

Psychosocial and Mental Health Characteristics of RePresent Game Users

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The RePresent games are online video games that are publicly available and designed to educate people about legal self-representation in civil court. This study was part of a project to examine use of the RePresent games in Connecticut, Massachusetts, Maine, and New Hampshire from January 2018 to May 2018. Data on game use across the four states were analyzed, and an online survey was conducted to examine characteristics of RePresent game users and nonusers seeking civil legal aid ($n = 277$). The RePresent games were accessed more than 7,000 times in five months. The most common legal problems reported were related to debt, family, and housing. Compared with nonusers, RePresent game users were significantly more likely to be nonwhite, to have an incarceration history, to have more legal problems, and to screen positive for alcohol use problems. In the total sample, 83 percent screened positive for depression, 81 percent for generalized anxiety disorder, and 45 percent for drug problems. Only 34 percent reported use of mental health services, and 17 percent reported substance abuse treatment in the past year. These findings demonstrate that products like the RePresent games can be widely accessible to adults from disadvantaged backgrounds. In addition, civil legal settings may be a new area for mental health screening and intervention.

J Am Acad Psychiatry Law 48(3) online, 2020. DOI:10.29158/JAAPL.003922-19

Civil legal problems can affect housing, health care, employment, income support, family problems, quality of life, and overall well-being.¹ Civil legal problems are common and widespread in the United States, and the vast majority of people who go to court for these problems do not use professional legal representation.² A 2016 report by the Legal Services Corporation found that 71 percent of low-income

households experienced at least one civil legal problem, and 86 percent of them received inadequate or no legal assistance.³ Many adults in the criminal justice system also experience civil legal problems, so a lack of legal representation for civil legal problems may also be relevant in forensic settings.^{4,5}

Unlike criminal courts in the United States, where individuals are appointed a lawyer if they cannot afford one, there is no right to counsel in civil legal cases, with a few exceptions (e.g., eviction cases in New York City and San Francisco).⁶ Thus, many people with low income are at a particular disadvantage when they have civil legal problems because they cannot afford to hire a lawyer. This results in a certain level of inequity in legal representation, especially for poor defendants. Some individuals seek public legal aid for assistance, but most public legal aid offices throughout the country are inundated with requests and are not able to serve all those seeking legal assistance.⁷ Studies have found that vulnerable and disadvantaged populations report higher

Published online May 13, 2020.

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Funding for this project was provided by the Legal Services Corporation, granted to Statewide Legal Services of Connecticut. Disclosure of financial or other potential conflicts of interest: None.

rates of contact with civil justice situations and have greater incidence of negative consequences from these events, which can adversely affect their health and well-being.⁸

This justice gap has continued to increase.⁵ One proposed solution to cope with the overwhelming needs of unrepresented litigants in civil cases is to improve people's capacity for self-representation.⁹ As a result, various self-help tools and programs now exist, offered by the American Bar Association,¹⁰ state judicial websites,¹¹ and nonprofit organizations.¹² To our knowledge, however, there has been no previous attempt to gamify these educational products for the general public.

There is burgeoning research on the concept of therapeutic jurisprudence, i.e., how legal actors and the legal process can affect the psychological health of legal participants.¹³ Recent studies have reported that providing legal assistance to those with civil legal problems can improve not only their legal status, but also their housing and mental health.^{4,14-16} Addressing civil legal problems is part of a larger public health movement to identify and target upstream social determinants of health to prevent larger health and social problems later.¹⁷ Thus, there is great potential to develop new interventions in the legal arena that may improve the health and lives of individuals.

Two public online video games that have been created to address the potential disparity in procedural justice are the RePresent game and the RePresent: Renter game. RePresent is an interactive game that simulates the general process of preparing and participating in civil court for a range of civil legal problems. RePresent: Renter is a similar game but is designed to be specific for housing court and for dealing with rental housing problems such as evictions. These two video games were created through a partnership between Statewide Legal Services of Connecticut and the NuLawLab and Game Design Studio at Northeastern University, with funding from the federal Legal Services Corporation.¹⁸ These games are designed to provide educational content about court proceedings and court etiquette through a game modality. As part of a demonstration project in 2018, these games were made available at no cost to the public in Connecticut, Maine, Massachusetts, and New Hampshire.

In this study, we examined use of the RePresent and RePresent: Renter games (collectively referred to as the RePresent games) over the five-month period

of the demonstration project across four states. We also conducted an online survey to examine sociodemographic, legal, and psychosocial characteristics of RePresent game users compared with nonusers who were also seeking legal aid. We compared RePresent game users' and nonusers' individual characteristics and the association between their individual characteristics and patterns of legal problems. We hypothesized that the RePresent games would reach a broad population of adults with various civil legal problems, but that game users would more likely be young, college-educated males than nonusers because the majority of general video game players are of this demographic.^{19,20} The results will provide information about the potential of the RePresent games to reach particular groups who need them and whether there is any relationship between civil legal problems and mental health and well-being.

