

# The relationship between leadership styles and the risk of developing Cardiovascular Diseases (CVD) among nurses

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## ABSTRACT

Cardiovascular disease (CVD) is a major cause of disability and premature death throughout the world and a very serious matter of public health. Amongst the psychosocial factors that have been documented to increase the risk of CVD is stress, but the causative mechanisms remain unclear. Nursing is one of the occupations with the highest prevalence rates in job stress. Relationships between staff nurses and nurse managers are particularly important when examining stress and burnout. Although there is no convincing evidence that stress, and in particular job stress, causes health effects, the indirect evidence is strongly suggestive of work stress effect. Therefore, since there is not direct link between leadership styles and CVD, this study aims to look into the relationship between leadership styles and CVD, through burnout. This paper first focuses on the background information and the gap in the literature and then it goes on to look at research evidence to establish the possibility of an association between leadership styles, burnout and CVD.

**Key Words:** burnout, cardiovascular diseases, leadership, nursing, stress.

### HIGHLIGHTS/KEY POINTS

- There is a gap in literature regarding the association between nursing burnout and CVD
- Nurses can be exposed on a daily basis to a large number of potential stress factors
- Burnout is really costly as it leads to job absenteeism and low job performance
- Work related stress/burnout associates positively with cardiovascular conditions

### INTRODUCTION

According to the World Health Organization (WHO) during the previous few decades, cardiovascular diseases (CVD) has become a primary cause of death and disability worldwide, with major impact on both developed and developing nations (WHO 2011). It has been recognized that psychosocial factors related to the social environment such as job stress, increase the risk of development CVD (von Känel 2012). Research evidence has shown that health professionals are a group at significant risk from the negative effects of stressful workplaces, with nurses at risk from stress-related problems, with high rates of turnover, absenteeism, and burnout (Kirkcaldy & Martin 2000). Ultimately, excessive exposure to stressors or/and work-related stress that is left unaddressed could result in the development of burnout (Maslach 2003). Likewise, factors such as poor working relationships, absence of adequate supervisory or peer support and poor leadership style have been reported to be connected with burnout (Demerouti et al. 2000). In fact, research studies have indicated that most nurses do not have or perceive supportive leadership (Spence 2004).

In the past, the effects and consequences of job stress and burnout was not seen as prominent workplace problem, however, due to the impact of burnout on both individuals and organizations, its prevention is a challenge for healthcare institutions. Reducing work stress is important to prevent the development of stress-related diseases, such as CVD, and to promote employees health. Hence, the aim of this study is to identify the relationship between leadership styles used by nurse leaders and cardiovascular diseases. However, since there is no direct link between leadership styles and CVD, this study will try to investigate the

relationship of these two topics, by interlinking leadership styles with burnout, and burnout with CVD.

### CARDIOVASCULAR DISEASES AND BURNOUT

The term “cardiovascular diseases” can enclose a wide range of illnesses, such as coronary heart disease, congestive heart failure, congenital heart defects, and infectious cardiac disease (Institute of Medicine 2010). There is a range of serious risk factors, which have an effect on developing CVD; among them are behavioural risk factors such as tobacco use and physical inactivity, metabolic risk factors such as diabetes, and other non-modifiable factors such as gender, genetics and race (WHO 2011). However, psychosocial factors such as psychological stress are widely believed to be an important determinant of heart disease (Hemingway & Marmot 1999). Exposures to such factors may directly influence health through physiological changes or indirectly through their association with unhealthy behaviour (Macleod et al. 2002).

