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Barriers and facilitators to documenting social needs in electronic health records: a pilot survey

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Abstract

Introduction. This pilot study investigates the impact of socioeconomic status, perceived barriers, sociopsychological factors, and health-related contexts such as health literacy and the doctor-patient relationship on patient comfort and willingness to engage with electronic health records (EHRs).

Method. Data from 302 participants were collected via an online Amazon Mechanical Turk survey, assessing socioeconomic backgrounds, healthcare experiences, and willingness to share social needs and have them documented in EHR systems.

Analysis. Descriptive statistics analysed socioeconomic, sociopsychological, health-related, and outcome variables, followed by ordinary least squares regression to predict patients' willingness to share and document social needs in EHRs.

Results. The findings revealed that while a positive doctor-patient relationship increased patients' willingness to share social needs, it negatively influenced their willingness to have these needs documented in EHRs. In contrast, health literacy emerged as a significant positive predictor for willingness to document social needs in EHRs.

Conclusion. This study shows how the doctor-patient relationship and health literacy impact patient engagement with EHRs. While patients are willing to share social needs, concerns about data privacy hinder documentation. Improving health literacy and addressing socioeconomic disparities are crucial for enhancing documentation practices, promoting more patient-centred and equitable healthcare through digital platforms.

Introduction

As digital health continues to transform the healthcare landscape, the integration of electronic health records (EHR) and associated platforms becomes a crucial tool for advancing health equity. This integration facilitates a deeper understanding of the diverse patient populations' willingness to share and document social determinants of health (SDOH), including economic stability, education access and quality, health care access and quality, neighborhood and built environment, social and community context (Office of Disease Prevention and Health Promotion). Initiatives like the Centers for Medicare and Medicaid Services' contemplation of quality measures for social risk screening highlight the potential for standardized EHR reporting to improve patient outcomes across various demographics (Albert et al., 2022; Billioux et al., 2017).

While SDOH are often considered community-wide issues, research also underscores their prevalence at the individual level, manifesting as unstable housing, food insecurity, transportation difficulties, and the need for utility payment assistance (Gruß et al., 2021; Kreuter et al., 2021; Tuzzio et al., 2022). Despite general openness to disclosing these personal challenges (Albert et al., 2022; Rogers et al., 2020), there remains significant hesitation to document these needs in EHR systems (Albert et al., 2022; De Marchis et al., 2019), especially among marginalized groups due to various perceived barriers (Drake et al., 2021). This study investigates factors that potentially affect patients' willingness to document SDOH in health records and prioritizes individual-level SDOH. By focusing on these aspects, the study seeks to advance healthcare practices that reduce health disparities and promote health equity.

Socioeconomic drivers in EHR participation

The integration of SDOH into patient care is increasingly recognized as essential for promoting health equity, particularly through digital health technologies like EHRs (Alley et al., 2016). Socioeconomic factors, such as income and education, significantly influence patient engagement with EHRs, impacting both comfort and usage (Adler & Stead, 2015; Davis et al., 2023). Therefore, understanding how socioeconomic factors, along with social needs, influence patients' willingness to share and have their needs documented in EHRs is crucial for addressing health disparities within digital healthcare frameworks.

Perceived barriers for patients to express social needs

Despite the technological advancements like EHRs facilitating SDOH screening, patients remain hesitant to share detailed social backgrounds information (Davidson et al., 2020; Garg et al., 2016). This reluctance can stem from concerns about data misuse (Herrera et al., 2019) or fears of stigmatization and clinician concern of causing embarrassment (Kepper et al., 2023). While it's evident that understanding patient perspectives is pivotal for effective healthcare, a gap remains. Traditional healthcare often overlooks the patient's viewpoint, potentially leading to ineffectual treatments (Singh Ospina et al., 2019). Despite general patient support for SDOH screenings, patients' willingness to disclose personal information varies across demographics, revealing barriers to full participation (Rogers et al., 2020).

Theory of planned behavior as a framework

To further understand the dynamics of patient engagement with EHRs, the theory of planned behaviour (TPB) provides a valuable framework. It explains how attitudes, subjective norms, and perceived behavioral control shape health-related behaviours, such as the willingness to share and document social needs (Ajzen, 1991). These three constructs are critical in influencing a patient's decision to disclose social determinants, guided by anticipated outcomes, societal expectations, and confidence in communication, as outlined by Hardeman et al. (2002). This framework has been applied in health behavior studies by Davis et al. (2023) and Zellmer et al. (2022). Applying TPB to social needs assessments helps explain patients' decisions to disclose or withhold information, based on their belief that sharing benefits health and aligns with societal norms (Ajzen, 1991).