Methods

Game Description

The original RePresent game (version 1.0) was created in 2015. The initial efforts focused on providing self-represented parties the generally applicable skills and tasks required for adjudicatory proceedings, such as what to bring to court, how to address the judge, and how to cross-examine a witness. Most self-represented parties lack experience advocating for themselves in a formal setting and find themselves having to carry out that task for the first time in a real-life hearing environment with a lot at stake. RePresent was designed to provide a basic, retainable understanding of how to prepare for and self-advocate in court. RePresent is not a commercial product, and none of the authors report any financial conflicts of interest with its evaluation.

During 2017 and 2018, RePresent 1.0 was updated and modified to create RePresent 2.0, with jurisdiction-specific versions for the states of Connecticut, Maine, Massachusetts and New Hampshire. At the same time, the RePresent platform was used to create a new game called RePresent: Renter to educate self-represented parties specifically about how to navigate summary process eviction proceedings in housing court. Jurisdiction-specific versions were created for Connecticut and Maine. Whereas RePresent 1.0 was only available as a desktop computer game, mobile versions were created for RePresent 2.0 and RePresent: Renter.

Table 1 State-specific Game Versions

Game Version	Website
Connecticut RePresent	https://ctlawhelp.org/en/represent
Connecticut RePresent Renter	https://ctlawhelp.org/en/represent-renter
Maine RePresent	https://ptla.org/represent-game
Maine RePresent Renter	https://ptla.org/represent-renter-game
Massachusetts RePresent	https://www.masslegalhelp.org/court/represent
New Hampshire RePresent	https://www.nhlegalaid.org/represent

Starting in January 2018, RePresent 2.0 was available in Connecticut, Massachusetts, Maine, and New Hampshire, and RePresent: Renter was available in Connecticut and Maine. Both RePresent games were available through websites and through mobile apps downloaded on Apple-based and Android-based products. The websites for each state are listed in Table 1.

For both RePresent games, scripts of courtroom scenes were written by legal aid professionals experienced in producing plain-language self-help materials for their clients. Script coding was done by the Game Studio using Northeastern University's StudyCrafter platform.²¹ All study procedures were approved by the Human Subjects Committee at Yale University.

Game Data and Participant Recruitment

Game data from website analytics and mobile app downloads were obtained to examine utilization of the RePresent games. Website data were extracted from Google Analytics, and mobile app download data were extracted from iTunes and Android servers.

The RePresent games were accessible through legal aid websites in each of the participating states. A sample of RePresent game users and a comparison sample of nonusers were recruited online through these legal aid websites; these participants were invited to complete an online survey (available upon request from the author). RePresent game users in each state were invited to participate in the survey through a link embedded at the start of the games accessible from legal aid websites. Nonusers were invited to participate in the survey through a link embedded in the main legal aid website of each state. Nonusers were selected based on their behavior in seeking legal aid, and they confirmed in the survey that they had never played the RePresent games. Both RePresent game users and nonusers were screened with the survey and were included only if

they had a current civil legal problem and were presumably seeking legal assistance. All survey participants provided informed consent.

The surveys collected information on participants' background characteristics, details about their current and past legal problems, legal knowledge, sense of self-efficacy and empowerment, perceived procedural justice, mental health and substance use, and quality of life, as described below. Participants were compensated \$30 for completing the survey.

Participants

All potential participants were initially screened online with the following inclusion criteria: over the age of 18, lived in the state, and had an active legal problem. A total of 451 people initially agreed to participate in the survey ($n = 228$ game users and 223 nonusers). Participants who did not complete the survey or did not report a current legal problem were excluded from the analysis. As a result, a total of 277 (61.42%) participants were included in the analysis: 136 game users and 141 nonusers. There was no significant difference in the proportion who were included versus excluded between game users and nonusers ($\chi^2 = .61, P = .435$).

Among the 277 game users included in the analysis, 82 participants (53 game users and 29 nonusers) were from Connecticut, 21 (14 game users and 7 nonusers) were from Massachusetts, 27 (8 game users and 19 nonusers) were from New Hampshire, and 147 participants (61 game users and 86 nonusers) were from Maine.

Measures

Background characteristics were collected by participant self-report. Information on sociodemographic characteristics such as gender, race/ethnicity, marital status, educational level, employment status, and income level were collected. Participants were also asked about any history of homelessness and any history of incarceration.

Legal problems of participants were assessed. Participants were provided a checklist of legal problems (with examples) and asked whether they were currently experiencing any of the listed legal problems. Participants were then asked whether they had experienced any of the list of legal problems in the past. The list included money or debt problems (e.g., bankruptcy, debt collections, fraud, loans), family legal problem (e.g., divorce, child support, custody),

housing problem (e.g., eviction or lockout, landlord or tenant problems, security deposit), home foreclosure, immigration problem, criminal record expungement (e.g., trying to get criminal record erased), estate or probate problem, tax problem, unemployment or worker's compensation, criminal problem (e.g., theft, robbery, assault), and other problems.

