

# Quality of Life, Productivity, and Activity Impairment Among US Survey Respondents With Hepatitis C: An Evaluation of HCV and Six Select Medical Conditions

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## BACKGROUND

- The presence of a physical or mental health disorder may have a significant effect on various aspects of a patient's quality of life (QOL) and/or ability to work or carry out daily activities. Myocardial infarction (MI), chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), depression, osteoarthritis (OA), and diabetes have each been shown to impact QOL, physical functioning, and/or productivity.<sup>1-8</sup> Prior analyses have suggested that those with a hepatitis C virus (HCV) diagnosis exhibit impairments in QOL and productivity, and have significantly greater costs due to work loss compared to those without HCV.<sup>9,10</sup>
- Examining QOL and productivity measures of persons with HCV, as well as those with other medical conditions, may provide additional insights into the burden of HCV

## METHODS

- Data came from the 2012 US National Health and Wellness Survey (NHWS), a cross-sectional, self-administered, Internet-based survey
- Respondents aged ≥18 years who self-reported an HCV diagnosis were included
- Separately identified and analyzed were adults with self-reported diagnoses of MI, COPD, CHF, depression, OA, or diabetes; cohorts were not mutually exclusive
- Cohorts were descriptively evaluated for observed self-reported QOL (SF-36v2) and productivity and activity impairment (WPAI) assessments
  - The Medical Outcomes Study 36-Item Short-Form Survey Instrument (SF-36v2)<sup>11</sup> is a validated health survey composed of 36 items assessing eight health domains (vitality, physical functioning, bodily pain, general health perceptions, physical role functioning, emotional role functioning, social role functioning, and mental health) summarized into a physical component summary (PCS) and a mental component summary (MCS) score (PCS and MCS scores were normed to the United States, with higher scores indicating greater QOL)
  - The Work Productivity and Activity Impairment (WPAI)<sup>12</sup> questionnaire was used to measure the impact of health on work performance. The WPAI is a validated instrument and has a 7-day recall period. From the WPAI, absenteeism (the percentage of work time missed), presenteeism (the percentage of time when working that productivity is impaired), overall work impairment (a combination of absenteeism and presenteeism), and total activity impairment (the percentage of impairment in daily activities) because of one's health can be measured. Work productivity questions were limited to those respondents who were currently employed full time

## RESULTS

- Among the 71,157 total respondents from the 2012 US NHWS, an HCV diagnosis was reported by the lowest number of survey respondents (n = 675; 0.9%), followed by CHF (n = 915; 1.3%), MI (n = 1,982; 2.8%), COPD (n = 3,529; 5.0%), diabetes (n = 7,725; 10.9%), depression (n = 10,621; 14.9%), and OA (n = 12,329; 17.3%; **Table 1**)
- The HCV cohort was the second youngest, with a mean age of 54 years, and had the second highest proportion of male respondents (69.8%)
- Full-time employment was reported by 25.0% of the HCV group, 17.2% COPD, 28.9% depression, 14.7% MI, 20.2% OA, 11.4% CHF, and 24.4% diabetes

