



Published in final edited form as:

*J Psychosom Res.* 2016 July ; 86: 60–62. doi:10.1016/j.jpsychores.2016.05.007.

## Treatment rates for PTSD and depression in recently hospitalized cardiac patients

Kevin Sundquist, BS<sup>a</sup>, Bernard P. Chang, MD, PhD<sup>b</sup>, Faith Parsons, BS<sup>a</sup>, Nathan Dalrymple, BA<sup>a</sup>, Donald Edmondson, PhD, MPH<sup>a</sup>, and Jennifer A. Sumner, PhD<sup>a,c</sup>

<sup>a</sup>Center for Behavioral Cardiovascular Health, Columbia University Medical Center, New York, NY 10032

<sup>b</sup>Department of Emergency Medicine, Columbia University Medical Center, New York, NY 10032

<sup>c</sup>Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA 02115

### Abstract

**Objective**—Posttraumatic stress disorder (PTSD) and depression are common after evaluation for suspected acute coronary syndrome (ACS), and are associated with poor prognosis. However, it is unclear whether patients discharged after suspected ACS access treatments for subsequent psychological distress. We examined self-reported rates of receiving psychotherapy and/or medication for psychological distress in patients one month after a suspected ACS event.

**Methods**—A sample of 448 adults (age 60.4±12.5; 47.8% female; 52.7% Hispanic, 32.1% Black) presenting to the emergency department with suspected ACS were recruited for the REactions to Acute Care and Hospitalization (REACH) study, an ongoing cohort study of medical and psychological outcomes after ACS evaluation. Socio-demographics and depressive symptoms were assessed in-hospital, and PTSD symptoms related to the suspected ACS event were queried via phone one month after enrollment. Participants also indicated whether they received either medication or counseling to deal with their emotions and coping after their heart problem.

**Results**—Approximately 15% ( $n=68$ ) of the sample reported receiving some form of treatment. Treatment rate did not differ significantly as a function of demographics, ACS status, or insurance coverage,  $ps>0.1$ . Over a quarter of participants (25.3%) who screened positive for PTSD and/or depression reported receiving treatment. Participants with PTSD and depression had a higher treatment rate (47.6%) vs. those with only depression (12.8%) or PTSD (30%) or no psychopathology (10.3%).

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**Corresponding Author:** Jennifer A. Sumner, PhD, Center for Behavioral Cardiovascular Health, Columbia University Medical Center, 622 West 168<sup>th</sup> Street, PH9-315, New York, NY 10032; Phone: 212-342-3133; Fax 212-342-3431; js4456@cumc.columbia.edu.

Competing Interest Statement

The authors have no competing interests to report.

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**Conclusion**—Findings suggest that 1 in 4 patients who screened positive for PTSD and/or depression reported receiving counseling or medication in the first month after a suspected ACS event.

### Keywords

Depression; cardiac patients; posttraumatic stress disorder; treatment receipt

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## Introduction

Posttraumatic stress disorder (PTSD) and depression are associated with both incident and recurrent cardiovascular events and mortality (Edmondson et al. 2012; Edmondson et al., 2013; Van der Kooy et al., 2007; Van Melle, 2004), and both are common after acute coronary syndrome (ACS) events. Approximately 12% of ACS patients develop PTSD due to the event (Edmondson et al., 2012), and 20% are depressed (Freedland et al. 2003). Established psychotherapeutic and pharmacological treatments exist (Hollon et al., 2002; Institute of Medicine, 2008), but it is unclear whether patients discharged after suspected ACS events access them. Although information on mental health treatment rates for cardiac patients is generally lacking in the literature, the extant evidence suggests that psychological conditions like depression and PTSD are generally undertreated. For example, in one study of cardiac patients, only 11% of those with depression received appropriate treatment with antidepressants (Huffman et al., 2006). Furthermore, findings from the broader PTSD literature suggest that over 50% of individuals with PTSD that develops in response to a variety of traumas never receive treatment (Roberts et al., 2011). In particular, treatment rates may be low among low socioeconomic status (SES), racial/ethnic minority patients (Ghafoori et al. 2014; Roberts et al., 2011). We examined self-reported rates of receiving psychotherapy and medication for psychological distress in patients one month after a suspected ACS event, and compared rates across demographic and mental health categories.

## Method

### Sample

English- and Spanish-speaking participants were enrolled during evaluation for suspected ACS in the emergency department (ED) at New York-Presbyterian Hospital as part of the REactions to Acute Care and Hospitalization (REACH) study, an ongoing observational cohort study of ED predictors of medical and psychological outcomes after evaluation for suspected ACS (Sumner et al., 2015). Potential participants were identified by a provisional diagnosis of “probable ACS” by the treating ED physician. Exclusion criteria included: ST elevations on an electrocardiogram; unable to follow the protocol (due to dementia or substance abuse); in need of immediate psychiatric intervention; and unavailable for follow-up (e.g., due to terminal non-cardiovascular illness). This study was approved by the Institutional Review Board at Columbia University Medical Center; all participants provided written informed consent. The analytic sample comprised 448 patients (age  $60.4 \pm 12.5$ ; 47.8% female; 52.7% Hispanic, 32.1% Black, 65% with HS Diploma or above) with complete data.

## Measures and Procedure

In the ED, participants reported on socio-demographics. Once transferred to an inpatient bed (or via telephone if inpatient interview was not possible), participants were administered the Patient Health Questionnaire (PHQ; Kroenke et al., 2001) to assess past 2-week depressive symptoms. Diagnosis at discharge was determined by review of the medical record by a board-certified cardiologist. One month after ED enrollment, participants completed the PTSD Checklist-Stressor Specific version (PCL-S; Weathers et al., 1993) via telephone, which queried PTSD symptoms in response to the “heart problem, ED visit, and hospitalization” that occurred when they enrolled in the study. During this interview, they also indicated if they received either medication or counseling “to deal with your emotions and coping after your heart problem” (i.e., the event that prompted their enrollment in the study). Participants were not provided with treatment recommendations or referrals by study personnel as part of the study.