Legal knowledge and sense of procedural justice of participants were assessed separately. Participants were asked to rate their legal knowledge with one item that asked participants how much they know about how to resolve their legal problem from 0 (Nothing) to 4 (A lot). Participants were also asked to rate their sense of procedural justice using a seven-item measure adapted from the MacArthur Perceived Procedural Justice Scale.²² This measure asked participants the extent to which they felt they were "able to express [their] views in the legal process" and that the "legal process is ethical." The mean of responses was calculated for a scale score.

Empowerment was assessed with an abbreviated 10-item Empowerment Scale designed to measure subjective feelings of empowerment.²³ Participants were asked to rate their level of agreement on a four-point scale from 1 (Strongly agree) to 4 (Strongly disagree) on various statements like "I am usually confident about the decisions I make" or "I see myself as a capable person." After reverse-coding items, the mean of all item responses was calculated for a total score, with higher scores indicating greater levels of empowerment.

Self-efficacy was assessed with a 10-item General Self-Efficacy Scale (GSES)²⁴ that asked participants to rate statements like "I am a self-reliant person" on a five-point scale from 1 (Strongly disagree) to 5 (Strongly agree). Responses were summed for a total general self-efficacy score. The GSES is a widely used measure in clinical research with established reliability and temporal stability.²⁵

Mental health was assessed with several validated measures. Overall mental health was assessed with an abbreviated Behavior and Symptom Identification Scale (BASIS-24).²⁶ The BASIS-24 asks participants about mental health and substance use problems in the previous week, such as whether they experienced any problems like "difficulty concentrating" or "thoughts racing through your head" on a four-point Likert scale. The BASIS-24 has been shown to be psychometrically sound.²⁷ In this study, a 14-item

BASIS-24 was used, and the mean response was calculated for a total score, with higher scores reflecting more mental health problems.

The Patient Health Questionnaire-2 (PHQ-2)²⁸ and the Generalized Anxiety Disorder-2 scale (GAD-2)²⁹ were used to assess depression and anxiety symptoms, respectively. The PHQ-2 and GAD-2 are commonly used self-report screening instruments; the PHQ-2 includes two items assessing symptoms of depression, and the GAD-2 includes two items assessing symptoms of generalized anxiety over the past two weeks. Participants were asked to report how often in the past two weeks they had been bothered by two core symptoms of depression and two core symptoms of generalized anxiety disorder on a scale from 0 (Not at all) to 3 (Nearly every day). For both the PHQ-2 and GAD-2, scores greater than 2 on the depression and generalized anxiety items were indicative of a positive screen for major depression or generalized anxiety, respectively.

Any recent use of mental health services was assessed by asking participants whether they received any services for mental health problems in the past year and whether they received any services for substance abuse problems in the past year.

Substance abuse was assessed by asking participants how many days in the past 30 days they had more than two drinks of alcohol per day and how many days in the past 30 days had they used any illegal drugs. Potential alcohol use problems were categorized as reporting more than seven days of alcohol use (more than two drinks per day) in the past 30 days. Potential drug use problems were categorized as reporting any days of illegal drug use in the past 30 days, which has been done in previous epidemiological studies.³⁰

Quality of life was assessed with the Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF).³¹ The Q-LES-Q-SF is a 14-item measure that asks participants about their satisfaction in the past week with various aspects of life, including physical health, mood, work, household activities, social and family relationships, leisure activities, sexual drive and interest, economic status, and living situation. Participants were asked to rate their satisfaction in these areas from 1 (Very poor) to 5 (Very good), and scores were summed for a total score. The Q-LES-Q and its short form are among the most frequently used outcome measures of quality of life.

Data Analysis

The data were analyzed in four phases. First, data obtained from the RePresent game servers were analyzed with descriptive statistics to examine game use. Second, data on the sociodemographic characteristics, legal problems, and clinical and psychosocial status of game users and nonusers who participated in the survey were analyzed. Characteristics of game users and nonusers were compared with *t* tests and chi-square tests. The Levene test for equality of variances was conducted before *t* tests, and adjustments were made accordingly. Third, a cluster analysis was conducted to identify groups of participants with different clusters of legal problems. A two-step cluster procedure was used, in which preclustering was performed before performing hierarchical clustering to form the groups. After a clustering solution was determined, the groups were compared on their rates of each legal problem with chi-square tests. Finally, two multivariate analysis of covariance (MANCOVA) were conducted to compare the cluster groups on clinical and psychosocial characteristics. Sociodemographic differences between groups were entered as covariates in both MANCOVAs. In the first MANCOVA, legal-related variables (i.e., legal knowledge and Procedural Justice Scale scores) were entered as dependent variables. In the second MANCOVA, the clinical and psychosocial variables (e.g., Empowerment Scale, BASIS-24, Q-LES-Q-SF scores) were entered as dependent variables. All statistical tests were conducted as two-tailed *t* tests, and the significance level was set at $P < .05$.

Results

From January 2018 through May 2018, the RePresent game was accessed a total of 2,722 times on computers across four states (26.6% from Connecticut, 53.5% from Massachusetts, 14.1% from Maine, and 5.8% from New Hampshire), and the RePresent: Renter game was accessed 499 times on computers (62.1% from Connecticut and 37.9% from Maine).

