

# Osobowość typu D i choroba sercowo-naczyniowa: przegląd literatury

## Personality D type and cardiovascular disease: a literature review

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### Streszczenie:

Na przestrzeni lat naukowcy skupili się na określeniu specyficznych cech osobowości związanych z konkretnymi objawami choroby. Zdrowie psychiczne i stan psychiczny oraz cechy osobowościowe zostały zbadane i zidentyfikowane jako niektóre z czynników prognostycznych choroby sercowo-naczyniowej, jak i fizyczne, takie jak nadciśnienie tętnicze, hiperlipidemia i cukrzyca. W tym artykule skupiono się na charakterystyce osobowości typu D oraz sposobie jego wpływu na początek choroby sercowo-naczyniowej, rokowania i jakość życia pacjentów. Osoby o różnych cechach osobowości różnią się w zależności od choroby. Dokładniej mówiąc, u pacjentów z osobowością typu D stwierdzono, że mają słabe zdrowie ogólne i cierpią z powodu różnych stanów zagrażających życiu. Typowa osobowość typu D i psychiczne cierpienia są ogólnie sugerowane jako przyczyny złego rokowania u chorych na choroby sercowo-naczyniowe, ponieważ pacjenci są mniej przyzwyczajeni do terapii i mają wiele niezdrowych nawyków związanych ze stylem życia, takich jak palenie tytoniu i niskie poziomy aktywności. Wydaje się, że należy zwrócić uwagę na cechy psychiczne i typy osobowości, jako czynniki ryzyka lub czynniki chroniące chorobę układu sercowo-naczyniowego.

**Słowa kluczowe:** rodzaje osobowości, osobowość D, choroby sercowo-naczyniowe

### Abstract:

Over the years, researchers have focused on identifying specific personality traits associated with specific disease manifestations. Mental health and psychological status, as well as personality characteristics, have been studied and identified as some of the prognostic factors of cardiovascular

disease, along with physical ones, such as hypertension, hyperlipidemia and diabetes mellitus. This article focuses on Type D personality characteristics and the way it may affect the onset of cardiovascular disease, the prognosis and quality of life of patients. People with different personality characteristics adjust differently to disease. More specifically, people with type D personality have been found to have poor general health and suffer for a variety of health-threatening situations. Type D personality and psychological distress, in general, have been suggested as causes for poor prognosis for patients with cardiovascular disease, as these patients are less adherent to their therapy and have a number of unhealthy lifestyle habits, such as smoking and low activity levels. It seems necessary that attention should be paid to psychological characteristics and personality types, as risk or protective factors for cardiovascular disease.

**Keywords:** personality types, personality D, cardiovascular disease

## **Introduction**

Cardiovascular diseases are the major cause of death and disability in the western world as it has been stated by World Health Organization [1]. In 2012, worldwide, the 31% of deaths were attributed to cardiovascular diseases[1]. The increasing trend in deaths due to cardiovascular diseases has been attributed to the continuous ageing of the population. By the year 2030 more than 23.600.000 people are expected to die of coronary disease [1].

Research on cardiovascular disease risk factors is focusing on biologic and lifestyle factors. Hypertension, hyperlipidemia and diabetes mellitus seem to be the main reasons for the onset of cardiovascular disease[2]. Psychologic and social factors, such as social beliefs about health, personal relationships and personality types are stated as important prognostic indicators for health and illness. Moreover, acute and chronic psychological burnout and stress have been incriminated for cardiovascular diseases as well [3].

The role of psychological status and mental health disorders as causative factors, or the ones affecting the onset, development and therapy of cardiovascular diseases, has been proven[4-7]. Personality characteristics has been also studied in these surveys. It has been found that there are differences in the way people, with different personalities, perceive and explain disease symptoms and seek for advice from healthcare professionals [9,10].

