attachment theory; and the growth of relational psychoanalysts at the expense of the orthodox ones have all paved the way for more recent and social personality models. These all put more emphasis on the role of social factors and relationships for mature personality development, and the term "neosocioanalytic" theory actually brings our thoughts back to Freud (Briley and Tucker-Drob 2014; Roberts et al. 2006).

We have known for a long time that personality changes are most common in childhood and early adulthood, and that traits are relatively stable later on. Some have even argued that personality was "fixed as plaster" already by the 20s, and McCrae and Costa and others have advocated that the five-factor model reaches a stable plateau at the age of 30 and thereafter shows no change (Ferguson 2010; McCrae and John 1992). Over the past two decades, large longitudinal studies have found that there are some changes over the whole life span, even if there is also relatively high stability. This applies to mean levels in age groups as well as to individual trajectories over the years (Lucas and Donnellan 2011).

In addition to the biological understanding of personality development and the social and contextual model referred to above, there is a third position. This is about a combination of such understandings in the case of a gene–environment interaction, or so-called epigenetic models. A recent meta-analysis of epigenetic models shows that the environmental contribution is most important in adulthood (Briley and Tucker-Drob 2014). This means that challenging changes in life, such as the classical life stages and phases first described by Erikson, may drive personality changes over the years (Hutteman et al. 2014). Several studies show that BF-measured *Neuroticism*, *Extraversion*, and *Openness* are slightly lower in older adults, whereas *Conscientiousness* and *Agreeableness* are slightly higher in older adults (Tackett et al. 2009).

### 10.4.2 The Roles of Life Events and Age

Life events may also drive personality changes, and a recent review shows that this also applies to becoming a university student and beginning a new and demanding job (Bleidorn et al. 2016). This is highly relevant for medical doctors. In the prevalence studies mentioned above, younger students and doctors showed higher levels of BF-*Neuroticism* (Hojat et al. 1999) and lower levels of BF-*Conscientiousness* (Lydon et al. 2015) than their older colleagues in more established jobs. Other population studies show the same patterns related to becoming senior students and beginning first jobs (Bleidorn et al. 2016). The effect of age may also be important here, especially with respect to conscientiousness, because this trait seems to increase over the years and then decline after the 60s in the general population, forming almost an inverted U shape across the life span (Lucas and Donnellan 2011).

To test the effect of age in nationwide representative samples, our research group compared the levels of BCI traits in one of the NORDOC cohorts ($N = 522$; mean age = 28) with those of a representative sample from the Norwegian Physician Health Survey ($N = 814$; mean age = 38) (Tyssen et al. 2000; Aasland et al. 1997). The older male doctors (by 10 years) were significantly lower in BCI-*Extraversion* and BCI-*Reality Weakness*, and higher in BCI-*Conscientiousness* than the younger doctors, although effect sizes were small (Cohen's $d \sim 0.2$). These preliminary calculations were in keeping with the large population studies above, although this applied only to the male doctors. The older female doctors were not significantly different from the younger ones in any of the BCI traits.

### 10.4.3 The Role of Latent Traits and Importance of Self-Report Bias

When we look at the stability coefficients in individuals, the differential stability coefficients of traits are relatively high in adulthood, with ranges from 0.5 to 0.8 over a 4-year period (Ferguson 2010; Lucas and Donnellan 2011). There is also

another position that takes into account the contextual influence on self-reported measures. This is the role of contextual and age-specific factors that may influence self-report on trait items. This opinion advocates quite stable "latent traits," but life phases, such as being new or established in work, may color how individuals respond to the individual items of, for example, neuroticism or conscientiousness inventories (Tackett et al. 2009). The possible measurement artifacts that adhere to self-report lead us to the next section where we discuss assessment of personality.

