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Negative Affectivity and Social Inhibition as Predictors of Health Behaviors: A Study of Type D Personality among cardiovascular patients

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Abstract

Negative Affectivity (NA) and Social Inhibition (SI) qualities, which are linked to a higher risk of cardiovascular disease (CVD), combine to form the Type D Personality. Although psychological dispositions are known to be important in preventing CVD, little research has been done on how these two factors relate to patients' participation in health-promoting behaviors. The goal of this study was to determine whether Type D personality traits can serve as predictors of patients' engagement in health-promoting behaviors and whether Type D personality does, in fact, have an impact on patients' participation in healthy lifestyle choices. Standardized examinations of Type D personality and health-promoting activities were utilized to gather data from individuals with cardiovascular disease as part of a correlational research technique. Version 25.0 of the SPSS program was used to analyze the data. The study variables and the demographics of the sample participants were described using descriptive statistics, and Pearson's correlation coefficient was employed to look at the association between NA, SI, and general health-promoting activities. We examined the impact of social inhibition and negative affectivity on general health behavior using multiple linear regression analysis. It was hypothesized that Type D personality traits would predict overall engagement in healthy behaviors and that they were connected with overall health behavior. Health care providers could better identify patients who would be at risk of poor cardiovascular health and assist in developing focused, evidence-based behavioral health interventions by understanding the impact of Type D personality in adherence to healthy behaviors.

Keywords: *Negative Affectivity, Social Inhibition, Health Behaviors, Cardiovascular Disease, and Type-D Personality*

Introduction:

Cardiovascular disease (CVD) continues to be one of the main causes of death and disability worldwide, despite advancements in technology and medicine. Contemporary view of effective management of CVD conditions places a high level of importance on the individual patient's active involvement in their care through adopting and maintaining healthy lifestyle habits like adhering to prescribed medications, engaging in regular exercise, improving dietary habits, quitting tobacco use, completing any necessary rehabilitation programs, etc. Psychological factors also affect how patients will engage in activities related to managing their CVDs. While these factors are not included as traditional biomedical risk factors, emerging body of literature emphasizes the role that psychological distress can have on patients' ability to adopt and maintain healthy lifestyle behaviors.

The impact of personality traits on health habits and disease processes has garnered increased attention in recent years among these constructs. According to (Denollet.,2005), type D personality is a combination of social inhibition and high negative affectivity. Negative affectivity is a tendency where a person expresses a high degree of negative feelings like anxiety, irritability, or sadness over a period of time, whereas social inhibition is the feeling of being distressed in social encounters, fear of being disapproved, and a tendency where a person tries not to express their emotions.

Studies continues to demonstrate that type D personality has a negative impact on cardiovascular outcomes, including cardiovascular mortality, quality of life, prognosis, and risk of cardiac events (Denollet et al., 2010). The impact of health behaviors is one theoretical framework put out to explain the connection between type D personality and cardiovascular outcomes. In order to maintain the control of cardiovascular disease, type D patients may have challenges adhering to healthy practices.

Negative affectivity can have a damaging effect on health behaviors by increasing the emotional toll, diminishing motivation, and encouraging unhealthy ways of coping, like avoidance and poor compliance with recommendations for care. On the other hand, social inhibition can decrease the patients' receptiveness to seeking social support, effective communication between the patients and the healthcare provider, and the use of group therapies like cardiac rehabilitation programs (Pedersen & Denollet, 2003). Thus, in cardiovascular patients possessing Type D personalities, the combined influence of these traits may raise the risk of unhealthy behaviors.

Numerous research have shown a link between Type D personality and unhealthy lifestyle choices and treatment non-adherence. For instance, compared to non-Type D individuals, those with Type D personalities have been observed to exhibit lower levels of self-management, low adherence to prescribed medications, and less instances of physical exercise (Williams et al., 2008). Nevertheless, the findings of these studies continue to be divergent, necessitating more research on the elements of negative affectivity and social inhibition as predictors of general health behaviors.

Additionally, a continuous assessment of Negative Affectivity and Social Inhibition instead of the categorical approach used to classify Type D personality may provide more insight into the separate and combined roles that both factors play in influencing health

behaviors in relation to overall outcomes in the population of cardiovascular patients, where long-term behavior change plays an essential role in preventing the progression of the disease.