It is since the early 1970s that researchers have been focusing on the effect of type A personality on cardiovascular diseases [11]. The oppression, suppression and avoidance of emotion expression have been also found to be connected with cardiovascular diseases [8,9]. In the last decades, however, it is becoming more and more common to relate cardiovascular disease to a new type of personality, called personality type D[12-15]. More specifically, poor clinical prognosis, physical and mental status have been associated with type D personality in patients with cardiovascular disease [16]. In addition, other studies have shown that type D personality has been detected in a significant proportion of patients with cardiovascular disease, reaching from 24% to 37% [17,18]. This is why

type D personality has been added to the classic risk factors for developing cardiovascular disease [17-19].

The purpose of this literature review is to describe the characteristics of personality type D and their relationship to the manifestation and progression of cardiovascular diseases, aiming at improving the delivery of care of patients.

## **Review**

### **Personality types**

For many years, researchers have focused on identifying specific personality traits associated with specific disease manifestations. Major scholars of the psychosomatic school, as it was named, such as Dunbar and Alexander, created the “personality profile” which seemed to be associated with chronic conditions like peptic ulcer or asthma[10].

Five types of personality have been identified based on their main characteristics[personality A, B, C, D and H]. This classification is not referring to pathological personalities. People with type A personality are described as outgoing, ambitious, competitive, aggressive, impatient, hyperactive, workaholics, even during vacation time, with increased sense of control and unrealistic perception of real urgency [11,13,20]. Studies have shown that type A personality is associated with hypertension, higher incidences of arrhythmia and major coronary heart diseases [21-24]. Type B individuals are the opposite of type A’s. They experience lower stress levels, enjoy achievement regardless of winning or losing, they are more relaxed, creative and reflective. On the other hand, type C personalities are lonelier, less assertive but with high levels of stress, difficult in expressing emotions, and more vulnerable to depression. This type of personality tends to be controlling for others as well as themselves and has been linked to cancer [25].

Type D personality is similar to type A, with negative feelings and social isolation added to the already mentioned characteristics. Denollet [12] was the first to introduce the term personality D, where D stands for the word Distressed, and it was originally used to study the influence of various personality characteristics on people with coronary artery disease. In the 2000s, the term was used in order to assess bad physical and mental health [26]. Personality D, in clinical psychology, is described as the one characterized by negative emotions such as anxiety, irritability and depression [27]. Individuals with personality D have two main features: negative affectivity and social inhibition. They are experiencing negative emotions and the tendency of not revealing them due to fear of rejection or disapproval from others. People with type D personality are prone to depression and experience difficulties in accepting and utilizing social support and coping [27-30]. Furthermore, they are more likely to smoke more, have higher level of plasma glucose, cholesterol and C-reactive protein [31,32].

Finally, people with type H personality have a deep sense of commitment to their personal values and beliefs; they are in control of their lives, they are challenged by any problem or difficulty and do not give up easily [13,28-30].

### *Negative emotions*

People with negative emotions have high levels of stress and frustration regardless the period of time or situation in which they are evolved, even if it is not threatening. In general, it is believed that people with negative emotions are mainly focused on the negative side of things [33]. They tend to complain quite often and constantly blame themselves and others for everything [10]. Moreover, they experience more intensive feelings of distress, physical symptoms and have low self-esteem. It is not unusual for them to report mild or intense chest pain, with or without actual coronary artery disease.

### *Social inhibition*

People with social inhibition are characterized by passivity. Their main feature is isolation, shyness and emotional seclusion during social interactions [29]. They refuse to share their feelings and are overwhelmed by fears of disapproval and rejection [10]. They are people superficially calm that avoid interpersonal conflicts. This calmness is interrelated with excessive self-control, which characterize type D personality. In fact, social inhibition reflects the way in which the person faces negative emotions [29].

Social activities for these people are causing insecurity, anxiety and other negative emotions leading to hyper secretion of cortisol in any social activity [34] causing adverse effects on cardiovascular system, such as high blood pressure and/or increased pulse rates and perspiration [35].