## 10.5 Assessment and Treatment

### 10.5.1 Inventories of Personality Traits

As mentioned above the most widely used and validated personality trait model is the BF or five-factor model. The model includes the 5 traits or dimensions, each with 6 facets (total 30 facets), and therefore the inventory (known as the NEO-PI-R) is relatively comprehensive with 240 items, although there is a short version of 60 items. The Eysenck Personality Questionnaire-Revised (EPQ-R) includes three dimensions (the Giant Three), each with 9 traits (total 27). The EPQ-R constitutes 100 items and a short version of 48 items. Cloninger's TCI includes ten dimensions or traits that are divided into seven temperaments and three characters. Each of these dimensions has 3–5 subscales that comprise 240 items altogether (TCI-R). Torgersen's original BCI consisted of 136 items that comprise 3 dimensions measured by 17 personality scales with 6 items in each. We have used a short version (BCI-36) with four dimensions (including *Reality Weakness*), and each dimension was measured with nine items. This makes the BCI-36 a very short and feasible instrument for epidemiological surveys, but unfortunately, it has not been well validated in samples other than Norwegian students and physicians. There are also other personality inventories that will not be dealt with here.

### 10.5.2 Personality Types and Characters

A single personality dimension can be difficult to recognize in an individual. A person may, for instance, have high levels of neuroticism and be either an extravert or introvert. In the first case his or her vulnerability may be more visible to others, while in the second case, it will be more hidden. To manifest recognizable personalities, it is useful to combine high and low levels of different traits into types. There are several such systems, including Cloninger's character types and the Myers–Briggs' Type Indicator. By using Torgersen's lesser known typology (Torgersen 2008) our research group studied all eight personality types in medical students

(Tyssen et al. 2007) and doctors in their internship year (Røvik et al. 2007). In this way we identified a combination of high *Neuroticism*, low *Extraversion*, and high *Conscientiousness*, which was labeled as "brooders." This type is most stressed in medical school and during internship. The opposite profile type, who score inversely on these traits, are the so-called hedonists, the happy-go-lucky ones that we easily can imagine, and who experience the least stress of all. This dichotomization of the personality dimensions produced only a limited loss of predictive power compared with that found by using the dimensions (Røvik et al. 2007).

**Case II**

*Yvonne, at 29, is a resident specializing in otorhinolaryngology and has been a patient since the beginning of residency. In medical school, she was very ambivalent about doing medicine, and she still often feels alienated to being a physician. She has musical talent and now has regrets about not taking on an artistic career. Yvonne often fell out with female student colleagues, and had difficulties in finding a boyfriend that treated her well. She complained of boundary problems when meeting a new man; she felt that she too easily went to bed with him. A structural diagnostic interview showed that she had borderline personality disorder. She had not been suicidal or acting out violently. It was obvious she had felt neglected during childhood with a mother who always worked, running her own business and a distant and cold father. We opted for long-term psychodynamic therapy. Yvonne was insecure and suspicious during the first year of therapy, and she often misinterpreted both what I said and how I looked at her. The therapy quite regularly went along with two or three calm sessions and then in the next session she could accuse me of almost anything and sometimes yell at me in anger. The session thereafter she was sorry for her rude behavior, smiled, and went like a lamb. After almost 2 years in therapy she had improved, and relaxed more in the therapy room, and obviously she was also more secure when meeting others.*

Comments:

Surprisingly often, borderline personality structure is found in medical students and doctors who find their way into treatment. Being intellectually brilliant does not protect one from severe personality problems. Most often it seems to be of the emotionally unstable type and not the type associated with dramatic acting out and suicidal behavior. But the latter type may also occur and may be complicated with alcohol and drug problems. Clinical examples include a young doctor who in panic swallowed a handful of painkillers (paracetamol and codeine) in order to kill herself, and another physician who was chased by the police while drunk and suicidal in a park. Both physicians had a diagnosis of borderline personality disorder.

When there are behavioral complications such as acting out with drugs and suicidal intentions, dialectic behavioral therapy is the "drug of choice." Cognitive behavioral and psychodynamic therapy may also be useful for selected patients. They often present themselves with emotional dysregulation, self-direction and identity problems, and troublesome relational issues. They frequently misread

communication with others and also have extraordinary problems with intimacy and sex. With regard to identity and relational problems, clinical experience has shown that long-term psychodynamic therapy can be useful. There are often early developmental deficits (<3 years old) and insecure attachments during childhood as background factors. The patients may shift rapidly in their attitudes towards the therapist and active transference interpretation and assurance are necessary to keep an adequate working alliance. Countertransference reactions can be really demanding, but supervision and support from an experienced supervisor can help considerably.

