

## Burnout in Individuals with Type D Personality: Relations to Age and Gender

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Received date: February 19, 2019; Accepted date: March 08, 2019; Published date: March 15, 2019

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### Abstract

**Objective:** The purpose of this research was to examine the severity and prevalence of burnout in working adults with Type D personality (TDP) in comparison to those without TDP. TDP is defined by the presence of specific levels of both negative affectivity and social inhibition. Burnout is an extended response to chronic stressors characterized by three dimensions: exhaustion, cynicism, and inefficacy.

**Methods:** Online surveys were used to gather responses from 333 participants to the Type D Scale-14, the standard for measure for assessing TDP, and the Burnout Measure, Short Version. Quantitative analysis included the use of t-tests, chi square tests, and regression analysis to determine: a) if there are differences in the severity and prevalence of burnout in individuals with and without TDP, and b) whether age, gender, or both moderate the relationship between burnout and TDP.

**Results:** There were differences in the prevalence and severity of burnout between groups. Individuals with TDP were more likely to have, and to have more severe, burnout than those without TDP. Age moderated the relationship between burnout severity but not burnout prevalence and TDP. Severity of burnout worsened with age in individuals with TDP. Gender did not moderate the relationship.

**Conclusion:** It is important to better understand TDP and its role in burnout. The results presented here highlight the importance of considering TDP in the development of interventions and preventative measures in settings where employee burnout is high.

**Keywords:** Burnout; Type D personality; Moderation of age; Moderation of gender

### Introduction

#### An exploration of burnout in individuals with type D personality

Commonly associated with the workplace, burnout is an extended response to chronic stressors and is characterized by three dimensions: exhaustion, cynicism, and inefficacy [1]. Burnout can be detrimental to both the individual and the company, as there is a decreased ability to perform, more frequent work absences, and an increase in turnover rates [2]. Sufferers of burnout may have disruptions to mental and physical wellbeing. Physical and emotional fatigue, energy depletion, and cognitive weariness are all symptoms associated with burnout [3] as are anxiety, depression, and anger [1].

Burnout research was originally undertaken to study the effects of human service and health care occupations on individuals, due to the numerous stressors involved with those professions [1]. However, burnout is not limited to individuals with these stressful jobs. Many jobs in which the workers have little control can lead to the development of burnout [4]. Additional psychosocial work factors, such as workplace demands and values, contribute to burnout in

different occupations [5]. Burnout may also be associated with characteristics of individuals, as opposed to just characteristics of the workplace [2]. One such characteristic might be personality traits or types, such as Type D personality.

Type D or distressed personality (TDP) was introduced in 1995, with Denollet, Sys and Brutsaert [6] conducting extensive research on the personality construct. TDP is estimated to affect between 13 and 39% of the general population [7]. Individuals with this personality type are characterized by the presence of two characteristics – negative affectivity (NA) and social inhibition (SI). NA is a propensity to focus on the negative aspects of oneself, other individuals, and the world in general [6]. Individuals who exhibit SI suppress emotions and behavior so that they avoid disappointing others [6]. Therefore, individuals with TDP can be described as having generally negative outlooks and avoiding any dialogue or behavior that conflicts with the views of others.

The purpose of the present study was to examine the relationship between burnout and TDP. Specifically, we aimed to determine:

(a) Whether there was a difference in prevalence of burnout in individuals with TDP as compared to individuals without TDP.

(b) Whether there was a difference in severity of burnout in individuals with TDP and those without TDP.

(c) If there was a correlation between severity of TDP and severity of burnout.

(d) If age was a moderator of the relationship between TDP and burnout.

(e) Whether gender was a moderator of the relationship between TDP and burnout.

Age and gender are established moderators of health-related outcomes, and provide valuable information. Examples include the moderation of emotional health and self-esteem in adolescents and physical activity and alcohol use in adults [8,9]. Age and gender have

been explored in relation to burnout and general personality characteristics, but not with regard to TDP specifically. Determining their role here would help more clearly identify individuals at risk.

## Methods

### Participants

The demographic distribution of participants is listed in Table 1. Women comprised 59.46% and men 40.54% of study participants.