## Analytic Approach

We computed rates of self-reported receipt of treatment in the full sample. Additionally, chi-square or t-tests were used to test for differences in reported treatment rates as a function of demographics, ACS status, and health insurance coverage. We examined whether receiving treatment differed as a function of psychopathology by comparing treatment rates in participants who screened positive for depression at inpatient interview (PHQ score  $\geq 10$ ; e.g., Kroenke et al., 2001), PTSD at 1-month follow-up (PCL-S score  $\geq 34$ ; e.g., Bliese et al., 2008), or both using chi-square tests.

## Results

Approximately 15% of the entire sample ( $n=68$ ) reported receiving some form of treatment. A total of 28 (6.3%) individuals reported receiving counseling, 16 (3.6%) individuals reported receiving medication, and 24 (5.4%) individuals reported receiving both. There were no significant differences in treatment rate as a function of demographics, ACS status, or insurance coverage ( $p > 0.1$ ), see Table 1.

Thirty-three percent of the sample ( $N=146$ ) screened positive for depression, PTSD, or both. Of those, 25% reported receiving some type of treatment, with 8.2% receiving counseling, 6.9% taking medication, and 10.3% receiving both. Of the 116 (26%) participants who screened positive for depression at the inpatient interview, 28 (24%) reported receiving some treatment. Of the 68 (16.4%) who screened positive for PTSD at one month, 27 (40%) reported receiving some treatment. There was a significant difference in treatment rates between the *no psychopathology*, *depression only*, *PTSD only*, and *comorbid depression and PTSD* groups ( $\chi^2=41.7$ ,  $df=3$ ,  $p<0.0001$ ). Participants with comorbid depression and PTSD had a higher reported treatment rate (47.6%) compared to those with only depression (12.8%) or PTSD (30%) or no psychopathology (10.3%).

## Discussion

PTSD and depression are common after acute cardiac events (e.g., Edmondson et al., 2012; Freedland et al., 2003). Generally little research has been published addressing mental health

treatment rates for cardiac patients, but the few existing studies suggest that these patients are frequently undertreated (e.g., Hoffman et al., 2006). This report is among the first to consider treatment rates for emotional distress after evaluation for suspected ACS. Our sample comprised patients evaluated for suspected ACS with relatively low SES and diverse racial/ethnic identification. These results suggest that a relatively high proportion of patients report receiving some form of mental health treatment. Specifically, 1 in 4 (25.3%) of those who screened positive for a psychological disorder reported receiving counseling or medication in the first month after the suspected event, with no significant differences across demographic groups. Interestingly, approximately 10% of those without probable PTSD or depression reported receiving treatment as well. Treatment in this group might reflect successful treatment of symptoms or indicate prophylactic seeking of assistance for emotional issues in the acute aftermath of a potentially life threatening medical event. Additional research is needed to better understand motivations behind receiving such treatment in this patient population. It is also of interest for future research to develop a more nuanced understanding of potential mental health treatment opportunities that are available for patients after evaluation for suspected ACS, as well as patients' level of interest in such treatment.

### Limitations

The sample comprised patients evaluated for ACS in the ED, and a majority subsequently received a non-ACS discharge diagnosis. Receiving treatment was identified by patient report, and was not compared to electronic medical records. Half of the sample was Hispanic and most reported low SES, so these results do not reflect treatment receipt rates for the population of all suspected ACS patients.

### Conclusions

PTSD and depression after cardiac events have been associated with poor prognosis. This study suggests that 25% of low SES, racially/ethnically diverse patients in an urban setting who screen positive for one or both disorders may receive treatment. Currently, evidence demonstrating that treatment improves cardiovascular prognosis is limited, but this is a heartening finding nonetheless and should be replicated with medical records in more diverse samples.

### Acknowledgements

Dr. Edmondson was supported by the National Heart, Lung, and Blood Institute (NHLBI): R01s HL117832 and HL128497. Dr. Sumner was supported by NHLBI K01 HL130650.

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### Highlights

- PTSD and depression are common after evaluation for suspected acute coronary syndrome (ACS)
- Research on treatment rates for subsequent emotional distress after discharge for ACS is lacking
- Findings suggest 1 in 4 patients with PTSD and/or depression report receiving treatment after ACS

**Table 1**

Sample demographic and clinical characteristics by treatment receipt and presence of psychopathology.

	All who received treatment	All who did not receive treatment	Participants with any psychopathology	Participants with psychopathology who received treatment
	N=68	N=380	N=146 (33% of sample)	N=37 (25% of those with psychopathology)
Characteristic	% (n) or Mean±SD	% (n) or Mean±SD	% (n) or Mean±SD	% (n) or Mean±SD
Age	59.7±10.9	60.6±12.8	59.6±11.8	59.0±11.4
Female sex	45.6 (31)	48.2 (183)	52.1 (76)	40.5 (15)
Black race	33.8 (23)	31.8 (121)	28.1 (41)	21.6 (8)
Hispanic ethnicity	50.0 (34)	51.6 (196)	56.2 (82)	46.0 (17)
> HS education	58.2 (39)	66.1 (252)	58.2 (85)	54.1 (20)
Insured	85.3 (58)	86.6 (329)	85.6 (125)	78.4 (29)
Confirmed ACS	25.0 (17)	35.3 (134)	33.6 (49)	27.0 (10)

Note. HS=high school. ACS=acute coronary syndrome.