Examination of app downloads from Apple iTunes and Android during the same time period showed that there were 435 app downloads of the RePresent game and 89 app downloads of the RePresent: Renter game from iTunes; from Android, there were 4,354 app downloads of the RePresent game and 216 app downloads of the RePresent:

Renter game. There was a larger number of downloads from Android users versus Apple users. In total, the RePresent game app was downloaded 4,789 times and the RePresent: Renter game app was downloaded 305 times. Between computers and phone apps, game users played the RePresent game on phone apps more often and played the RePresent: Renter game on computers more often.

Table 2 shows the sociodemographic characteristics and legal problems of RePresent game users and nonusers who participated in the survey. In the total sample, across game users and nonusers, the majority of participants were female, unmarried, 25–44 years old, had some college education, were employed, had income below \$50,000, and had never been incarcerated or homeless before. Participants reported a range of multiple current and past legal problems. The most common current and past legal problems were related to money or debt, family, or apartment housing.

Compared with nonusers, RePresent game users were significantly more likely to be nonwhite, have less education, have been incarcerated before, have more current legal problems, and report higher procedural justice scores. Game users were significantly more likely to have current legal problems related to apartment housing, immigration, and estate or probate than nonusers. Game users were also significantly more likely to have past legal problems related to family, immigration, and taxes.

Table 3 shows the clinical and psychosocial characteristics of RePresent game users and nonusers who participated in the survey. In the total sample, 83.1 percent screened positive for depression and 81.3 percent screened positive for generalized anxiety disorder; 16.2 percent screened positive for alcohol use problems, and 44.8 percent screened positive for drug use problems. The majority of the total sample had not used any mental health services or substance abuse treatment in the past year (34.3% reported any past-year mental health service use; 17.0% reported any past-year substance abuse treatment).

RePresent game users had lower PHQ-2 scores and higher Q-LES-Q-SF scores, and they were more likely to screen positive for alcohol use problems than nonusers. There was no difference in positive screens for major depression between game users and nonusers (82.2% versus 84.1%, respectively; chi-square = .174, $P = .677$), but game users were significantly less likely to screen positive for generalized anxiety disorder than

Characteristics of RePresent Game Users

Table 2 Background Characteristics and Legal Problems of RePresent Game Users and Nonusers

	Game Users (<i>n</i> = 136)	Nonusers (<i>n</i> = 141)	Test of Difference
Age, years			$\chi^2 = 2.86$
18–24	6 (4.4)	9 (6.4)	
25–34	46 (33.8)	51 (36.2)	
35–44	52 (38.2)	54 (38.3)	
45–54	25 (18.4)	17 (12.1)	
≥ 55	7 (5.1)	10 (7.1)	
Gender: male	56 (41.2)	65 (46.1)	$\chi^2 = 4.58$
Ethnicity: white	62 (45.6)	95 (67.4)	$\chi^2 = 13.38^c$
Education			$\chi^2 = 28.61^c$
High school or below	53 (39.0)	23 (16.3)	
Some college	36 (26.5)	26 (18.4)	
Associates/bachelors	44 (32.4)	82 (58.2)	
Advanced degree	3 (2.2)	10 (7.1)	
Marital status: married	56 (41.2)	60 (42.6)	$\chi^2 = 0.05$
Annual personal income			$\chi^2 = 10.01$
< \$15,000	24 (17.6)	21 (14.9)	
\$15,000–\$30,000	27 (19.9)	17 (12.1)	
\$31,000–\$50,000	31 (22.8)	41 (28.4)	
\$51,000–\$70,000	20 (14.7)	26 (18.4)	
\$71,000–\$90,000	25 (18.4)	17 (12.1)	
\$91,000–\$110,000	5 (3.7)	11 (7.8)	
> \$110,000	4 (2.9)	9 (6.4)	
Full/part-time employment	113 (87.6)	109 (79.0)	$\chi^2 = 3.54$
Ever been to jail	33 (24.3)	18 (12.8)	$\chi^2 = 6.09^a$
Ever been homeless	24 (17.6)	37 (26.2)	$\chi^2 = 2.98$
Current legal problem(s)			
Money or debt	44 (32.4)	52 (36.9)	$\chi^2 = 0.63$
Family	42 (30.9)	59 (41.8)	$\chi^2 = 3.59$
Apartment housing	50 (36.8)	32 (22.7)	$\chi^2 = 6.58^a$
Home foreclosure	16 (11.8)	10 (7.1)	$\chi^2 = 1.78$
Immigration	12 (8.8)	3 (2.1)	$\chi^2 = 6.06^a$
Criminal record history	17 (12.5)	15 (10.6)	$\chi^2 = 0.24$
Estate/probate	19 (14.0)	6 (4.3)	$\chi^2 = 7.96^b$
Tax	24 (17.6)	19 (13.5)	$\chi^2 = 0.92$
Unemployment or WC	23 (16.9)	15 (10.6)	$\chi^2 = 2.30$
Criminal problem	11 (8.1)	15 (10.6)	$\chi^2 = 0.53$
Other	5 (3.7)	8 (5.7)	$\chi^2 = 0.62$
Number of current legal problems	6.29 ± 4.87	4.63 ± 3.07	$t = 3.40^b$
Past legal problem(s)			
Money or debt	69 (50.7)	56 (39.7)	$\chi^2 = 3.394$
Family	28 (20.6)	49 (34.8)	$\chi^2 = 6.919^b$
Apartment housing	40 (29.4)	28 (19.9)	$\chi^2 = 3.411$
Home foreclosure	16 (11.8)	9 (6.4)	$\chi^2 = 2.442$
Immigration	18 (13.2)	5 (3.5)	$\chi^2 = 8.536^b$
Criminal record history	12 (8.8)	13 (9.2)	$\chi^2 = 0.013$
Estate/probate	15 (11.0)	7 (5.0)	$\chi^2 = 3.483$
Tax	32 (23.5)	17 (12.1)	$\chi^2 = 6.258^a$
Unemployment or WC	21 (15.4)	15 (10.6)	$\chi^2 = 1.412$
Criminal problem	19 (14.0)	18 (12.8)	$\chi^2 = 0.087$
Other	5 (3.7)	9 (6.4)	$\chi^2 = 1.057$
Number of past legal problems	3.67 ± 1.76	4.41 ± 2.72	$t = -.98$
Self-rating of legal knowledge	3.24 ± 0.99	2.84 ± 0.80	$t = 3.73$
Procedural Justice Scale	3.85 ± 0.98	3.57 ± 1.08	$t = 2.26^a$