Parameters	Number of Participants	Percentage of Sample	Percentage of U.S. Population*	Min Age (yrs)	Max Age (yrs)	Mean Age (yrs)	Std Dev
Female	198	59.46	50.8	25	72	46.88	12.01
Male	135	40.54	49.2	25	75	50.14	12.64
Total Sample	333	100	100	25	75	48.2	12.36

Note: Data obtained from 2010 US Census results (<http://www.census.gov>)

**Table 1:** Participants, gender and age.

## Procedure

The data for this study were collected using the online resource, SurveyMonkey Audience. SurveyMonkey maintains a participant pool that closely reflects the demographic composition of the United States. A link to the survey was sent to members of this pool who were at least 25 years old. Participants also provided demographic information, which included gender, age, occupation, number of hours worked per week outside of the home, and length of time employed in their current fields. Individuals were required to be employed a minimum of 30 hours per week outside the home to be eligible for participation in the study.

## Measures

Type D Scale 14 (DS14) [10]. The DS14 is a standard measure for identifying the presence of TDP by assessing the presence of both negative affectivity and social inhibition [10]. This measure contains 14 statements, half of which address negative affectivity, while the other half addresses social inhibition. "I am often irritated" and "I am a closed kind of person" are among the statements used on the DS14. A 5-point Likert scale is used for respondents to rate their personality characteristics. Assigning 0 to an item indicates that statement is false and does not apply to that individual, whereas a 4 indicates the statement is completely applicable. A minimum score of 10 on each section and an overall score of at least 20 are needed for an individual to be classified as having TDP. TDP can be measured on a continuum, as higher scores on the accepted measures correspond to more severe levels of distressed personality [10]. The maximum attainable score on the DS14 is 56. The DS14 meets the standards of content validity, criterion-related validity, and construct validity [10]. Cronbach's  $\alpha$  for negative affectivity and social inhibition were 0.88 and 0.86, respectively [10]. The test-retest correlations were 0.82 for the negative affectivity facet of the measure and 0.72 for social inhibition [10].

Burnout Measure, Short Version [11]. The BMS is a 10-item inventory that measures the presence and severity of burnout [11]. The 10 items consist of words and phrases that are related to burnout

symptoms. Examples include: I've had it, disappointed with people, and worthless/like a failure. Respondents use a 7-point Likert scale to assign values to each item. The values range from 1 to 7, which correspond to "never" and "always," respectively. Scoring the BMS is performed by adding the values of the responses and dividing that total by 10 [11]. The resulting score enables assessors to assign a magnitude to the level of burnout. The cut-off values for the BMS were based on research into the lengthier Burnout Measure, which used a 7-point Likert scale on 21 items to assess the presence of burnout. A score of 3.5 should be used as the minimum score to indicate the presence of burnout [11]. The BMS has been shown to meet validity standards. Cronbach's  $\alpha$  varied, depending on the population studied. However, all values of  $\alpha$  were at least 0.85, indicating high internal consistency [11]. The test-retest correlation of the BMS of 0.74 indicates temporal stability of the BMS [11].

## Statistical analysis

All data were analyzed using the Statistical Package for the Social Sciences (SPSS). Regression analysis was performed using a macro [12]. Version 2.13 of the 'Process Macro' officially released in 2013 [13] was incorporated in this analysis, designed for specific application to moderating variables, involves selection of a value of the moderator and subsequent estimation of the effect of the independent variable [12].

## Results

### Categorization of TDP and burnout

Because the focus of this study was burnout and TDP, having participants who were members of these groups was critical. Of the 333 participants, 143 individuals met the criteria of having TDP (i.e., scores of at least 10 on both the social inhibition subscale and the negative affectivity subscale), with 77 females (38.89% of all females in the sample) and 66 males (48.89% of all males in the sample) meeting the standard as determined by scores on the DS14. Because of the nature

of the subscales, there was a possibility that a total DS14 score could be higher than 20 without an individual having TDP. A participant may have had a high score in either social inhibition or negative affectivity, but not have had the minimum score of 10 on the other subscale.