The hypothesis, how stress through physiological mechanisms can influence health directly, and therefore increase cardiovascular disease risk, can be explained in several ways. For instance, stress could influence the risk of disease via direct effects on stress hormones. These hormones are not harmful for individuals if they are present for short periods of time. However, if energy is demanded for very long periods, combined with deficient resting, the stress hormones affect serum lipids, coagulation and inflammation and result in accelerated coronary atherosclerosis (European Health Network 2006). Also during emotionally upsetting conditions, the demand for oxygen increases, as heart starts beating harder and faster. If this continues for extended periods of time, a myocardial infarction may appear despite the fact that the arteries may not be totally blocked (European Health Network 2006). On the other hand, exposure to stress and burnout might also change people’s behaviour. These behavioural or lifestyle changes include increased tobacco smoking, consumption of foods with high levels of calories, fat and carbohydrates and higher intake of alcohol and coffee. Besides that, stress may have an effect on decreasing physical activity, onset of hostility and anger, and sleep problems. Thus, these lifestyle behaviours increase the risk of cardiovascular disease (European Health Network 2006). However, it is particularly difficult to estimate the independent impact of each factor because they are interconnected in many different ways. For instance, dietary habits influence blood lipids and exercise influence blood pressure.

In the previous years, the effects and consequences of job stress was not seen as major workplace problem, but recently more and more organizations realise the impact of these conditions on employee health. Wicks

(2006) defines secondary stress in healthcare, as the one caused by the pressure placed on professionals who care for others in need. It is also known as “burnout” and “compassion fatigue”. As an organization, the hospital creates serious psychological impacts on nursing staff, which can lead to an increase in error rates, absenteeism and low productivity due to burnout (Bianchi 2004). This happens because nurses are exposed on a daily basis to a large number of potential stress factors. Workplace stress generators that might have impact on nurses are identified in nine sub-scales: conflict with physicians, inadequate preparation, problems with peers and supervisors, discrimination, workload, uncertainty concerning treatment, dealing with death, dying patients, and their families (French et al. 2000 cited in McVicar 2003).

Burnout is a form of psychological stress and not a clinical diagnosis (Firth-Cozens & Payne 1999). It was defined in one of the first academic books as a “progressive loss of idealism, energy and purpose experienced by people in helping professions” (Edelwich & Brodsky, 1980 cited in Wicks 2006:18). Furthermore, Ruotsalainen et al (2008) describe burnout as a persistent, negative, work-related state of mind in “healthy” individuals, which is characterized by exhaustion, distress, low effectiveness and the development of dysfunctional attitudes at work. Maslach (1982) cited in Thomas (2009), described three phases of burnout. In the first phase, persons begin to feel emotional exhaustion and drain. Later, they develop negative feelings about their patients, co-workers, and themselves and finally their ability to perform in their workplace is decreased. Additionally research shows that regardless the nursing ward (intensive care, surgery or psychiatric), some of them will develop burnout and some will not (Thomas 2009).

The concept of burnout has been debated because similar symptoms and signs are seen in other disorders such as depression and anxiety (Wicks 2006). Clearly, burnout and depression are characterised by similar symptoms, but they also have differences. This is because individuals with depression are usually overwhelmed by listlessness and lethargy and they hold on to ideas of guilt. Alternatively people with burnout, present their complaints much more vigorously and feel disappointed and aggrieved (Firth-Cozens & Payne 1999). Poncet et al. (2007) reported that the key difference between the two syndromes is where they occur. Depression affects nearly every aspect of the individual’s life, but symptoms of burnout occur only at the workplace. Also, the costs of burnout are even higher than stress and affect not only the welfare of the individual but also influence his family, friends, and colleagues. High levels of burnout have been more prevalent in healthcare professions, especially nursing.

Apparently, burnout is a serious concern, not only because it affects patient and nurse well-being but also because it will result in the tragic loss of high skilled nurses, and therefore the functioning of the organization (Poncet et al. 2007, Thomas 2009).