Data are presented as *n* (%) or mean ± SD.

^a *P* < .05

^b *P* < .01

^c *P* < .001

WC, Worker's Compensation.

Table 3 Clinical and Psychosocial Characteristics of RePresent Game Users and Nonusers

	Game Users (<i>n</i> = 136)	Game Nonusers (<i>n</i> = 141)	Test of Difference
General Self-Efficacy Scale	29.11 ± 4.6	28.81 ± 5.50	<i>t</i> = .49
Empowerment Scale	2.93 ± 0.50	2.97 ± 0.50	<i>t</i> = .79
BASIS-24	2.18 ± 0.70	2.45 ± 0.70	<i>t</i> = -.88
PHQ-2	3.97 ± 1.56	4.40 ± 1.74	<i>t</i> = -2.12 ^a
GAD-2	4.00 ± 1.69	4.37 ± 1.77	<i>t</i> = -1.74
Q-LES-Q-SF	0.61 ± 0.17	0.53 ± 0.15	<i>t</i> = 4.05 ^b
Positive screen for alcohol use problems	41 (30.1)	4 (2.8)	$\chi^2 = 37.95^b$
Positive screen for drug use problems	53 (39.0)	71 (50.4)	$\chi^2 = 3.63$
Any mental health service use in past year	43 (23.1)	52 (39.1)	$\chi^2 = 1.43$
Any substance abuse treatment in past year	26 (19.4)	21 (15.8)	$\chi^2 = 0.60$

Data are presented as mean ± SD or *n* (%).

^a *P* < .05.

^b *P* < .001.

BASIS-24, Behavior and Symptom Identification Scale; PHQ-2, Patient Health Questionnaire-2; GAD-2, Generalized Anxiety Disorder scale; Q-LES-Q-SF, Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form.

nonusers (75.8% versus 87.0%, respectively; chi-square = 5.18, *P* = .023).

A cluster analysis of the legal problems reported by the total sample identified four distinct groups with different clusters of legal problems. As shown in Table 4, the first group had many civil and criminal legal problems, the second group had mostly debt and tax problems, the third group had mostly family law problems, and the fourth group had a combination of housing, family, and debt problems. There were significant differences between groups on rates of each legal problem (*P* < .05), except for the Other legal problem category.

Table 5 shows the results of MANCOVAs comparing the four groups adjusting for background differences significantly different between groups, including gender, education, marital status, income, and history of incarceration. The group with many civil and criminal problems had significantly lower GSES and Empowerment Scale scores than the groups with mostly debt or tax problems and mostly family problems. The group with many civil and criminal legal problems also had significantly higher BASIS-24 scores than the group with mostly debt or tax problems. The group with mostly debt or tax problems had significantly higher Q-LES-Q-SF scores than the three other groups.

Discussion

This is the first study of the RePresent games, which are innovative new interventions that could address disparities in civil legal proceedings and may have public health implications. We noted that there was broad demand for the RePresent games, which

were accessed more than 7,000 times across four states. The availability of the RePresent games on both personal computers and mobile app platforms likely facilitated their accessibility across different segments of the population. Users of the RePresent games were from diverse sociodemographic backgrounds, and, importantly, the games reached the target populations for whom they were designed, i.e., low-income adults with various psychosocial problems and multiple civil legal problems. Moreover, we observed that game users were more likely to be racial minorities and to have been in jail before compared with nonusers who were also seeking legal aid. Game users also reported greater mental health symptoms and had more legal problems than nonusers. We theorize that the gamification of the RePresent content may make it more appealing to certain disadvantaged groups who may have limited opportunities to learn how to represent themselves in court. Our results are consistent with studies that have reported that gamifying learning experiences can increase motivation, engagement, performance, and positive behavioral change.^{32,33} The RePresent games appeared to be able to reach those who have traditionally experienced barriers to care and legal aid.