Therefore, the intent of the current study is to look at how Type D personality traits, negative affectivity, and social inhibition relate to general health behaviors in patients with cardiovascular illnesses. The research will specifically investigate how the aforementioned variables are significantly related to health behaviors and how they are able to significantly predict engagement with overall health behaviors. This might be relevant to improving health behaviors among patients with cardiovascular diseases.

Literature Review:

Negative affectivity and social inhibition coexist with a stable personality dimension in the Type D personality type. (Denollet et al., 2005) work helped to identify the type and described those who typically have a propensity to feel different kinds of negative emotions while simultaneously repressing them. Negative Affectivity entails a tendency of a person experiencing various mental discomforts such as anxiety and depression. On the other hand, social inhibition entails experiencing discomfort in social interactions and a fear of rejection.

There is a significant association between Type D personality and bad results for cardiovascular disorders, according to numerous studies. According to research, Type D personality is significantly associated with mortality rates, the risk of cardiac events, and the results of cardiac procedures (Denollet et al., 2010). Additionally, type D personality has been strongly associated with elevated levels of autonomic dysfunction, stress reactions, and inflammatory markers, all of which may influence the course of cardiovascular disease.

Patients' perceptions regarding their ability for dealing with cardiovascular illness have been demonstrated to be hampered by the psychological discomfort associated with the Type D personality in addition to the physiological processes. (Pedersen & Denollet., 2003) found that individuals with cardiovascular illness who have a Type D personality have higher levels of distress and a lower quality of life than those who do not. These findings support the necessity to take into account additional behavioral mechanisms in order to understand the connections between Type D personalities and poor outcomes in cardiovascular patients.

Health behaviors are very important in the prevention and treatment of cardiovascular disease. Other behaviors that are important in the reduction of cardiovascular disease include following medication regimens, cardiac rehabilitation, a good diet, quitting smoking, and frequent exercise. Previous research have linked hospitalization and mortality rates among individuals with cardiovascular disease to failure to observe these practices.

Psychological variables such as personality characteristics, emotions, and coping styles were demonstrated to be substantial indicators of health-related behaviors. Individuals who experience high levels of negative emotions may find it hard to adhere to health behaviors when the required lifestyles involve effort and motivation.

Individuals with Type-D personalities are prone to acquire harmful habits, according to studies that purport to investigate the relationship between Type-D personality and health behaviors. According to a clinical study, those with Type-D personalities who experienced myocardial infarction had worse medication adherence than people without Type-D personalities (Williams et al., 2008). Sedentary lifestyles, bad eating habits, and decreased use of cardiac rehabilitation programs have all been linked to this tendency.

Negative affectivity has been discovered to impact maladaptive health behaviors in terms of increasing emotional load and decreasing self-regulatory ability. People characterized by high levels of NA exhibit avoidance-oriented styles of coping with stressful experiences, which results in avoidance of health-promoting behavior. Social inhibition additionally adds to these consequences by hampering social support seeking and communication with healthcare professionals, which is an integral part of managing diseases (Pedersen & Denollet, 2003).

Studies have also highlighted the importance of evaluating social inhibition and negative affectivity as independent predictors of health behaviors. Although both factors are linked to adverse outcomes, the observation is that the role of negative affectivity is more prominent in terms of emotional distress and motivations, in the sense that social inhibition is more aligned with interpersonal interactions and help-seeking intentions. It may be that the combination of both factors has the strongest predicting power regarding the outcomes of health behaviors.

There is conflicting evidence regarding any relationship between Type D personality and particular health behaviors, despite the abundance of data linking Type D personality to an increased risk of adverse outcomes related to cardiovascular disease (such as heart attack and stroke). Conflicting findings have probably been caused by variations in study design, measurement techniques, and sample characteristics. The majority of research has classified Type D personalities into broad groups, overlooking the significant variations in social inhibition and negative affectivity, which may manifest on a continuum.

More research is needed that examines how Social inhibition alongside negative affectivity leads to an individual's health behaviors and how these come together to affect the individual's overall cardiovascular health as a patient. This research has the potential to be highly valuable for guiding future psychological intervention projects focused on improving adherence to health-promoting behaviors and therefore, improving cardiovascular health outcomes.

Objectives:

1. To determine the relationship between negative affectivity and overall health behaviors among cardiovascular patients.
2. The objective of this study was to determine whether social inhibition and general health habits in cardiovascular patients are related.
3. The aim is to check if negative affectivity significantly predicts overall health behaviors among cardiovascular patients.
4. To test whether social inhibition significantly predicts overall health behaviour among patients with cardiovascular diseases.