### LEADERSHIP STYLES AND BURNOUT

Stress in the workplace, and the psychological status of the subordinate are primarily modified or influenced by supervisory leadership (Seltzer & Numerof, 1988). In fact, Clegg (2001) states that leadership style is associated with reduced levels of occupational stress. This shows that this relation is present and consequently, depending on the leadership style and the leader him/her-self, will determine if occupational stress will or will not be appear. Through the years leadership has been variously defined. It was defined as a relationship where a specific person influenced other people’s activities and behaviours (Mullins 1999). While certain people argue that leadership is about possessing a set of conceptual abilities, others argue that leadership consists of actually having a vision using an emotional front, caring for followers and being a role model. Followers on the other hand, trust the leader and will achieve goals collectively by respecting, believing and following a leader’s decisions (Barr & Dowding 2012). As it can be seen from the different definitions, in different times, leadership encountered an evolution that is still ongoing.

From an organisational point of view, burnout was defined first by Boyd (1978) as a syndrome or physical state, mental and emotional exhaustion in response to chronic and repetitive organisational stressors (Boyd 1978 cited by Gill et al. 2006). This definition was further elaborated by Leiter and Maslach in 1988 by stating that burnout was found to be related to low organisational commitment (Gill et al. 2006). This shows that for the organisation, the outcomes of burnout are really costly as they lead either to an undesirable approach toward job performance or negative behavioural aspects.

In his book “Leadership and nursing care management”, Nagelkerk (2005) emphasizes on job stressors by explaining that nurses experience stress deriving from various sources, with the most common being patients who are dying or are in pain, emergency treatments, co-workers, leaders, unsafe work conditions. Nagerklerk (2005) adds that when stress is too great on the job, nurses experience burnout. However, in order to relate stress to leadership, the cause of nurses’ job stress must be analysed. The causes of burnout can be explained in many ways. There are three different categories of potential risk factors for burnout; “work environment”, “demographic variables” and “personality”. For instance, work overload, lack of control, insufficient reward, lack of fairness and conflict in values are some

of the potential risk factors under the umbrella of work environment, which is the focus of this study (Maslach 2003). One of the major causes of burnout among nurses is the amount of time spend each day for patient care, especially with the advent of extended shifts (Rogers et al. 2004). Also, factors such as changes in healthcare implementation cause feelings of disillusionment and uncertainty among nurses. Another source of stress has been found to be the traditional domination of physicians (Maslach 2003). Lastly, nursing leaders have a key role in creating constructive work environments that can have a major impact on how nurses perform and, eventually, on the excellence of the care they provide (Greco et al. 2006).

The nurse leaders' job, being the staff's supervisor, has a radical influence over nurses, and his or her behaviour towards staff is very critical for the formation of a work environment. McVicar (2003) scrutinized the causes of workplace stress and according to his findings, workload, leadership and management style and professional conflict with other nurses or physicians have all been sources of distress for nurses for many years, but the disagreement is in the magnitude of their impact. In other words, workplace stress is formulated by the leadership style that is used. There are numerous leadership characteristics that a leader uses in different situations; these include: formal and informal leadership, direct and indirect leadership, clinical and non-clinical leadership, and political and organisational leadership (Hartley & Bennington 2010). However for the purpose of this report, the focus will be on the context of clinical leadership, which occurs in the nursing workplace. The focus of clinical leadership is to facilitate theoretical practice and improve patient outcomes through local care (Milward & Bryan 2005 cited by Hartley & Bennington 2010). Nursing leadership literature mainly looks at direct leadership and its impact (Hartley & Bennington 2010). Focusing on this impact is needed in order to understand effective clinical-managerial leadership relationships and its impact on nurses.

### **Research evidence on the association between burnout and CVD**

As explained earlier, there is no direct correlation between leadership styles and burnout. The focus of this research is to identify a possible correlation between workplace stress factors/burnout and cardiovascular diseases, based on the available research data. Although many researchers have attempted to measure burnout levels among healthcare professions, very few research studies have investigated the correlation between burnout and CVD among nurses or other healthcare professionals as the literature review revealed.