It is notable that both game users and nonusers seeking legal aid reported high levels of mental health and substance abuse problems. Across both game users and nonusers, more than 80 percent screened positive for both major depression and generalized anxiety disorder, more than 15 percent screened positive for alcohol use problems, and 45 percent screened positive for drug use problems. Yet only about one third of participants reported past-year use of mental health services, and

Table 4 Comparison of Groups with Different Clusters of Legal Problems

	Many Civil and Criminal Problems (n = 100)	Mostly Debt/Tax Problems (n = 73)	Mostly Family Problems (n = 48)	Combination of Housing/Family/Debt Problems (n = 56)	Group Comparisons ^a
Debt	28 (28.0)	55 (75.3)	0 (0.0)	13 (23.2)	2>1,4>3
Family	24 (24.0)	12 (16.4)	48 (100.0)	17 (30.4)	3>1,2,4
Apartment housing	24 (24.0)	2 (2.7)	0 (0.0)	56 (100.0)	4>1>2,3
Foreclosure	26 (26.0)	0 (0.0)	0 (0.0)	0 (0.0)	1>2,3,4
Immigration	13 (13.0)	0 (0.0)	1 (2.1)	1 (1.8)	1>2,3,4
Criminal record expungement	29 (29.0)	3 (4.1)	0 (0.0)	0 (0.0)	1>2,3,4
Estate/probate	24 (24.0)	0 (0.0)	1 (2.1)	0 (0.0)	1>2,3,4
Tax problem	16 (16.0)	26 (35.6)	0 (0.0)	1 (1.8)	2>1>3,4
Unemployment	37 (37.0)	0 (0.0)	0 (0.0)	1 (1.8)	1>2,3,4
Criminal charge	22 (22.0)	0 (0.0)	3 (6.3)	1 (1.8)	1>3>2; 1>4
Other	8 (8.0)	0 (0.0)	2 (4.2)	3 (5.4)	NS
Total	7.8 ± 5.4	4.2 ± 2.0	3.5 ± 1.6	4.6 ± 3.1	1>2,3,4

Data are presented as n (%) or mean ± SD.

^a 1 = Many civil and criminal problems; 2 = Mostly debt/tax problems; 3 = Mostly family problems; 4 = Combination of housing/family/debt problems. NS, not significant.

Table 5 Analyses Comparing Groups of Different Clusters of Legal Problems^a

	Many Civil and Criminal Problems (n = 100)	Mostly Debt/Tax Problems (n = 73)	Mostly Family Problems (n = 48)	Combination of Housing/Family/Debt Problems (n = 56)	Test of Difference	Pairwise Comparisons ^b
Self-rating of legal knowledge	3.00 ± .84	3.32 ± 1.02	2.92 ± .66	2.82 ± 1.02	2.05	NS
Procedural Justice Scale	3.58 ± .95	4.03 ± 1.06	3.79 ± 1.08	3.45 ± 1.05	1.24	NS
General Self-Efficacy Scale	27.25 ± 4.96	30.86 ± 4.59	29.89 ± 5.32	28.68 ± 4.66	4.91 ^c	2,3>1
Empowerment Scale	2.77 ± .50	3.14 ± .48	3.01 ± .48	2.96 ± .39	4.09 ^c	2,3>1
BASIS-24	2.65 ± 1.02	1.90 ± .80	2.45 ± 1.01	2.44 ± 1.01	3.68 ^d	1>2
PHQ-2	4.53 ± 1.71	3.73 ± 1.43	4.43 ± 1.62	3.94 ± 1.74	2.26	NS
GAD-2	4.42 ± 1.76	3.51 ± 1.43	4.63 ± 1.78	4.26 ± 1.83	2.52	NS
Q-LES-Q-SF	0.54 ± .16	0.65 ± .14	0.56 ± .15	0.56 ± .20	3.92 ^c	2>1,3,4
Days of alcohol use, past month	2.75 ± 1.37	2.97 ± 1.35	2.48 ± 1.55	2.62 ± 1.63	.58	NS
Days of drug use, past month	2.58 ± 1.47	1.92 ± 1.28	1.96 ± 1.35	1.62 ± 1.13	5.80	NS

Data are presented as mean ± SD.

^a Multivariate analyses of covariance were adjusted for background differences between groups, including gender, education, marital status, income, and history of incarceration.

^b 1 = Many civil and criminal problems; 2 = Mostly debt/tax problems; 3 = Mostly family problems; 4 = Combination of housing/family/debt problems.

^c P < .01.

^d P < .05.

NS, not significant; BASIS-24, Behavior and Symptom Identification Scale; PHQ-2, Patient Health Questionnaire-2; GAD-2, Generalized Anxiety Disorder scale; Q-LES-Q-SF, Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form.