### 10.5.3 When Do Traits Become Pathology?

It is not always easy to distinguish between traits and pathology, because two people may report similar levels in a personality dimension and still exhibit large differences in their behavior and functioning. It has been a clinical rule of thumb that when a character or personality entails reduced function, with regard to social relationships and/or their vocation, this is considered a personality disorder, both in the Diagnostic and Statistical Manual (DSM-5) of the American Psychiatric Association (2013) and the International Classification of Diseases (ICD). Personality disorders are important because they may complicate the course and treatment of other mental disorders (Skodol 2015).

After a long discussion about categories and dimensions on personality disorders in the DSM-5, the Work Group in 2013 decided to retain the same ten categories as in the DSM-IV-TR (Table 10.2). However, personality disorders are no longer separate from other mental disorders since the Axis system from DSM-III and DSM-IV was removed in DSM-5. Dr. Joel Paris has written a very good

**Table 10.2** DSM-5 personality disorders

| |
|---|
| *Cluster A* |
| Paranoid |
| Schizoid |
| Schizotypal* |
| *Cluster B* |
| Antisocial* |
| Borderline* |
| Histrionic |
| Narcissistic* |
| *Cluster C* |
| Avoidant* |
| Dependent |
| Obsessive-compulsive* |
| Other specified/unspecified |
| Personality disorder—trait specified* |

*Note*: *Included in Section III of DSM-5

paperback guide to the DSM-5 for those not familiar with the new system; the chapter about personality is also informative (Paris 2015). What is new following the discussion of categories, dimensions, and clinical relevance is a "hybrid model" that builds on psychodynamic theory and understanding. The hybrid model retains only six personality disorders (labeled with an asterisk in Table 10.2), which are among the most important well validated. For instance, clinical experience shows that paranoid personality disorder very often co-occurs with other personality disorders when doing a structured clinical interview, and therefore this diagnosis may be of low discriminant validity. Furthermore, the hybrid model (in Section III of DSM-5) places more emphasis than earlier systems on the significant impairment of self (identity or self-direction) and interpersonal functioning (intimacy and empathy) as major requirements. Despite previous concerns about its utility, it has been found to be clinically useful in several aspects (Morey et al. 2014). The model includes both an evaluation of personality impairment and five broad areas of pathological personality traits. These deviant traits build on the pathological variants of BF that were developed prior to DSM-5 (Widiger 2015). As it involves a new emphasis on pathological traits we will discuss them in more detail.

### 10.5.4 Pathological Personality Traits

The original personality inventories such as the EPQ and NEO-PI-R have been criticized by clinicians for not capturing trait pathology in psychiatric patients. One exception was Eysenck's *Psychoticism*, which was intended to identify some deviant trait expression or early signs of mental deterioration. Torgersen also developed his *Reality Weakness* trait on this basis because it was associated with borderline, paranoid, and schizotypal personality disorders (Torgersen and Alnæs 1989). Examples of *Reality Weakness* items are as follows: "I experience myself as being totally different at different points in time," "Sometimes I live in a fog," "It is difficult for me to trust people because they so often turn against me or leave me in the lurch," and "Every now and then I get strange thoughts in my head that I cannot get rid of." The first two items showed the highest correlation with aggravation in suicidal thoughts in young doctors (Tyssen et al. 2004), and similar statements are often heard clinically among borderline patients.

Later, pathology versions of the BF were developed and this work has laid the foundations for the pathological traits in the DSM-5 (Widiger 2015). The five domains of DSM-5 pathological traits are called *Negative Affectivity*, *Detachment*, *Antagonism*, *Disinhibition*, and *Psychoticism* (American Psychiatric Association 2013). *Negative affectivity* (versus emotional stability) resembles BF-*Neuroticism* but with frequent experience of negative emotion that leads to behavioral and interpersonal dysfunction. *Detachment* is about such low levels of BF-*Extraversion* that social isolation and restricted affective experience result. *Antagonism* is the

opposite of BF-*Agreeableness*, putting the individual at odds with other people because of an exaggerated sense of self-importance and expectation of special treatment. *Disinhibition* (versus BF-*Conscientiousness*) is about an orientation towards immediate gratification and impulsive behavior driven by current thoughts and external stimuli. *Psychoticism* (versus Lucidity) is about exhibiting culturally incongruent odd, eccentric, or unusual behaviors and thoughts. Both Disinhibition and Psychoticism in this definition can resemble BCI-*Reality Weakness.*