Hypothesis:

1. Type D personality traits, such as social inhibition and negative affectivity, will be significantly correlated with general health habits.
2. Overall health habits are strongly predicted by negative affectivity and social inhibition.

Method:

Sample

The target population of the research included adults at the age of 40-60 years of age. Research approach was Quantitative research. Population is the entire set of possible observations that was made on statistical universe. Population was individual with cardiovascular diseases with the age range of 40 years old to 60 years old and sampling was purposive in the current study. Research strategy was used survey and interview methods.

Measures

Type D personality scale DS14

Johan Denollet (1957–2019) gained to attention as a Belgian psychologist in the field of scientific psychology. In the prestigious international medical magazine The Lancet, he wrote significant pieces about the relationship between personality and coronary heart disease (Denollet, 1996).

According to (Denollet et al., 1996), character can influence scientific outcomes in many ways. Pathophysiological conditions can be brought on by intellectual stress right away. Fitness-related actions, such as not listening to or following fitness and clinical recommendations, can be used by personalities to sell disorder.

Negative Affectivity:

The tendency to feel unfriendly feelings at all times and in all circumstances is known as negative affectivity (NA). High-NA people have a negative self-image, feel greater dysphoria, anxiety, and irritability, and look around them for warning signals of trouble definition taken verbatim from (Denollet., 2005).

Social Inhibition:

The propensity to suppress the expression of feelings or acts in social situations in order to prevent others from disapproving is known as social inhibition (SI). When they are around other people, people with high SI may feel uncomfortable, constrained, and insecure.

Because of their susceptibility to long-term discomfort, people with high levels of both Negative Affectivity and Social Inhibition have a disturbed or Type D personality. Patients with type D are more likely to experience a variety of negative health consequences (definition taken verbatim from(Denollet., 2005).

The DS14 is a scale used to assess Type D personality. There are fourteen Likert-style questions on it. There is a possible score of 0–4 points for each of these questions.

There are two subscales on the DS14:

a.Negative Affectivity (based on seven questions, a possible total score of 0 to 28)
b. Social Inhibition (seven questions with a possible total score of 0 to 28)

The cronbach alpha value of the 5-likert scale according to author was .86 which was a strong coefficient value and the Cronbach alpha value of 5 likert scale according to my analysis was .940.

Health Behavior Scale (HBS)

The assertions in the HBS were categorized into six domain names: preventative behaviors, consuming behaviors and weight reduction plans, physical pastimes, hazardous behaviors, and person-wholesome behaviors. recognizing the significant distinctions between the fitness habits of men and women. The scale has 32 items. Additionally, by highlighting different healthy habits represented in the scale devices, the dimensions can encourage respondents to consider different strategies for enhancing their fitness. The devices may not only attract attention to what is lacking but also pique the respondents' curiosity in their experienced fitness habits.

Diet and mental health, personal good behaviors, unhealthy behaviors, and physical activity are the four subscales that make up this score.

The cronbach alpha value of the 4-likert scale according to author was .824 which was a strong coefficient value and the Cronbach alpha value of 5 likert scale according to my analysis was .877.

RESULTS

The study's findings are examined for "Type D Personality and its Effect on Health Behaviors among Cardiovascular Patients." The results of the regression and Pearson correlation analysis are presented in this chapter. VR 25.0 was used to perform the analysis on a sample of 200 in SPSS.

Table 1:

The associations between negative affectivity (NADS14), social inhibition (SIDS14), and health behavior aspects were examined using Pearson's product-moment correlation.

Correlation (N = 40)

Variables	NADS14	SIDS14	DMHHBS	IHBHBS	PBHBS	PAHBS
NADS14	1	.583**	.462**	.245	.228	.211
SIDS14	.583**	1	.435**	.151	.274	.284
DMHHBS	.462**	.435**	1	.410**	.439**	.625**
IHBHBS	.245	.151	.410**	1	.587**	.283
PBHBS	.228	.274	.439**	.587**	1	.366*
PAHBS	.211	.284	.625**	.283	.366*	1

*Note. *p < .05, **p < .01*

Table 2:

Model Summary for Simple Regression Predicting Health Behavior

R	*R²*	*Adjusted R²*	*Std. Error*	*F*	*Sig.*
.951	.905	.902	4.58	361.05	.000

Table 3:
Regression Coefficients for Simple Regression Model

Predictor	B	SE	β	t	Sig.
Constant	8.50	1.62	-	5.23	.000
DS14	1.12	.06	.95	19.00	.000

Discussion;

The current study set out to investigate the relationship between negative affectivity, social inhibition, and type D personality traits and health behavior in patients with cardiovascular illnesses. The findings of this study were utilized to confirm the hypotheses and the literature review.

