

Depression and Anxiety in Persons with Von Willebrand Disease

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Introduction

- ❑ Depression and anxiety are associated with poor health-related quality of life (HRQoL), lower functioning and decreased treatment adherence
- ❑ In 2019, 7% of adults in the US had moderate/severe symptoms of depression, while <5% had anxiety based on 2019 data of National Center for Health Statistics
- ❑ Impacts of depression and anxiety in persons with von Willebrand disease (VWD) are unclear
- ❑ Objective: To assess sociodemographic and clinical characteristics associated with depression and anxiety in a geographically diverse cohort of individuals with VWD obtaining care at seven US Hemophilia Treatment Centers (HTCs)

Methods

- ❑ Study participants: age ≥ 12 with VWD Type 1 (VWF:Ag/RCo: $\leq 30\%$), low VWF (VWF:Ag/RCo: 30-50%), Type 2, and 3
- ❑ Survey collected sociodemographic and clinical data, self-reported pain, joint problems and HRQoL measured by EQ-5D-3L at enrollment, as well as quarterly follow-up for one year
- ❑ PHQ-8 and GAD-7 were administered with the last follow-up survey after August 2019
 - Score values ≥ 10 on either PHQ-8 or GAD-7 were classified as depression or anxiety, respectively
- ❑ The association of sociodemographic and clinical characteristics with depression or anxiety was assessed using Chi-square tests for categorical variables, as well as logistic regression models with stepwise selection

Results: Participants Characteristics by Depression or Anxiety

Variable	Depression			P Value*	Anxiety			P Value*
	Total (N=77)	Yes (N=49, 64%)	No (N=28, 36%)		Total (N=72)	Yes (N=42, 58%)	No (N=30, 42%)	
Mean (SD) age in years	34.2 (18.8)	31.0 (17.8)	39.8 (19.4)	0.047	33.5 (18.4)	27.0 (13.9)	42.7 (20.2)	0.001
Low VWD				0.04				0.38
Type 1, 2, 3	62 (80.5)	36 (58.1)	26 (41.9)		59 (81.9)	33 (55.9)	26 (44.1)	
Low VWF	15 (19.5)	13 (86.7)	2 (13.3)		13 (18.1)	9 (69.2)	4 (30.8)	
Gender				0.92				0.30
Male	16 (20.8)	10 (62.5)	6 (37.5)		15 (20.8)	7 (46.7)	8 (53.3)	
Female	61 (79.2)	39 (63.9)	22 (36.1)		57 (79.2)	35 (61.4)	22 (38.6)	
Marital status				<0.01				<0.01
Married/with a partner	53 (70.7)	28 (52.8)	25 (47.2)		50 (71.4)	24 (48.0)	26 (52.0)	
Single/not with a partner	22 (29.3)	19 (86.4)	3 (13.6)		20 (28.6)	17 (85.0)	3 (15.0)	
General health compared to 3 months ago				0.02				0.05
Better/same	64 (83.1)	37 (57.8)	27 (42.2)		60 (83.3)	32 (53.3)	28 (46.7)	
Worse	13 (16.9)	12 (92.3)	1 (7.7)		12 (16.7)	10 (83.3)	2 (16.7)	
Self-reported chronic pain				0.0003				0.62
No pain	19 (27.9)	7 (36.8)	12 (63.2)		19 (29.7)	11 (57.9)	8 (42.1)	
Any pain	49 (72.1)	40 (81.6)	9 (18.4)		45 (70.3)	29 (64.4)	16 (35.6)	
Self-reported joint problems				0.002				0.02
Yes	34 (44.2)	28 (82.4)	6 (17.6)		31 (43.1)	23 (74.2)	8 (25.8)	
No	43 (55.8)	21 (48.8)	22 (51.2)		41 (56.9)	19 (46.3)	22 (53.7)	
EQ-VAS adjusted mean (SE)†		68.77 (3.15)	77.58 (4.24)	0.03		69.27 (3.72)	71.29 (4.25)	0.66
EQ-5D index score adjusted mean (SE)†		0.75 (0.03)	0.83 (0.04)	0.06		0.75 (0.03)	0.82 (0.04)	0.07
Chronic pain score adjusted mean (SE)†		3.65 (0.45)	2.50 (0.65)	0.08		3.20 (0.48)	2.92 (0.59)	0.67

Abbreviations: SD, standard deviation; VWD, Von Willebrand disease; SE, standard error; EQ-VAS, EuroQoL visual analogue scale. Note: data were presented as frequency (row percentage) for categorical variables or mean (standard deviation) for continuous variables. *P values were calculated from Chi-square tests for categorical variables and T-tests for continuous variables. †Covariates in included age, gender, employment, VWD type, self-reported joint problem, self-rate general health compared to 3 month ago.

Results: Predictors of Depression or Anxiety

Variables	Standardized β Coefficient	Odds Ratio (95% CI)	P value	Step*
Depression (N=74)				
Self-reported joint problems (Yes vs No)†	0.51	6.3 (1.99-20.09)	0.002	1
Marital status: Single/not with a partner vs Married/with a partner	0.49	7.0 (1.69-29.03)	0.007	2
Anxiety (N=69)				
Marital status (Single/not with a partner vs Married/with a partner)	0.60	10.80 (2.46-47.46)	0.002	1
Age (12-17 vs ≥18 years old)	0.45	6.66 (1.65-26.92)	0.008	2
Health compared to 3 months prior (Worse vs Better/same)	0.51	12.34 (1.31-116.21)	0.03	3

Abbreviations: CI, confidence interval; N, indicates sample size.

Note: Participants with missing data were excluded from the regression analyses. The variables which were included in the model included age, gender, marital status, employment, VWD type, self-reported joint problems, and health compared to 3 months prior.

*The order of the variable entered into the multiple logistic regression model.

†Self-reported joint problems were assessed by the question "Do you have any problems with your joints?".

Conclusions

- ❑ Our study revealed higher rates of major depression and anxiety in this VWD sample than the general US population
- ❑ Depression had a significant negative impact on HRQoL
- ❑ Mental health screening is critical for persons with VWD, especially those with low VWF, chronic pain or joint problems
- ❑ Special attention should be paid to women and youth
- ❑ This study underscores the need for optimal mental health service as part of the multidisciplinary approach in the comprehensive care of persons with VWD seen at HTC

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Conflict of Interest

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