Health care factors

Health literacy and the doctor-patient relationship are key elements in enhancing health equity through digital health communication. Health literacy extends beyond understanding medical language to encompass the ability and motivation to effectively use health information, crucial for understanding and expressing SDOH (Berkman et al., 2011; Nutbeam & Kickbusch, 1998). In digital health settings, health literacy significantly affects patients' readiness to share their social needs in EHRs (Nutbeam, 2008). Studies found that patients with limited health literacy face greater challenges in healthcare setting (Logan, 2017; Ungar et al., 1998). Considering their significant impact on patient engagement, this study also examines how health literacy and the doctor-patient relationship potentially influence patients' willingness to discuss and document their social needs in EHRs.

Research questions

Given the above contexts, the study addresses the following questions:

RQ1: how do socioeconomic factors such as income and education level influence patients' comfort and willingness to document social determinants of health in EHRs?

RQ2: how do barriers related to providers, the consultation environment, and perceived legitimacy impact the comfort level of patients in discussing social needs with clinicians and their subsequent willingness to have these needs documented in EHRs?

RQ3: in the context of the TPB, how do subjective norms, attitudes towards expressing social needs, and perceived behavioral control influence patients' comfort in sharing social needs and their inclination to have these needs documented in EHRs?

RQ4: how do health literacy and the doctor-patient relationship impact patients' willingness to discuss and document their social needs in EHRs?

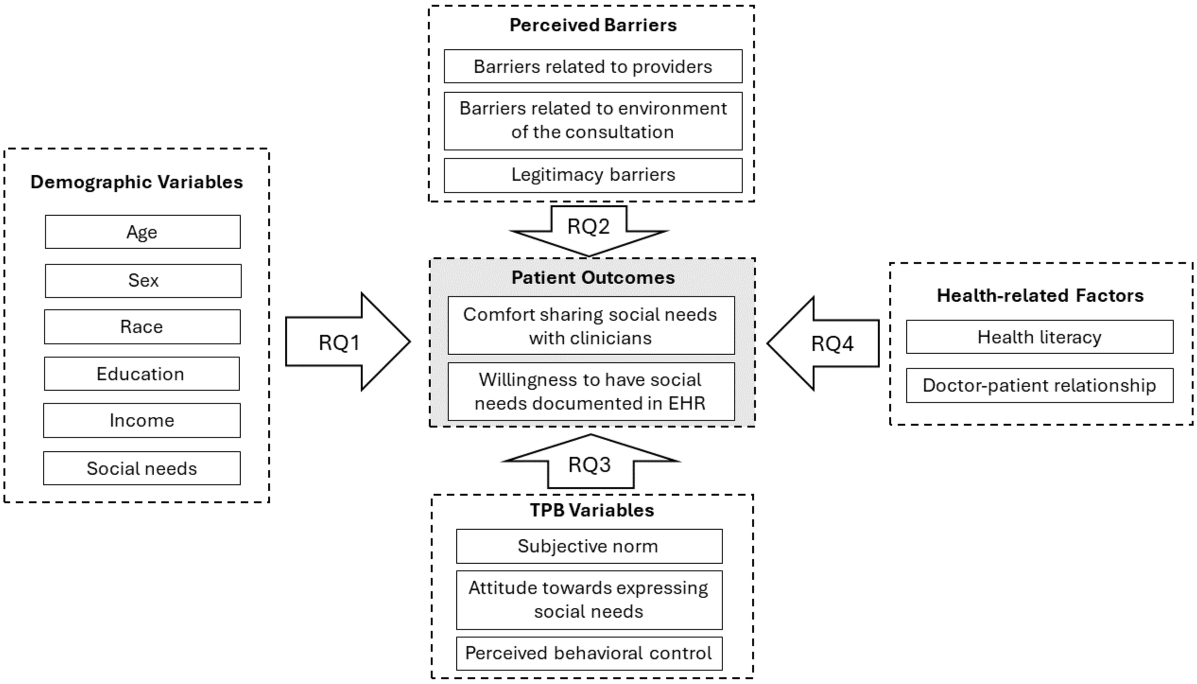

Figure 1. Conceptual model and research questions

Methods

Samples and design

To answer our research questions, 302 participants were sampled from Amazon Mechanical Turk (MTurk) in Spring 2023. MTurk is a popular online platform where people can perform tasks for a small financial reward (Paolacci & Chandler, 2014). It has been a valuable resource for research over the years (Goodman et al., 2013), and the data obtained through MTurk is generally regarded to be as good or better than data from undergraduate research groups (Miller et al., 2017). After excluding 20 participants for incomplete data, the final sample size was 282. Each participant received a $1 compensation.