17 percent reported past-year use of substance abuse treatment. These results suggest underutilization of mental health and substance abuse treatment in this population and highlight a potential opportunity to provide screening and intervention among those seeking legal aid. Brief mental health and substance use disorder screening measures could be incorporated into games like RePresent, or clients could be referred to other games specially designed to assess and treat mental health conditions. In fact, there is a growing industry of video games purportedly designed to treat a range of mental disorders.³⁴

In addition, we noted that most participants seeking legal aid experienced multiple legal problems concurrently. Different patterns of legal problems were differentially associated with clinical and psychosocial problems. Participants with many civil and criminal problems scored lower on measures of self-efficacy, empowerment, and mental health than those with other patterns of civil problems. Participants with mostly debt or tax problems reported the highest quality of life relative to participants with other civil problems. These findings again underscore the nexus between legal problems and other psychosocial problems.

The most common legal problem reported by game users pertained to apartment housing, presumably evictions. This is perhaps not surprising because one of the most common civil legal problems that people face are evictions,^{8,35} and the RePresent: Renter game was specifically designed for those dealing with housing problems. There has been growing research on the deleterious effects of evictions on individuals, communities, and society at large.³⁶ Eviction law can be complicated, and the legal process may be heavily tilted in favor of those who have legal knowledge, such as experienced landlords or landlords who can afford attorneys. Tenants could derive considerable benefit and knowledge about evictions from programs like the RePresent games. Evictions and other housing problems may be particularly salient to those with criminal histories who often face considerable challenges obtaining housing and employment.^{37,38} This study may lend support to the broader development of gamified interventions in various legal settings. A systematic review reported that the use of video games within secure forensic settings may have therapeutic value,³⁹ and games have been developed for competency restora-

tion.^{40,41} Thus, the RePresent games may exemplify the potential utility of engaging and educating clients with various legal concerns across settings.

In summary, we found a great demand for the RePresent games, and these games represent a new viable way to engage and educate adults on self-representation in civil court. Many adults with civil legal problems were also experiencing mental health and substance use problems. Although all the adults in our study were seeking legal aid, most had not received any mental health or substance abuse treatment services in the past year, which suggests a need for greater intervention in that respect. The RePresent games and other legal aid platforms may represent a unique point of entry for screening and treatment for behavioral health. There may also be opportunities to gamify and integrate mental health treatment outreach efforts into products like the RePresent games, and these opportunities should be explored. Incorporating health care services may further allow for greater therapeutic jurisprudence to occur among those involved in the adversarial legal process. Further study is needed to understand how to integrate legal and health care services and to evaluate whether games like RePresent actually lead to improved legal and clinical outcomes.

There are a few study limitations to note. The survey data were cross-sectional, and further study is needed on the nature and direction of the association between legal problems and clinical and psychosocial problems. We did not have data on game users and nonusers who did not participate in the survey, so we do not know whether there was a selection bias. Data on legal problems and psychosocial problems, particularly mental health symptoms, were based on self-report and were not validated by legal and mental health professionals. These weaknesses notwithstanding, there were several strengths of the study: this is an area that has not been previously explored in the mental health field, the data were collected from game users in a real-world setting instead of in a contrived lab setting, and the results highlight potential new avenues to assist those with mental illness.

Acknowledgments

Special thanks to the NuLawLab and the Game Design Studio at Northeastern University School of Law, MassLegalHelp.org, New Hampshire Legal Aid, and New Haven Legal Assistance and Pine Tree Legal Assistance.

