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CASE REPORT

ANGER AS A PREDICTOR OF HEART DISEASES REVISITED

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ABSTRACT

Chronic diseases are the most common causes for worldwide mortality in the recent years. A nature of these diseases is long duration and generally slow progression. Chronic conditions such as heart disease, stroke, cancer, chronic respiratory diseases, and diabetes amount to 63% of all deaths worldwide. Among the chronic illnesses heart disease is one of the leading causes of death. Anger is one of the risk factors among potential risk factors, which leads to the development of heart diseases. This study aims to revisit the studies reported in the area anger and heart diseases. The present study includes 20 studies related to types of anger and its effects on development of heart diseases (1988-2013). From the review, variables such as criticism, frustration, unfair treatment, impatience/irritability, gender, employment status, and social integration are covered in relation to anger. The tendency to experience anger on minimal provocation, anger in reaction to criticism, frustration, unfair treatment, and anger combined with psychological stress lead to increased risk for heart disease. Anger expression had a reduced risk of nonfatal myocardial infarction compared with those with lower levels of expression controlling for coronary risk factors. Anger is associated with a more cardiotoxic autonomic and hemodynamic profile, whereas forgiveness is associated with a more cardioprotective profile. Social support can function as buffer against anger. Anger is acting as a risk factor in the development of heart diseases. So the management of anger is very essential. The future research should focus on the management of anger to reduce the prevalence of heart disease.

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INTRODUCTION

Chronic diseases are the most common causes for worldwide mortality in the recent years. These diseases are of long duration and slow progression. Chronic conditions such as heart disease, stroke, cancer, chronic respiratory diseases and diabetes amount to 63% of all deaths worldwide. The World Health Organization (WHO) Global status report on non-communicable diseases (Global Status Report, 2010) showed that chronic, non-communicable diseases are the largest cause of death worldwide. More than 36 million people died due to these diseases in 2008, mainly cardiovascular diseases (48%), cancers (21%), chronic respiratory diseases (12%) and diabetes (3%). Among the chronic illnesses heart disease is the one of the leading cause of death in the United States. More than 600,000 Americans die of heart disease each year. That is one in every four deaths in this country. The term 'heart disease' refers to several types of heart conditions such as Atherosclerosis, high blood pressure, heart attack, heart failure. Globally, cardiovascular diseases are the number one cause of death and an estimated 17 million people died from cardiovascular disease in 2005, representing 30% of all global deaths. Of these deaths, 7.2 million were due to heart attacks and 5.7 million due to stroke. About 80% of these deaths occurred in low- and middle income countries. If current trends

are allowed to continue, by 2030 an estimated 23.6 million people will die from cardiovascular disease (mainly from heart attacks and strokes).

Heart disease is a word used to describe many different conditions affecting the heart. Coronary heart disease is a common type of heart disease. This condition results when plaque settles in arteries, which reduces blood flow to the heart and increases the risk of a heart attack and other heart complications. Other forms of heart disease include: irregular heartbeat (arrhythmias), congenital heart defects, weak heart muscles (cardiomyopathy), heart valve problems, heart infections cardiovascular disease.

Atherosclerosis is the condition when the inner walls of arteries become narrower due to a build-up of plaque (usually caused by a diet high in fat, cigarette smoking, diabetes or hypertension). This limits the flow of blood to the heart and brain. When plaque breaks, a blood clot forms and blocks the artery. This can cause heart attacks and strokes. High blood pressure is consistent above normal pressure in arteries. Blood pressure is the force of blood pushing against blood vessel walls. High blood pressure can lead to hardened arteries, stroke or heart attack. Heart attacks occur when the blood flow to a part of the heart is blocked, usually by a blood clot. If this clot

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cuts off the blood flow completely, the part of the heart muscle supplied by that artery begins to die. Heart Failure means that heart is not pumping blood properly, in this condition heart keeps working, but the body doesn't get all the blood and oxygen it needs.

Heart diseases are chronic and various factors are involved. Biologically, genetic factors and family history play a major role in increasing the vulnerability to the condition. Psychologically lifestyle conditions such as obesity, lack of physical activity, alcohol intake, anger and a high salt intake are also thought to play a part. In both men and women, work stress seems to affect hyper tension (Isles, 2004). A very angry person is three times more likely to have a heart attack than a person who is not angry.

Anger is an unpleasant emotion ranging in intensity from irritation or annoyance to fury or rage (Smith, 1994). Feelings of anger are elicited in situation of being treated unjustly and is accompanied by subjective arousal. As a personality trait, anger refers to the tendency to experience frequent and pronounced episodes of this emotion. Aggression involves a variety of verbal and physical behaviour, typically defined as attacking, destructive, or hurtful actions (Smith, 1994). As a trait, aggressiveness is the disposition to display such behaviour.