The combination of negative emotions and social inhibition may be viewed as a form of stress that can cause or aggravate various health problems [12,35].

### **Cardiovascular disease and type D personality**

Type D personality was originally defined in order to identify patients with cardiovascular disease who had an increased risk of emotional and personal disorders, such as post-traumatic stress, anxiety, depression and exhaustion. It seems that it is associated with increased morbidity [37], poor quality of life [37], poor prognosis and mortality [38] in patients with cardiovascular diseases [28,39,40]. In addition, people with type D personality have poor general health and a lot of health-threatening situations [41-43]. In general, type D personality ranges from 13% to 25% in general population, whereas in patients with cardiovascular disorders it reaches 26% to 53% [29,44,45].

Literature data show that type D personality is positively associated with high morbidity and mortality in coronary artery disease patients and negatively with health related quality of life [46]. People with type D personality seem to react differently in any cardiovascular stress. In particular, secretion of cortisol is particularly high in those

individuals leading to high blood pressure. In addition, increased rate of infections is also quite common. Patients with cardiovascular disease and type D personality are usually neglecting regular blood tests and their medical visits leading to delayed diagnosis and treatment of any medical problems. Type D personality is also associated with lifestyle risk factors, such as smoking, metabolic syndrome and low activity level which can partly explain the relationship with risk of cardiovascular diseases [16,39,47].

Metabolic syndrome and unhealthy lifestyle habits are major risk factors for cardiovascular disease and diabetes mellitus. Metabolic syndrome is a combination of risk factors including central fat deposition, glucose intolerance or insulin resistance, dyslipidemia and hypertension which progressively contribute to atherosclerotic process due to cardiovascular diseases and diabetes. Factors such as smoking, excessive alcohol consumption, unhealthy diet and insufficient physical activity are also associated with cardiovascular disease [48]. Steca et al [11] reported that individuals with metabolic syndrome were at higher cardiovascular risk. Moreover, Svansdottir et al [40] stated that patients with cardiovascular disease and type D personality had high levels of depression and unhealthy habits, such as smoking. In the mid-1990s, Denollet et al [13] reported that not only biological factors play an important role in five-year survival in patients with ischaemic stroke but personality D also. In another study by the same main researcher, it was found that mortality or myocardial infarction in cardiovascular patients with personality D was four times higher [39].

In a study by Pelle et al [49] in patients with coronary heart disease it was found that individuals with type D personality had a lower general health than those with other types of personality. In another study by Yu et al [17] it was demonstrated that patients with type D personality had lower morale and were in more severe condition as compared to those with other personality types. Morys et al [10] concluded that 52% of patients with coronary artery disease had also the specific personality type.

In addition, Borsoi et al [50] in a study of patients undergoing dynamic ultrasonography with dobutamine-atropine, have shown that people with type D personality complained more frequently of chest pain than individuals who did not have the previously mentioned personality. Finally, in a study of Mommersteeg et al [51] it was stated that patients with the personality type under study, reported poor health with emotional distress and chest pain. Similar were the results in Greek patients [52]. An increased risk of atrial fibrillation occurrence was reported by Kelpis et al [52]. In conclusion, Williams et al [53] stated that patients with the above described characteristics had low adherence to medication therapy.

## **Conclusions**

Cardiovascular diseases are one of the leading causes of death and disability in modern western societies. Most studies on risk factors are focusing on biological and lifestyle issues, but acute and chronic psychological stress has been also implicated for the

pathogenesis of cardiovascular disease, as it was reported by studies on the role of psychologic factors and mental health.

In recent literature, there are references to connection of cardiovascular disease to a new personality type, type D, which characteristics are a tendency to depression and difficulties of acceptance and use of social support. Type D personality is associated with morbidity and mortality in coronary artery disease patients and is adversely affecting their quality of life. Lifestyle, such as smoking, metabolic syndrome, low level of activity and non-adherence to medication are, also, associated to type D personality. Further and more detailed research on the potential connection of cardiovascular manifestations is needed.

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