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Patient-Reported Experiences with Direct Acting Antiviral Therapy in an Integrated Model of Hepatitis C Care in Homeless Shelters

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Abstract

Background and Aim: Patient reported experience (PRE) is critical for engagement in hepatitis C (HCV) therapy in hard to reach populations. However, there is no data on patient reported experience with DAA therapy among homeless patients accessing shelters. We assessed PRE with DAA treatment following implementation of HCV therapy within homeless shelters in two diverse regions in the United States.

Methods: In a study of integrated HCV testing and treatment in four homeless shelters in San Francisco (SF) and Minnesota (MN), 66 patients received DAA therapy from 11/2018–4/2020. PREs were assessed at the end of therapy with constructs: satisfaction with communication with their HCV treatment provider, receipt of social support during therapy, perceived stigma associated with HCV infection, and their overall satisfaction with DAA therapy. Descriptive statistics and factors associated with satisfaction with HCV therapy were assessed.

Results: At end of therapy, 41 patients completed the questionnaire (response rate was 62%). Median age was 56 years, 74.4% were men, 44% White (45% Black, 6% Latino), 35% had more than a high school diploma, 65% had a history of IV drug use, 56% had received SUD

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S.K. contributed to data clean up study analysis, interpretation of results, drafting of the manuscript and revision of the manuscript; J.N., B.Z, M.R. C.M., D.B., and C.M., contributed to data aquisition, data analysis and interpretation, and revision and review of the manuscript; J.P and M.K. contributed to study concept, data acquisition, material support, data analysis and interpretation, and revision and review of the manuscript.

treatment, and 12% were co-infected with HIV. During DAA treatment, the majority of patients lived in shelters, 37% used illicit drugs, 24% consumed alcohol, and 14% received psychiatric treatment. Patient reported experience with DAA therapy were as follows: 100% agreed or strongly agreed that HCV providers seemed non-judgmental, 98% reported that their provider seemed to care about them, 98% reported that people close to them had been supportive of their care, and 98% were satisfied with their HCV treatment. There were no patient level or clinical predictors associated with PREs of stigma, perceived lack of social support or satisfaction with DAA treatment.

Conclusions: Nearly all (>95%) homeless patients receiving integrated HCV testing and therapy within homeless shelters felt supported and reported favorable views toward their providers and a high level of satisfaction with DAA treatment. As patient reported experience is key for engagement in HCV therapy, our onsite treatment intervention within shelters can serve as a model of HCV care to enhance treatment uptake in patients experiencing homelessness.

Keywords

Health disparity; vulnerable populations; DAA; quality of life; substance use

Introduction

In the United States, persons experiencing homelessness have higher rates of Hepatitis C virus (HCV) infection prevalence than the general population.[1] While direct-acting antiviral (DAA) therapy is highly effective for HCV treatment, there are barriers to DAA treatment uptake among persons experiencing homelessness related to access to medication, substance use problems, and difficulty with engaging in on-going care, among others.[2] Patient reported experiences (PREs) measure patients' perspectives of their general health, quality of life, and psychosocial experiences relating to their disease and its management.[3] These factors are critical in addressing patient concerns during HCV therapy and scaling DAA therapy in hard to engage populations. However, there is limited data on PREs with DAA therapy among vulnerable populations.[4]

In this study, we aimed to assess PREs in patients experiencing homelessness during HCV DAA therapy in an integrated homeless shelter-based model of HCV care that was implemented following assessment of key stakeholders' perspectives.[2,5]

Methods

From 11/2018–4/2020, HCV rapid testing and subsequent on-site DAA therapy for those who tested positive were offered to homeless residents in four homeless shelters in San Francisco, California and Minneapolis, Minnesota following informed consent. Patients who tested positive for HCV antibody underwent formal HCV education and were offered on-site HCV therapy. HCV therapy was managed by a designated HCV RN coordinator (SF) or PharmD (MN) in coordination with providers from shelter clinics, primary care, or safety-net liver specialty clinics. Patients completed an end-of-treatment questionnaire to report their experiences during therapy. Questionnaire items related to PREs included satisfaction with communication with their HCV treatment provider, receipt of social support during

therapy, perceived stigma associated with HCV infection, and their overall satisfaction with DAA therapy (Supplemental Table). This study was approved by the institutional review boards at University of California San Francisco and Hennepin Health care.