Individuals with TDP comprised 42.94% of the sample, which is higher than the estimate of 39% identified in prior findings [7]. Table 2 shows the distribution of scores on the DS14.

Parameters	TDP+			TDP-		
	Female (n=77)	Male (n=66)	Combined	Female (n=121)	Male (n=69)	Combined
Mean (SD)	33.08 (7.23)	33.30 (7.70)	33.18 (7.43)	14.27 (6.79)	14.19 (7.92)	14.24 (7.20)
Min/Max	20/55	20/54	20/55	1/30	0/33	0/33
Mean Negative Affectivity Score (SD)	16.17 (4.28)	15.77 (4.42)	15.99 (4.34)	7.49 (4.53)	6.26 (5.20)	7.04 (4.81)
Mean Social Inhibition Score (SD)	16.91 (5.03)	17.53 (4.67)	17.2 (4.86)	6.79 (4.94)	7.93 (5.49)	7.2 (5.16)

**Table 2:** TDP distribution and DS14 mean scores.

In order to be categorized as having burnout, individuals had to score at least 3.5 on the BMS, with 7 as the maximum attainable score. There were 116 individuals (34.83%) with burnout in this study sample. Seventy-three of those with burnout were female (36.87% of all females in the sample) and 43 were male (31.85% of all males in the

sample). Burnout affected 34.83% of the sample. There is no single statistic that characterizes the prevalence of burnout in society as a whole because previous research has focused on specific groups. Therefore, this percentage cannot be compared to the overall population. Table 3 shows the distribution of scores on the BMS.

Parameter	BO+			BO-		
	Female (n=73)	Male (n=43)	Combined	Female (n=125)	Male (n=92)	Combined
Mean (SD)	4.39 (0.77)	4.39 (0.88)	4.39 (0.81)	2.54 (0.56)	2.34 (0.59)	2.45 (0.58)
Minimum Score	3.5	3.5	3.5	1.3	1.3	1.3
Maximum Score	6.8	7	7	3.4	3.4	3.4

**Table 3:** Burnout distribution and BMS mean scores.

Having individuals with TDP and individuals with burnout was very important to this study. Just as important was having some of the same individuals with both TDP and burnout. Eighty-five of the 333 participants had both constructs (25.52% of the sample).

those without TDP ( $M=2.63$ ,  $SD=0.85$ ,  $n=190$ ),  $t(251)=10.11$ ,  $p<0.001$ , 95% CI [0.93,1.38], with a large effect size (Cohen's  $d=1.15$ ). The highest burnout scores were found among individual with TDP.

**Is there a difference in the prevalence of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP?**

Among the 143 individuals with TDP, 85 also reported burnout (59.44%). Among the 190 without TDP, 31 reported burnout (16.32%). A Chi-Square test showed differences between groups  $\chi^2(1, n=333)=66.845$ ,  $p<0.001$ , with a medium effect size ( $b$ ) of 0.448. As can be seen in Table 4, burnout was more likely to be present among individuals with TDP (25.5% of the total sample) than those without (9.3% of the total sample), and burnout was significantly more common among individuals without TDP (47.7% of the total sample) than those with TDP (17.4% of the total sample).

Parameters	BO+	BO-	Combined
	Score (SD)	Score (SD)	Score (SD)
TDP+	4.5 (0.87)	2.73 (0.5)	3.78 (1.15)
Min/Max	3.5/7.5	1.3/3.4	1.3/7.0
N(%)	85 (25.5)	58 (17.4)	
TDP-	4.08 (0.48)	2.35 (0.58)	2.63 (0.85)
Min/Max	3.5/5.4	1.3/3.4	1.3/5.4
N(%)	31 (9.3)	159 (47.8)	

**Table 4:** Mean BMS scores of groups with or without TDP and/or burnout.

**Is there a difference in the severity of job burnout, as measured by the BMS, between individuals with TDP and individuals without TDP?**

The mean BMS scores of each group based on the presence or absence of TDP and/or burnout are presented in Table 4. Individuals with TDP ( $M=3.78$ ,  $SD=1.15$ ,  $n=143$ ) had more severe burnout than

**Does burnout, as measured by the BMS, correlate with TDP, as measured by the DS14?**

Only BMS scores and DS14 scores from individuals who had TDP were used. The result of the correlation,  $r(143)=0.449$ ,  $p<0.001$ ,

showed that there was a positive correlation between BMS scores and DS14 scores in individuals with TDP.