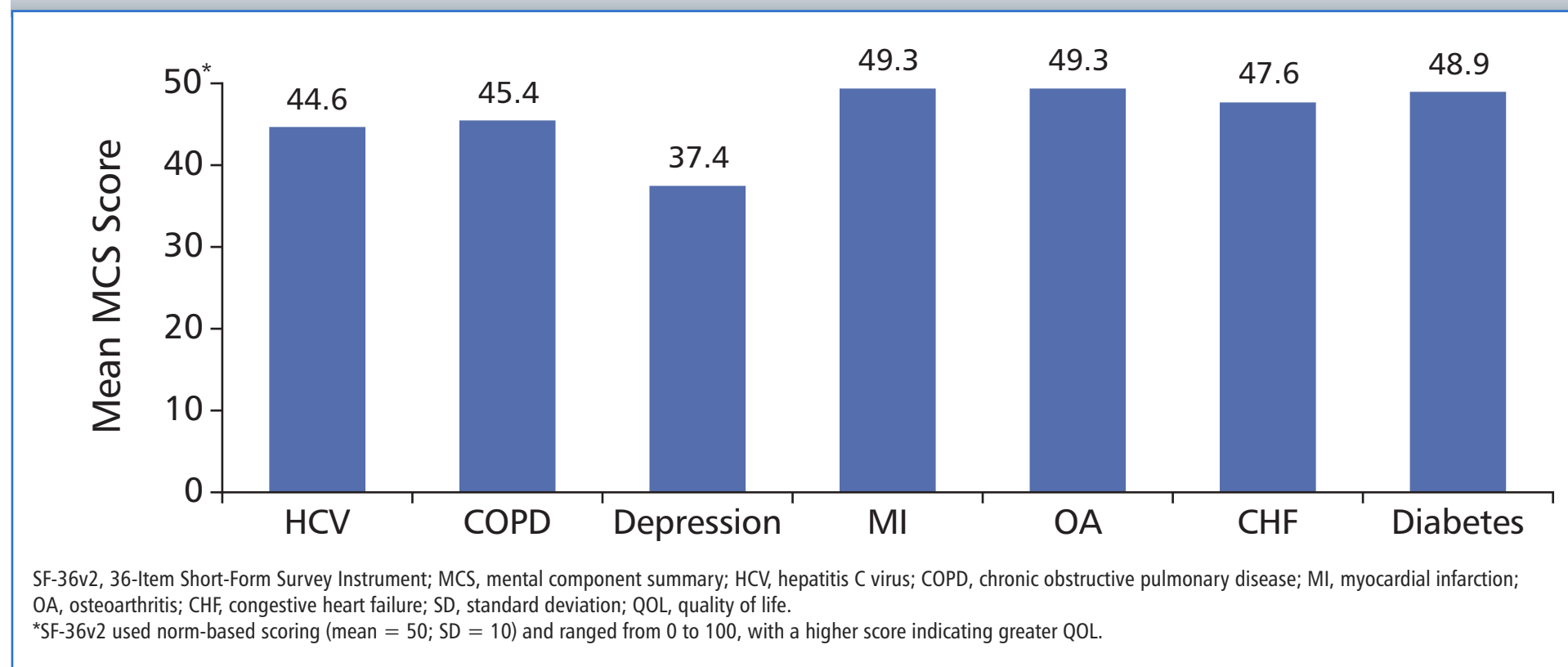
**Table 1.** Cohort Characteristics From the 2012 US NHWS, Total Respondents (n = 71,157)

	HCV	COPD	Depression	MI	OA	CHF	Diabetes
Total respondents, n (%)	675 (0.9)	3,529 (5.0)	10,621 (14.9)	1,982 (2.8)	12,329 (17.3)	915 (1.3)	7,725 (10.9)
Age in years, mean (SD)	53.96 (12.2)	58.43 (14.5)	46.01 (14.9)	64.68 (11.2)	61.09 (12.7)	63.79 (11.6)	59.00 (12.9)
Male, n (%)	471 (69.8)	1,748 (49.5)	4,439 (41.8)	1,529 (77.1)	5,436 (44.1)	609 (66.6)	4,597 (59.5)
Current full-time employment, n (%)	169 (25.0)	607 (17.2)	3,067 (28.9)	291 (14.7)	2,494 (20.2)	104 (11.4)	1,887 (24.4)

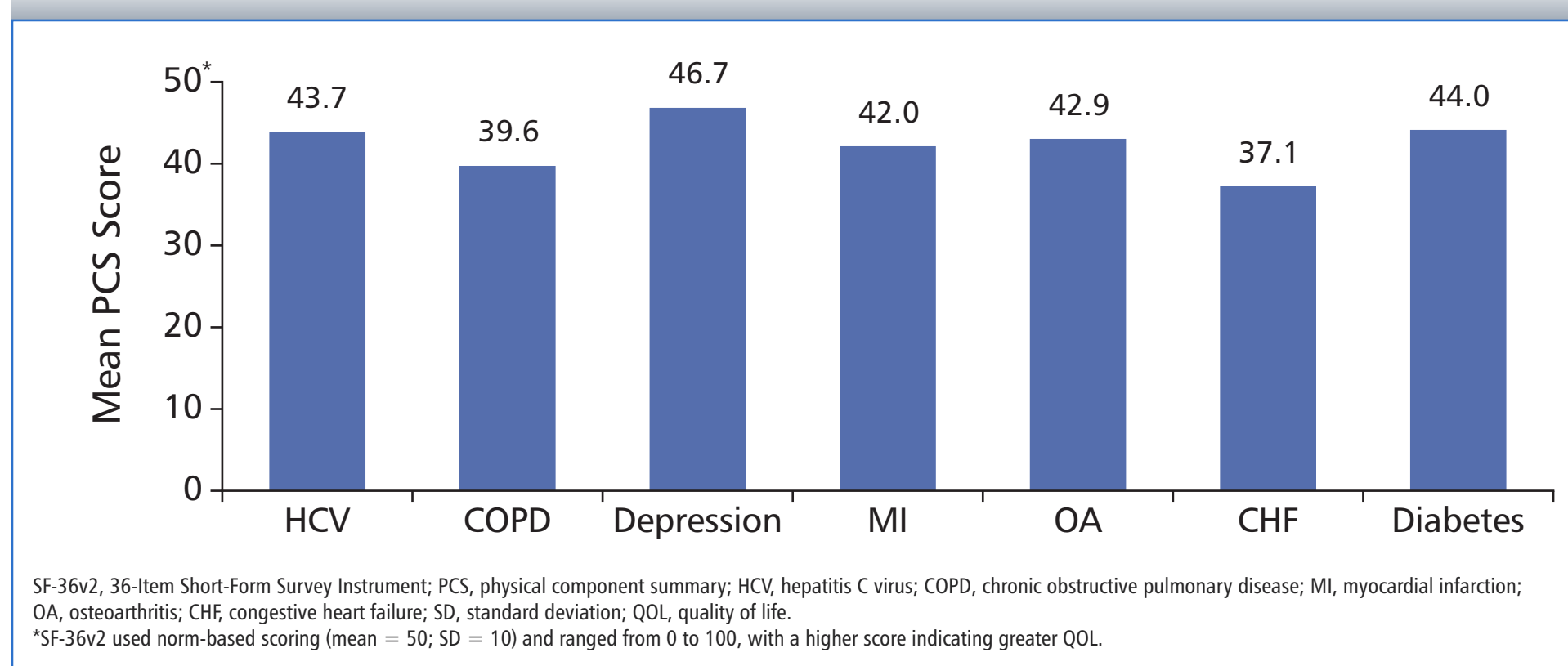
NHWS, National Health and Wellness Survey; HCV, hepatitis C virus; COPD, chronic obstructive pulmonary disease; MI, myocardial infarction; OA, osteoarthritis; CHF, congestive heart failure; SD, standard deviation.