Statistical Analysis

Descriptive analysis included median (interquartile range [IQR]) for continuous and frequency (%) for categorical variables to summarize patient characteristics and PRE questionnaire responses. Patient characteristics were compared between questionnaire respondents and non-respondents using t-test for continuous variables and Chi-squared test (or Fischer's exact test as indicated) for categorical variables. Patient level factors (see Table 1) associated with PREs were evaluated using univariable and multivariable logistic regression models. Statistical significance was defined at p-value of < 0.05 (two-sided). Analyses were assessed using Stata version 15 statistical software (Stata Corp LP, College Station, TX).

Results

Study population

A total of 66 patients received HCV therapy and 41 patients completed the end-of-treatment questionnaire (62% response). Overall, the median age was 56, majority were male (74%), either Black (45%) or White (44%), had a high school education or less (65%), and had a history of injection drug use (65%) or prior substance use disorder treatment (56%) (Table 1). During DAA treatment, the majority of patients lived in shelters, 37% used illicit drugs, 24% consumed alcohol, and 14% received psychiatric treatment. The questionnaire respondents were significantly (all $P < 0.05$) more likely to be younger (median age 55 vs 59 years) and less likely to be Black (34% vs 64%) than non-respondents.

Patient-reported experiences (PRE) during DAA treatment

Among the questionnaire respondents, PREs were as follows: 100% agreed or strongly agreed that HCV providers appeared non-judgmental, 98% reported that their provider seemed to care about them, 98% reported that people close to them had been supportive of their care, and all but one patient agreed (28%) or strongly agreed (70%) that they were satisfied overall with the HCV treatment services that they had received. There were no specific patient level predictors associated with PREs of stigma, perceived lack of social support, or satisfaction with DAA treatment. Following treatment, 31 (76%) patients achieved SVR following therapy and there was no significant difference in PREs in those with SVR versus those without SVR or those whose SVR status was unknown (Supplemental Table).

Discussion

In conclusion, nearly all (98%) homeless patients receiving integrated HCV therapy in this study who responded to the questionnaire felt supported and reported favorable views toward their providers with an overall high level of satisfaction during DAA treatment. Although >60% questionnaire response rate is generally considered representative of study

populations[6], our study was limited by a lower proportion of Black and older patients who responded to the PRE questionnaire. Considering Black patients have disproportionately higher rates of chronic HCV infection[7], further assessment of PREs specific to these populations will be important in tailoring interventions to enhance DAA treatment uptake. Another possible limitation is that individuals who were more satisfied with the treatment could have been more likely to respond to the questionnaire. Nevertheless, as PREs are key for adherence to HCV therapy, especially in the difficult-to-engage populations, the patients' highly positive reported treatment experiences highlight that our shelter-based HCV therapy can serve as an enhanced model of HCV care for persons experiencing homelessness. In particular, this study emphasizes that carefully developed and implemented models of HCV testing and therapy focusing on the engagement of homeless clients and other key stakeholders are successful in enhancing patient HCV treatment experiences in this vulnerable population.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Disclosures:

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Data availability statement:

The data that supports the findings of this study are available in the supplementary material of this article.

Abbreviations:

DAA	direct-acting antiviral
HCV	hepatitis C virus
PRE	patient-reported experience

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Table 1.

Patient characteristics overall and categorized by questionnaire responders and non-responders at the end-of-therapy among individuals who received HCV therapy.

Patient Characteristics	Total Patients [N = 66]	Questionnaire Respondents [N = 41]	Questionnaire Non-Respondents [N = 25]	P-value
Median Age, (range), years	56 (28–82)	55 (28–72)	59 (41–82)	0.02
Sex (%)				
Male	74	78	68	0.4
Female	26	22	32	
Race (%)				
Black	45	34	64	
White	44	56	24	0.04
Native American	3	2	4	
Multiple	8	7	8	
Ethnicity (%) Hispanic/Latino	6	7	4	0.6
Education (%) HS Education or Less	65	73	52	0.1
HIV Co-Infection	12	12	12	0.5
History of IV Drug Use	65	66	64	1
History of SUD Treatment	56	54	60	0.9