References

1. Legal Services Corporation: Documenting the justice gap in America, 2009. Available at: <https://www.lsc.gov/media-center/press-releases/2011/lsc-releases-updated-report-justice-gap-america>. Accessed November 13, 2019
2. Shepard RT: The self-represented litigant: implications for the bench and bar. *Fam Ct Rev* 48:607–18, 2010
3. Legal Service Corporation: The justice gap: measuring the unmet civil legal needs of low-income Americans. Washington, DC: Legal Services Corporation, 2017
4. Tsai J, Jenkins D, Lawton E: Civil legal services and medical-legal partnerships needed by the homeless population: a national survey. *Am J Public Health* 107:398–401, 2017
5. Washington State University Social and Economic Sciences Research Center: Civil legal needs study update: results of a state-wide probability survey of low and lowest-income households. Washington: Washington State Supreme Court, 2015
6. Abel LK, Rettig M: State statutes providing for a right to counsel in civil cases. *J Poverty Law & Pol’y* 40:245–70, 2006
7. Udell D: The civil legal aid movement: 15 initiatives that are increasing access to justice in the United States. New York: Impact Center for Public Interest Law, New York Law School, 2016
8. Sandefur RL: What we know and need to know about the legal needs of the public. *SC L Rev* 67:443–59, 2015
9. Cantrell DJ: Justice for interests of the poor: the problem of navigating the system without counsel. *Fordham L Rev* 70:1573–90, 2002
10. American Bar Association: Find legal help. Available at: https://www.americanbar.org/groups/legal_services/flh-home. Accessed October 19, 2018
11. Connecticut Judicial Branch: Self-help section. Available at: <https://www.jud.ct.gov/selfhelp.htm>. Accessed October 19, 2018
12. CTLawHelp.org: Self-help. Available at: <https://ctlawhelp.org/en/self-help>. Accessed October 19, 2018
13. Wexler DB: Two decades of therapeutic jurisprudence. *Touro L Rev* 24:17–29, 2008
14. O’Sullivan MM, Brandfield J, Hoskote SS, *et al*: Environmental improvements brought by the legal interventions in the homes of poorly controlled inner-city adult asthmatic patients: a proof-of-concept study. *J Asthma* 49:911–7, 2012
15. Retkin R, Brandfield J, Bacich C: Impact of Legal Interventions on Cancer Survivors. New York: LegalHealth, 2007
16. Tsai J, Middleton M, Villegas J, *et al*: Medical-legal partnerships at Veterans Affairs medical centers improved housing and psychosocial outcomes for vets. *Health Aff (Millwood)* 36:2195–203, 2017
17. Braveman P, Gottlieb L: The social determinants of health: it’s time to consider the causes of the causes. *Public Health Rep* 129: 19–31, 2014
18. The RePresent Games. Available at: <https://www.representgames.org/about>. Accessed November 14, 2019
19. Rehbein F, Staudt A, Hanslmaier M, Kliem S: Video game playing in the general adult population of Germany: can higher gaming time of males be explained by gender specific genre preferences? *Computers Hum Behav* 55:729–35, 2016
20. Wittek CT, Finserås TR, Pallesen S, *et al*: Prevalence and predictors of video game addiction: a study based on a national representative sample of gamers. *Int J Ment Health Ad* 14:672–86, 2016
21. Hartevelde C, Manning N, Abu-Arja F, *et al*: Design of playful authoring tools for social and behavioral science. Presented at the 22nd International Conference on Intelligent User Interfaces, Limassol, Cyprus, March 2017
22. Lidz CW, Hoge SK, Gardner W, *et al*: Perceived coercion in mental hospital admission: pressures and process. *Arch Gen Psychiatry* 52:1034–9, 1995
23. Rogers ES, Ralph RO, Salzer MS: Validating the empowerment scale with a multisite sample of consumers of mental health services. *Psychiat Serv* 61:933–6, 2010
24. Sherer M, Maddux JE, Mercandante B, *et al*: The self-efficacy scale: construction and validation. *Psychol Rep* 51:663–71, 1982
25. Scholz U, Doña BG, Sud S, Schwarzer R: Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *Eur J Psychol Assess* 18:242–51, 2002
26. Eisen SV, Normand SL, Belanger AJ, *et al*: The revised Behavior and Symptom Identification Scale (BASIS-R): reliability and validity. *Med Care* 42:1230–41, 2004
27. Cameron IM, Cunningham L, Crawford JR, *et al*: Psychometric properties of the BASIS-24® (Behaviour and Symptom Identification Scale–Revised) mental health outcome measure. *Int J Psychiat Clin* 11:36–43, 2007
28. Kroenke K, Spitzer RL, Williams JB, Löwe B: An ultra-brief screening scale for anxiety and depression: the PHQ–4. *Psychosomatics* 50:613–21, 2009
29. Kroenke K, Spitzer RL, Williams JBW, *et al*: Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Ann Intern Med* 146:317–25, 2007
30. National Institute of Alcohol Abuse and Alcoholism. Appendix A: differences among survey data sources. Available at: <https://pubs.niaaa.nih.gov/publications/surveillance74/appendix.htm>. Accessed February 11, 2019
31. Endicott J, Nee J, Harrison W, Blumenthal R: Quality of life enjoyment and satisfaction measure: a new measure. *Psychopharmacol Bull* 29:321–6, 1993
32. Faiella F, Ricciardi M: Gamification and learning: a review of issues and research. *J e-Learning Knowl Soc* 11:13–21, 2015
33. Sardi L, Idri A, Fernández-Alemán JL: A systematic review of gamification in e-Health. *J Biomed Inform* 71:31–48, 2017
34. Fleming TM, Bavin L, Stasiak K, *et al*: Serious games and gamification for mental health: current status and promising directions. *Front Psychiat* 7:215, 2017
35. Hartman C, Robinson D: Evictions: the hidden housing problem. *Housing Pol Debate* 14:461–501, 2013
36. Desmond M. *Evicted: poverty and profit in the American city*. New York: Crown Publishers, 2016
37. Evans DN, Porter JR: Criminal history and landlord rental decisions: a New York quasi-experimental study. *J Exp Criminol* 11: 21–42, 2015
38. Tsai J, Rosenheck RA: Homeless veterans in supported housing: exploring the impact of criminal history. *Psychol Serv* 10:452, 2013
39. Gooch P, Living R: The therapeutic use of videogames within secure forensic settings: a review of the literature and application to practice. *Brit J Occup Ther* 67:332–41, 2004
40. Mueller C, Wylie AM: Examining the effectiveness of an intervention designed for the restoration of competency to stand trial. *Behav Sci & L* 25:891–900, 2007
41. Casas J, Leany BD: Tools for restoring legal competency with Latinos, in *Toolkit for Counseling Spanish-Speaking Clients: Enhancing Behavioral Health Services*. Edited by Benuto LT. Cham, Switzerland: Springer International Publishing, 2017