### Is age a moderator of the relationship between TDP and burnout?

Version 2.13 of the 'Process Macro' officially released in 2013 [13] was used for this analysis. The macro incorporates 76 different models, each of which is applicable to a different type of interaction. Model 1 of the Process macro was used. Model 1 specifically deals with moderation and can be used for logistic and multiple regression analysis [12].

To examine moderation of prevalence of burnout, respondents without TDP were excluded. For individuals with TDP, burnout was dichotomized. Logistic regression was performed to determine whether age moderates the relationship between TDP and prevalence of burnout. The interaction between age and TDP was not statistically significant, as the effect (b)=0.0007, 95% CI [-0.04, 0.04], p=0.9754. That is, there was no significant impact of age on the relationship between prevalence of burnout and TDP. A multiple regression analysis using the Macro showed that age moderates the severity of burnout individuals with TDP, with b=0.004, 95% CI [0.002, 0.006], p=0.0001. The model accounted for 54% of the variance (R<sup>2</sup>=0.29, F (3,139)=18.83, p<0.001). The relationship between TDP and burnout severity increased with age. The late fifties age group was shown to have the strongest relationship with severe BMS scores (Table 5).

Age (yrs)	b	Std Err	t	p	95% CI	
					LL	UL
33.8	0.02	0.02	1.34	0.18	-0.1	0.05
45.9	0.07	0.01	6.24	0	0.05	0.09
58	0.12	0.02	7.31	0	0.09	0.15

**Table 5:** Conditional effect of TDP severity on BMS scores at different ages.

### Is gender a moderator of the relationship between TDP and burnout?

The same analysis used for age were used to examine gender as a moderator. The interaction between gender and TDP was not statistically significant, as b=0.75, 95% CI [-0.41,1.9], p=0.21. There was no significant impact of gender on the relationship between prevalence of burnout and TDP. Gender did not moderate the relationship between severity of burnout and TDP, as b=0.019, 95% CI [-0.027,0.064], p=0.42. The model accounted for 47% of the variance (R<sup>2</sup>=0.22, F (3,139)=13.11, p<0.001).

## Discussion

The purpose of this study was to examine the relationship between burnout and Type D personality (TDP). Our data showed that individuals with TDP were more likely to have, and to have more severe, burnout than those without TDP. Among individuals with TDP, those with more serious symptoms of the disorder experienced burnout more often and with greater severity. Furthermore, severity of burnout worsened with age in individuals with TDP.

Our sample included a higher proportion of individuals with TDP (42.9%) than the estimates of 13 to 39% of the population previously reported [7]. As the sample population for the current study was a heterogeneous sample from across the US, TDP may be more widespread than initially believed. There was a significant difference in the prevalence of burnout in individuals with TDP as compared to individuals without TDP. There were 116 individuals in the current study with burnout, and the overwhelming majority of those (85%) had TDP. Others have found similar results regarding burnout in individuals with TDP [14,15]. Oginska-Bulik [15] noted that individuals with TDP were more likely to perceive their workplace environments as stressful. If individuals with TDP are more likely to succumb to stress, they are more likely to have burnout, which was found to be the case in the present study.

Separately, burnout and TDP have been associated with health problems. The presence of both together could increase risks of developing and potentially exacerbating these problems in affected individuals. Personality influences how individuals behave and perform in the workplace [16]. Most people are aware that there are differences in the personalities of individuals. However, they may not be aware of the implications of these differences. Some may wonder why they are having more adverse reactions to the same environment that others seem to handle with ease. Others may wonder why a group of individuals appear to be having a difficult time, while they handle their job responsibilities with ease. The presence of TDP may be a reason, as the results of this research showed. An individual with TDP may be more impacted by the stress in the workplace than one without TDP. Stimuli that have little impact on an individual without TDP could cause more severe reactions up to and including burnout in a person with TDP. An individual with TDP may process a benign occurrence as a personal slight [17]. Individuals with TDP have more adverse outcomes, which may factor into the differences in the workplace. Aside from the potential health consequences that have been discussed, individuals with TDP experience higher levels of anxiety and anger than those without TDP [18]. These characteristics may be causative factors in why individuals with TDP process workplace stimuli in such a negative manner.