**Case III**

*Roger is 40 and runs a private practice in dermatology. He did his half-year internship in family medicine in a remote rural area with quite stressful call-work including long drives at night for visits. He lost sleep and started to self-medicate with benzodiazepines to relax and get to sleep. Gradually, he increased the doses over the years and he was reported by the pharmacy agent to the State Board 15 years later for prescribing daily doses of up to 25 tablets of 5 mg diazepam. He had managed to run his practice without any reported mistakes or patient complaints. His wife had not noticed his drug abuse, but she had noticed that he had become a little more tired in the evenings … On a couple of occasions he had tried to quit the medication on his own without succeeding. After receiving a letter from the State Board he had abruptly discontinued the benzodiazepine medication over a period of 1 week. On admission he was very tense with withdrawal symptoms and on the verge of developing delirium tremens. In a structural diagnostic interview, he scored above threshold for narcissistic personality disorder. He was medicated and relaxed, but he waited quite a long time (6 months) for the decision from the Board. His license was revoked for 2 years and over this time he had to prove abstinence by urine tests and have regular consultations with a psychiatrist to get his license back.*

Comments:

Doctors are at risk of self-prescribing hypnotics and minor tranquilizers for different reasons. In particular, benzodiazepines and other hypnotics are dangerous with respect to developing dependence. Self-prescribing is a slippery slope, and physicians with more narcissism may be at particular risk, because they have a strong fear of accepting their own weakness and may consider themselves more able to manage prescribing their own medication. Typically, Roger had discontinued the medication on his own before admission, but lacked knowledge about how dangerous this could be with benzodiazepines and did not know that a gradual reduction is recommended (e.g., 10% every week). Physicians often have inadequate knowledge about substance use disorders, because attention to them as part of the medical school curriculum is almost universally deficient, especially given how prevalent these disorders are in clinical practice. In Norway there is often a long wait time for a decision from the Board, and this can be quite frustrating for the doctors, who are at risk of suicide when being under surveillance (Finlayson et al. 2016; Lindeman et al. 1997).

### 10.5.5 Clinical Considerations

To go into detail about the treatment of specific personality disorders in physicians is beyond the scope of this chapter. For more details, the reader is referred to Chaps. 6 and 7 in the excellent handbook by Myers and Gabbard (Myers and Gabbard 2008) or the practical guide by Beck and colleagues (Beck et al. 2016). One common misconception is that personality disorders are untreatable. This is simply not true. The most effective treatment is psychotherapy (Skodol 2015; Leichsenring and Leibing 2003).

Four issues derived from clinical experience are emphasized below.

First, be careful not to miss personality problems in physician-patients. Remember that doctors can be excellent clinicians, perform very well, and still have serious problems with themselves and their relationships with others. We may, as doctors and therapists, easily overidentify with colleague-patients and miss what really troubles them. Carl, the cardiologist at the beginning of the chapter, presented with his own written history. History taking and diagnosis may be seductively "easy" with many doctor-patients, but be as accurate and strict with regard to assessment as with any other patient. Most doctor-patients appreciate that we are conscientious and rigorous in using symptom-rating scales and structured diagnostic interviews.

Second, most traits or personality dimensions have positive and negative aspects. For instance, we would prefer doctors to be quite conscientious in order to perform well and take care of their patients. But being overly conscientious or perfectionistic may drive them to burnout and depression, which may, of course, impact upon their performance. As the saying goes, "The perfect may become the enemy of the good." In the same vein, a certain level of self-criticism may be better than being too low on this trait (neuroticism). The vulnerable doctor may be more sensitive and have more capacity for empathy than the one who is apparently strong and callous. In addition, a discrepancy can occur between how individuals think they perform and how they really do. For example, during medical school some of the self-critical students who were most afraid of failing were those that got the highest marks on exams!

Third, if there are alcohol and drug problems, they should be dealt with at the beginning of therapy, to avoid acting out issues that should be included in the therapy. It is important to remember that doctors not only self-prescribe medication, but they frequently also adjust the dosage of drugs that have been prescribed by others, so being scrupulous in checking what the doctor-patient actually takes may reveal differences from how the prescription appears in the medical record. Always assess suicide risk in doctors with personality disorders, and remember that substance use disorders can lower the threshold for suicidal behavior.