Anger coping styles refer to individual differences in the tendency to outwardly express aggressive behaviour when angry or withhold (i.e., suppress) such expressions. Elizabeth (2006) found that those who were classified as angry were much more likely to have another heart attack than the men who were not angry. Married couples whose communications are hostile and angry are far more likely to have hardening of the arteries, which leads directly to heart attacks, than those whose communications are not hostile. A study by Uttah (2006) showed that there is a direct relationship between angry and hostile communications and hardening of the arteries (arteriosclerosis). Kawatchi *et al* (1996) found there is a relationship between level of anger and over all coronary heart disease. Proneness to anger places normotensive middle aged men and women at a significant risk for coronary heart disease morbidity and death. Bleil (2004) showed that an antagonistic disposition (Trait Anger), particularly a tendency to experience anger on minimal provocation (Angry Temperament) and a propensity to express anger outwardly (Anger-Out), are associated with heightened carotid atherosclerosis. Williams *et al* (2001) suggests that a strong angry temperament rather than anger in reaction to criticism, frustration, or unfair treatment places normotensive, middle-aged persons at increased risk for cardiac events and may confer a coronary heart disease risk similar to that of hypertension. Increased hostility and depression were associated with higher diastolic blood pressure. Individuals with higher dominant scores and moderate to high recent life change unit scores had higher cardiovascular risk factors than those with moderate to high recent life change unit scores who were ranked as subordinate.

Player *et al* (2007) found that long-term psychological stress was also associated with risk of incident coronary heart disease. Eng *et al* (2003) found that men with moderate levels of anger expression had a reduced risk of nonfatal myocardial infarction

compared with those with lower levels of expression controlling for coronary risk factors, health behaviors, and use of psychotropic medication, employment status, and social integration.

Everson *et al* (1998) found positive relationship between anger expression style and subsequent hypertension, independent of known risk factors. Findings support the hypothesis that extreme expression of anger in either direction has adverse cardiovascular consequences. Haukkala, *et al* (2010) showed that low Anger Control predicts cardiovascular disease events. May (2014) demonstrate divergent cardiovascular effects of anger and forgiveness, such that anger is associated with a more cardio toxic autonomic and hemodynamic profile, whereas forgiveness is associated with a more cardio protective profile.

Anger suppression (Caska *et al*, 2009. Gallacher (1999), Proneness to anger (Williams *et al*, 2000), Expressed anger (Susan (1999) Carlos (1992), Triggering factor (Möller (2013) are associated with different types of heart diseases. Johan Denollet *et al* (2010) found that patients with Coronary artery disease who suppress their anger were at increased risk of adverse cardiac events, and this was accounted for by individual differences in Type D personality. Lai, & Linden (1988) showed that all groups (including the anger-ins) that had an opportunity to express negative affect did in fact express similar levels of anger. Men reacted more strongly to the math task performed under anger provocation on all cardiovascular indices. Anger expression style as a trait-type disposition was important for the recovery process in women whereas the situational manipulation had specific effects on the recovery process of men. Opportunity to release anger facilitated heart rate recovery (and to a lesser degree diastolic pressure recovery) in men but not in women. Women with anger-in tendencies on the other hand displayed better systolic pressure recovery than female anger-outs whereas no such effects were observed in men.

CONCLUSIONS AND IMPLICATIONS

Cardiovascular diseases are the chronic illnesses which are responsible for the high mortality and morbidity rate. The age of onset is gradually decreasing across the globe. And there are several factors which contribute to the development of heart diseases. Biologically, genetic factors and family history play a major role in increasing the vulnerability to the condition. From psychological point of view, lifestyle conditions such as obesity, lack of physical activity, alcohol intake, anger and a high salt intake and psychosocial stress also plays a part in the development of hypertension. So far the review of literature has covered the different temperament traits which contribute to the development of heart diseases. Among those traits anger is an important trait which contributes to the development of heart diseases. The tendency to experience anger on minimal provocation, anger in reaction to criticism, frustration, and unfair treatment leads to increased risk for heart disease. When anger is combined with psychological stress leads to increased for heart disease. Anger expression had a reduced risk of nonfatal myocardial infarction compared with those with lower

levels of expression controlling for coronary risk factors. Anger is associated with a more cardio toxic whereas forgiveness is associated with a more cardio protective profile. Social support can function as a buffer against anger. Systolic blood pressure was found to be significantly related to suppressed anger. Patients with coronary artery disease who suppress their anger were at increased risk of adverse cardiac events. So the management of anger is very essential to reduce the prevalence of heart diseases. There are very few studies were conducted on the management of anger future research could focus intervention studies how different types of techniques play an important role in the management of hypertension. There are very few longitudinal studies have been conducted to see how anger during the earlier age predicts future heart disease. Future research also can focus how demographic variables and life style patterns are related to anger and development of heart disease.

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