As described earlier, high levels of burnout have

been documented in healthcare professions due to the fact that these professionals have been trained to put the patients' needs above their own. Each day at work, they are exposed to high levels of emotional strain because they are dealing with persons who are sick or dying and have excessive physical and emotional needs. For that reason, and coupled with other stress factors in the work environment, healthcare professionals, especially nurses, are more vulnerable to burnout (Maslach 2003). This argument has been substantiated by a major study conducted by Aiken et al. (2001), in which a large number of health professionals were studied in 711 hospitals located in five countries. The goal was to obtain information about organizational climate, nurse staffing, and nurse and patient outcomes. The results obtained from this study showed that the rates of stress and burnout were approximately 40% higher in nurses than other healthcare professionals.

A previous study by Lynch et al. (1997), has investigated the association between workplace stress factors such as job demands and economic reward in relation to a 4-year progression of carotid atherosclerosis in a population sample of 940 Finnish men. To examine this association indicators of atherosclerotic process were used, particularly ultrasound scanning of carotid arteries (B-mode imaging of intima-media thickness). The results of this study showed that men who had jobs with high demands and low economic rewards had significantly ( $p=.008$ ) greater 4-year progression of plaque height and maximum intima-media thickness ( $p=.03$ ) than men with low-demand, high-income jobs. Also these findings increase the evidence that factors connected with work environment are important in the development of atherosclerotic vascular disease before the appearance of clinically relevant and more distal manifestations of the disease process (Lynch et al. 1997). Additionally, a recent study conducted by Chandola et al. (2008) investigated the accumulation of work stress in association to higher risks of coronary heart disease (CHD), and how work stress affect CHD. The study found that work stress is an important risk factor of CHD among working-age populations. They concluded that, stress in the workplace has an impact on CHD development, through effects on neuroendocrine stress pathways and health behaviours. Specifically, around 32% of work stress on CHD can be explained by health behaviours such as low physical activity, poor diet, and metabolic syndrome. Surprisingly, the association between work stress and CHD was stronger among employees younger than 50 years old. Lastly, the study adds to the literature since it has shown a linear association between work stress and CHD events, metabolic syndrome, and lower heart variability.

Another important finding of the correlation of psychological stress and CVD came from the cohort

study from Macleod et al. (2002) in Scotland. This prospective observational study investigated the association between self-perceived psychological stress and cardiovascular disease in a population where stress was not associated with social disadvantage. The study follows up 8.229 participants over 21 years through two screening measures from baseline until the end of the study. The results from this study show a higher rate of hospital admission with higher stress. This was most strongly apparent in relation to psychiatric disorders. Higher stress also strongly predicted admissions related to hypertension, varicose veins, and ill-defined cardiovascular conditions. Another important finding was that stress showed typical associations with unhealthy behaviour such as alcohol consumption, high BMI, smoking and low exercise (<3 hours weekly). All these unhealthy behaviours were statistically significant ( $p > 0.05$ ). It is important to note that adjustment for social position and risk factors made little difference to most of these estimates. Last of all, Kuper and Marmot (2003) performed a large-scale research study of 10308 male and female civil servants aged 35–55 years old in London, to investigate the association between work-related stress and components of the job strain model and CHD risk. The results of the study showed that the combination of high job demands and low decision latitude, which is job strain, was associated with the risk of CHD events. Specifically, high demands were related to future occurrence of all CHD, especially fatal CHD and non-fatal myocardial infarction for both men and women, whereas low decision latitude was predictive only of all CHD in men. The main conclusion of this study was that job strain, high job demands, and, to some extent, low decision latitude, is associated with an increased risk of CHD among all participants.

### **Research evidence on association between leadership style and burnout**

Based on the information drawn from previous research on the topic, this section aims to analyse leadership styles, stress and burnout among staff nurses in order to illustrate the extent of correlation between leadership styles adopted by nurse leaders with staff's stress, burnout and dissatisfaction.