Fourth, doctors should have the same high quality of treatment as any other patient. There are some obstacles to the patient-doctor relationship when the patient is also a doctor. The doctor-patient is often reluctant to seek help, and will easily deny their own problems or even feel that they are not sick enough to deserve any treatment. In addition, confidentiality is often problematic. The doctor-patient may be well known to those who provide treatment but is still entitled to the same

professional secrecy as any other patient. Personality diagnoses, in particular, should be kept highly confidential. Although more doctors should be offered, and would benefit from psychotherapy to modify personality problems, this is often compromised by their busy work and confidentiality issues. Some doctor-patients will need medication, especially if there is a comorbid mood disorder, and combined therapy from a physician that is also a trained psychotherapist can be the best and most feasible course of action.

## Key Points

- There is no empirical evidence for a specific physician personality, but we lack large and representative comparison studies.
- The neuroticism trait is a risk factor for stress, depression, and reduced well-being in physicians as well as in the general population.
- Conscientiousness may be both beneficial (to reduce drinking and increase performance) and detrimental (for stress and burnout) in physicians.
- Reality weakness is a pathological trait that has proved to have predictive validity in Norwegian physicians with respect to severe depression, suicidal ideation, and lack of help seeking.
- About 40% of personality traits are attributed to genetic factors alone; the remainder are influenced by social factors and developmental phases of life.
- Despite being relatively stable after young adulthood, traits may develop and change over the whole life span, suggesting that traits causing dysfunction can also change with treatment.
- Personality disorders in physicians may easily be overlooked, and there are obstacles to the patient-doctor relationship when the patient is also a physician.
- Personality disorders may complicate the course and treatment of other mental disorders.
- Psychotherapy is effective in the treatment of personality disorders.

## Glossary

The Big Five (BF) inventory identifies five major factors of personality:

- *Neuroticism* refers to being anxious, irritable, and sensitive, often combined with low self-esteem and high self-criticism. Moreover, there is typically a tendency to feel guilt, shame, and sadness.
- *Extraversion* refers to being social and outspoken, often enjoying company. This trait is characterized by joy and energy, seeking of stimulation and excitement. Persons with this trait are often in leadership positions.
- *Openness* is characterized by curiosity and lively fantasy, often with daydreaming. Persons with this trait frequently have artistic talents and high awareness of

their own feelings and esthetics. They are not very traditional, often liberal and antiauthoritarian.
- *Conscientiousness* refers to being orderly, organized, and capable of fulfilling tasks. Persons with this trait think things through well; they are hard-working and morally responsible.
- *Agreeableness* is about being generous, and refers to concerning oneself with others and their well-being. The trait is characterized by being honest and sympathetic and not being skeptical towards others.

The Temperament and Character Inventory (TCI) consists of three major personality types:

- *Harm Avoidant* refers to being worried and pessimistic, fearful and doubtful, shy versus outgoing, and also fatigable versus vigorous.
- *Reward Dependent* type is characterized by being warm and sentimental, dedicated and attached, dependent upon others, and a need to please others.
- *Novelty Seeking* is about being curious and exploratory, impulsive and disorderly, and extravagant and enthusiastic; persons high on this trait seek challenges and excitement.

The Eysenck (EYS) "Giant Three" includes the following:

- *Neuroticism* is comparable to the corresponding BF term.
- *Extraversion* is comparable to the corresponding BF term.
- *Psychoticism* refers to being impulsive, not thinking things through well, tough-minded or aggressive, not warm and mild; persons high on psychoticism are less empathic, but can be creative.

The most recent version of the Basic Character Inventory (BCI) has four dimensions:

- *Vulnerability* or *Neuroticism* is comparable to the corresponding BF term.
- *Extraversion* or *Intensity* is comparable to the corresponding BF term.
- *Control* or *Conscientiousness* is comparable to the corresponding BF term.
- *Reality Weakness* refers to having bothering thoughts and ideations on the borderline between reality and fantasy. Persons with this deviant trait have self-direction and identity problems, and they are often distrustful and suspicious towards others.

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