- The HCV cohort was observed to have the second lowest MCS scores (44.6) among the seven cohorts, and third highest PCS scores (43.7) (**Figures 1 and 2**)

**Figure 1.** SF-36v2 Mean Mental Component Summary Scores by Cohort



**Figure 2.** SF-36v2 Mean Physical Component Summary Scores by Cohort



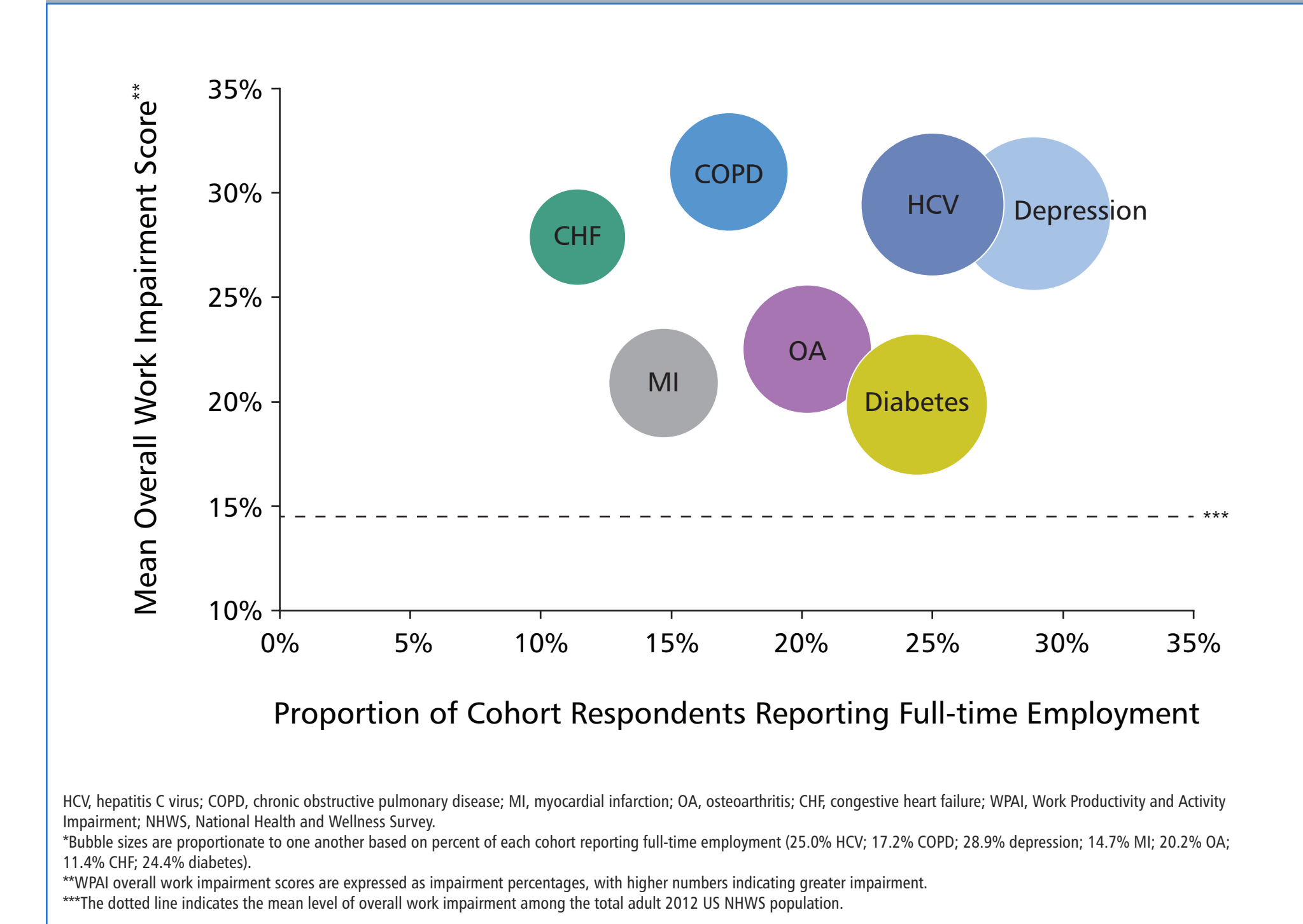
- Among those employed full time, presenteeism, absenteeism, and overall work impairment were observed for all cohorts. Numerically, the HCV cohort had one of the highest reported overall work impairment scores (29.5%), second only to the COPD cohort (31.0%; **Table 2** and **Figure 3**)
- Among the seven conditions, HCV was ranked between cohorts for mean total activity impairment scores (39.8%)