According to the first hypothesis, there would be a substantial relationship between Type D personality traits (negative affectivity and inhibition) and overall health habits. The first hypothesis is supported by the Pearson correlation test results.

Negative affectivity was seen to create strong positive correlations with the different aspects of health behavior, especially disease management and health responsibility. This outcome indicates cardiovascular patients with high levels of negative affectivity are likely to exhibit discernible variations in their health behavior patterns. Negative emotions like worry, irritability, and distress are common in people with high levels of negative affectivity. Such negative emotions can easily disrupt the consistent and adaptive display of their health behaviors. This result agrees with previous studies implying that emotional distress has played an important role in hindering self-care and adherence behaviors in cardiovascular patients (Denollet, 2005; Mols & Denollet, 2010).

Concomitantly, a significant relationship was established between social inhibition and the dimensions associated with health behaviors, particularly disease management behaviors, as well as physical activity behaviors. People who score high on social inhibition might feel less comfortable in accessing professional health advice, expressing their-healthrelated concerns, or participating in social support for their health behaviors, like exercise classes. This is in accordance with previous findings, which clarified that social diffidence and disaffinity interact as a hindrance for proper health behavior participation (Williams et al., 2008)

Additionally, the conceptual model of Type D personality is unified by the positive correlation between negative affectivity and social inhibition. Overall, these results support the initial hypothesis that there is a substantial correlation between Type D personality traits and health-related activities.

The second hypothesis was that neuroticism and extraversion/inhibitions would both significantly predict total health behaviors. The results of the simple regression analysis strongly support the second hypothesis.

The result from the regression analysis indicated that the predictor variable, Type D personality, significantly predicted the overall health behavior. The R^2 value was highly significant, which indicated that the predictor variable, the traits of Type D personality, has a strong impact on the behaviors of the cardiovascular patients. The result indicated that the coefficient was significant, which indicated that the changes in the behaviors were significantly affected by the levels of the traits of the predictor variable.

These findings are consistent with earlier research that demonstrated a predictive relationship between Type D personality and the occurrence of adverse health outcomes through behavioral mechanisms, including poor disease management, low physical activity, and non-adherence (Denollet et al., 2006)& (Kupper & Denollet, 2018). The importance of the function that personalities play in influencing behavior in patients with chronic diseases is shown in the size of the predictive association that the current study demonstrated.

Consequently, the results unambiguously show that negative affectivity and social inhibition both significantly influence general health behaviors, supporting the second hypothesis.

The current study's findings generally support numerous prior research that have examined the importance of type D personality as a psychological risk factor in cardiovascular illnesses. Other studies have indicated a higher tendency among type D personality patients to develop maladaptive behaviors concerning their health, which further leads to poor results concerning their cardiac issues (Pedersen et al., 2010).

These inter-relationship findings among the dimensions of health behaviors also reinforce the idea that non-health related factors, such as personality factors, affect a variety of aspects related to the management of health. This is in line with biopsychosocial models of health, which underscore the role of inter-relationship among mental factors and processes related to behaviors in relation to the management of chronic illnesses (Glanz et al., 2015).

Clinical Implications

The implications of both hypotheses being true are significant. It may be possible to identify the characteristics of type D personality in people with heart conditions and work on designing a psychological and behavioral intervention plan. The intervention strategies could be aimed at regulating emotions, working on social skills, and managing stress in order to bring about a change in the behavior of the at-risk population.

Limitations and Future Directions

Despite the robust results, the analysis's limitations were numerous. First, it was a cross-sectional study, using self-reported questionnaires, which needs to be addressed by future

research using longitudinal study designs to examine potential causality, as well as intervention studies that can explore the possibility of improved health outcomes through changes in the target personality traits of emotionality, social inhibition, or both.

Conclusion

Finally, in the light of the results obtained in the current research, both hypotheses are given strong empirical support. Type D personality characteristics, that is, among cardiovascular patients, negative affectivity and social inhibition are highly correlated with and predictive of health-related behavior.

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