In addition to differences in prevalence of burnout, there was also a significant difference in the severity of burnout between individuals with and without TDP. Individuals with TDP experienced more severe burnout than those without TDP. Malach-Pines [11] indicated specific problems with higher levels of burnout based on BMS scores. Because individuals with TDP have been shown to have higher BMS scores, monitoring may be required to determine if and when they require intervention. There was a correlation between severity of burnout and severity of TDP. The correlation was moderate and positive. As scores on the DS14 increased, so did scores on the BMS. The potential need for monitoring of individuals with TDP is again underscored by this result. Certain levels of burnout require immediate assistance. If an individual has a higher score on the DS14 indicating more severe TDP, he or she likely also has a higher score on the BMS. Therefore, this individual would be at greater risk of developing complications associated with both TDP and burnout. As there are health risks associated with both TDP and burnout, an individual who has increased levels of both may be at a significantly higher risk for either the development or exacerbation of problems. Although we found no difference in the presence of burnout in participants with TDP based on age, there was a difference in severity. As the age of the participant with TDP increased, so did the severity of burnout. Older individuals show a stronger relationship between burnout and TDP severity. TDP



individuals in their late fifties had the highest BMS scores. A possible explanation for this trend may be that individuals in their fifties have been in the workforce longer than members of the other age groups. Therefore, these individuals have been exposed to more stimuli that lead to burnout. Over time, these stimuli may have a cumulative effect, resulting in higher scores as an individual age [19-21].

## Conclusion

Our findings suggest future study of the relationship between TDP and burnout may provide useful information to address this workplace problem. Future research can investigate how to alter the TDP status of an individual and the implications this change would have on burnout. Researchers studying patients with TDP before and after heart surgery noted changes in the TDP statuses of these individuals; some patients had TDP before surgery, but not after, while the opposite happened in other patients. If the severity of TDP as determined by scores on the DS14 is reduced, the severity of burnout may also be reduced. This may be useful in conjunction with or in lieu of interventions targeting burnout. We did not include individuals below 25 years of age. Individuals who worked fewer than 30 hours outside of the home were also omitted. Therefore, we cannot generalize these findings to younger individuals and those who only worked part-time or worked exclusively from home were not included. Other researchers may investigate these populations, though other factors, such as whether the individual is a student or the specific type of work performed, may need to be incorporated as specific study variables. The percentage of participants in the current study with TDP was higher than previous estimates, and yet may be under-reporting the difference. Previous TDP researchers focused on samples comprised primarily of male participants. Females represented 59.5% of the current sample, yet the percentage of TDP among female participants was lower than among males. A larger percentage of males in our sample would have increased the percentage of TDP even more. Additional research is needed to determine whether in fact TDP is a growing problem in the population and to further determine differences by gender.

An additional avenue for future research may be to better understand individuals with TDP but not burnout. Because of the characteristics present in individuals with TDP, they are predisposed to developing burnout. Additional research may be used to determine why some individuals with TDP did not develop burnout, whether the differences were within the individuals, due to the environment, or a combination of these factors. Our findings, along with future research avenues suggested here, may suggest avenues for practice. Understanding the connection between burnout and TDP can enable administrators to develop policies that are more beneficial both to employees and corporations. In 2002, researchers indicated that stress-related problems cost companies approximately 42 billion dollars per year. The reduction or elimination of certain workplace practices can result in less stressful work environments. Changes such as increasing the amount of control individuals have over their job responsibilities and providing more effort-based incentives have been shown to affect burnout. These changes can result in enhanced employee health and performance and reduce the negative economic impact of burnout on the company.

## Compliance with Ethical Standards

This study was not funded. The authors have no conflict of interests. All procedures performed in studies involving human participants

were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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