**Table 2.** Mean Work Productivity and Activity Impairment Scores by Cohort

	HCV	COPD	Depression	MI	OA	CHF	Diabetes
Presenteeism,* % (SD)	26.9 (30.0)	27.4 (27.6)	25.5 (26.3)	18.0 (25.3)	19.6 (24.6)	22.7 (26.3)	17.1 (24.1)
Absenteeism,* % (SD)	7.2 (18.9)	7.3 (19.5)	6.6 (18.3)	5.5 (17.9)	4.9 (17.0)	8.2 (23.9)	4.6 (16.6)
Overall work impairment,* % (SD)	29.5 (32.8)	31.0 (30.9)	29.0 (29.4)	20.9 (28.4)	22.5 (28.0)	27.9 (32.1)	19.9 (27.5)
Total activity impairment, % (SD)	39.8 (34.0)	47.1 (31.3)	42.2 (31.3)	38.0 (32.2)	36.7 (31.0)	50.6 (31.7)	34.1 (31.8)

HCV, hepatitis C virus; COPD, chronic obstructive pulmonary disease; MI, myocardial infarction; OA, osteoarthritis; CHF, congestive heart failure; SD, standard deviation.  
\*Presenteeism, absenteeism, and overall work impairment were limited to individuals who reported full-time employment (HCV, n = 169; COPD, n = 607; depression, n = 3,067; MI, n = 291; OA, n = 2,494; CHF, n = 104; diabetes, n = 1,887).

**Figure 3.** Mean Overall Work Impairment Among Respondents Reporting Full-time Employment\*



## LIMITATIONS

- Disease cohorts were not mutually exclusive, and individuals may have contributed to more than one cohort, which was not controlled for in the analysis
- All data were subject to inherent limitations in self-reported surveys, such as patient recall and diagnoses not confirmed with clinical records (e.g., medical charts)
- No multivariate analyses were performed

## CONCLUSIONS

- Among the 71,157 total respondents from the 2012 US NHWS, 675 (0.9%) reported an HCV diagnosis, while 1.3% reported CHF, 2.8% MI, 5.0% COPD, 10.9% diabetes, 14.9% depression, and 17.3% OA
- The HCV cohort had the numerically second lowest average MCS scores (44.6), and the numerically third highest mean PCS scores (43.7) among the seven cohorts
- Although one-fourth of survey respondents with HCV reported full-time employment, these same individuals reported productivity losses in the forms of absenteeism and presenteeism
- Further evaluation of the impact of comorbidity burden and HCV treatment on these patient outcomes is warranted

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## AUTHOR DISCLOSURES

- Jamie B. Forlenza and Neeta Tandon are employees of Janssen Scientific Affairs, LLC, and hold stock in Johnson & Johnson
- Jessica Lopatto is a Janssen-sponsored fellow at Thomas Jefferson University
- Kathy Annunziata and Nikoletta Sternbach are employees of Kantar Health and consultants to Janssen Scientific Affairs, LLC
- Deborah Freedman is an employee of IMS Health and was an employee at Kantar Health at the time of this research

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