A research study by Stordeur et al. (1999) focuses on the relationship between leadership, organizational stress, and emotional exhaustion in burnout among hospital nursing staff. The sample of this study was 1,593 registered nurses from a Belgian university hospital. Only ward nurses were included in the study while nurses occupying a leadership position such as head nurses or assistant head nurses were excluded. With the agreement of the general management of the hospital, a questionnaire was designed to assess

work stressors, leadership, and emotional exhaustion. Questionnaires were collected through the internal hospital mail system and sent back to the researchers. The results of the study showed that stress emanating from physical and social environment, role ambiguity, and active management-by-exception leadership were significantly associated with increased levels of emotional exhaustion. Contingent reward leadership and transformational leadership did not influence emotional exhaustion.

The impact of transformational leadership style was examined in the study of Gill et al. (2006) in relation to individual's job stress and burnout. The limitation of this study is that it was not effectuated among nurses and healthcare settings; however, it gives a great idea about the relationship between transformational leadership, job stress and burnout that can be transposed to the healthcare setting. The results revealed that this leadership style decreased the level of job stress as opposed to Stordeur et al. study (1999), which indicated that transformational leadership did not influence emotional exhaustion. These studies showed that the level of burnout is related to the level of perceived stress, which is consecutively related to the type of leadership employed by managers.

The study by Kanste et al. (2007) in the University of Oulu in Finland, explored the relationship between multidimensional leadership and burnout among nursing staff. The study was conducted using a non-experimental survey design, distributed to 601 nurses and nurse managers working in different healthcare organisations. The results showed that both transformational leadership and passive laissez-faire correlated both positively and negatively with emotional exhaustion and depersonalization depending on the part-time or full-time nurses' employment status. Rewarding transformational leadership seems to protect temporary nursing staff from emotional exhaustion, whereas the effect on permanent staff was minor. Passive laissez-faire leadership of nurse management seemed to expose temporary nursing staff to emotional exhaustion, whereas the effect on permanent staff was minor. Finally active management-by-exception connected positively with personal accomplishment.

In conclusion the case studies revealed that leadership outcomes differ greatly and comprise of different styles that have different effects on staff. Depending on the leadership style used by nursing leaders, the nurses will be affected in some way; therefore burnout is a risk that can be directly related to leadership styles. Burnout is also divided into different types and each type is affected more or less depending on the leadership style used by nursing leaders.

conditions. The studies by Chandola et al. (2008) and Kuper and Marmot (2003) examined specifically the relationship between work stress and the impact on CVD, and both found positive association between stress in the workplace and CVD. Another important finding of Lynch et al. (1997) was that people with high demanding and low paying jobs, such as nurses, have significant progression of carotid atherosclerosis. As described earlier, work stress also has an impact on individual's health behaviour. Particularly, the findings from the studies by Chandola et al (2008) and Macleod et al (2002) showed that stress has a typical association with behavioural risk factors such as alcohol consumption, smoking, physical inactivity, and unhealthy diet.

Active management-by-exception was found to increase the levels of emotional exhaustion or burnout (Stordeur et al. 1999), but surprisingly it also increased personal accomplishment levels (Kanste et al. 2007). While in one study, contingent reward leadership and transformational leadership were not found to influence the emotional exhaustion state of burnout (Stordeur et al. 2001), the findings in the Kanste et al. (2007) study showed mixed results, where contingent reward leadership and transformational leadership weakly influenced the levels of emotional exhaustion among permanent staff but actually decreased or increased its levels among temporary staff. Finally, in the analysis of Gill et al. (2006), transformational leadership was found very efficient in decreasing job stress, which consequently prevents burnout from stress.

Latterly it is crucial to note that more research needs to be conducted in order to investigate the impact of burnout on the development of CVD, specifically among nurses, as many studies focus only on the measurement of burnout levels. Future studies should focus on that area. Also additional research needs to be carried out on understanding why different types of leadership styles affect burnout in different ways. This will help clarify the correlation between leadership and CVD and assist decision makers in establishing policies and procedures that can reduce the strain of workplace on individuals. This will provide a healthier and more stable organization and a higher quality of healthcare.

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