Survey instruments and analytic tools

The survey assessed socioeconomic variables such as race, sex, income, and education levels, which are recognized as significant predictors of how patients interact with EHR systems. Besides the demographic variables, we adopted a 10-item measure from a previous study on patients' willingness to report social needs (Albert et al., 2022), based on the Accountable Health Communities Health-Related Social Needs Screening Tool (Billioux et al., 2017), covering housing instability, food insecurity, transportation, and utility assistance.

Subsequently, the survey examined perceived barriers to documenting SDOH in EHRs, employing a 16-item scale from Brandes et al. (2015) to identify issues related to healthcare providers' behavior, consultation environment, and the perceived legitimacy of EHR systems. The next section of the survey incorporated scales based on the Theory of Planned Behavior from Lin et al. (2016) to measure attitudes, subjective norms, and perceived behavioral control over sharing and documenting social needs. For healthcare factors, health literacy and the doctor-patient relationship were evaluated using validated scales from Chinn & McCarthy (2013) and Graffigna et al. (2017), providing insights into how patients understand and use health information and their interactions with providers.

Two outcomes were measured to evaluate the effectiveness of EHR integration in addressing social needs: (1) patients' comfort level in reporting social needs to clinicians, and (2) patients' willingness to document these needs in EHRs, using established frameworks from the studies by Schickedanz et al. (2019) and Albert et al. (2022). Descriptive statistics and Ordinary Least Squares (OLS) regressions, performed with SPSS version 29.0, analysed the impact of socioeconomic, sociopsychological, and health-related factors on these outcomes, offering detailed insights into the research questions.

Results

Descriptive analysis

Out of 302 survey participants, the average age was 36.48 years with a standard deviation of 10.75. Most participants (73.18%) were male, identified as White (94%), and held at least a college degree (88%). Income distribution among respondents showed 32.3% earning between $25,000 and $49,999, 35.1% between $50,000 and $74,999, and 24.5% earning between $75,000 and $99,999. Social needs assessment revealed that 60% of participants reported housing issues, 55% had concerns regarding utilities, 50.4% faced food insecurity, and 17.4% experienced transportation difficulties, with the range of reported social needs varying from 0 to 4.

In their interactions with healthcare providers, patients indicated moderate concerns across various perceived barriers, particularly regarding the appropriateness of discussing social needs. Analysis of the theory of planned behavior variables revealed that attitudes, behavioral control, and subjective norms moderately influenced the expression of social needs. Health literacy was assessed as relatively high, suggesting a good understanding and use of health information. The doctor-patient relationship was generally viewed positively, enhancing communication. However, patients showed some hesitancy when it came to sharing social needs with clinicians, and even more reluctance to have these needs documented in EHRs, indicating potential concerns about privacy or the management of their information.

Patients generally feel comfortable sharing their social needs with clinicians, indicating a high level of openness during personal interactions. However, their willingness to have these social needs documented in electronic health records (EHRs) is more moderate, suggesting some reservations about the privacy or use of this sensitive information in digital formats. Cronbach's alpha (1951) tests confirmed the reliability of these measures, with all constructs' alpha values exceeding 0.7, indicating good internal consistency (Hair et al., 2010; Sürücü & Maslakci, 2020). Table 1 displays the descriptive statistics for the variables of interest.

Construct (Cronbach's α)	Mean (S.D.)	Min/Max
Barriers related to providers (0.851)	5.04 (1.17)	1/7
Barriers related to environment of the consultation (0.891)	4.96 (1.24)	1/7
Legitimacy barriers (0.868)	4.91 (1.47)	1/7
Subjective norm (0.838)	5.03 (1.36)	1/7
Attitude towards expressing social needs (0.897)	5.47 (1.07)	1/7
Perceived behavior control (0.837)	5.27 (1.16)	1/7
Health Literacy (N/A)	2.30 (0.37)	1/3
Doctor-Patient Relationship (0.926)	5.39 (0.85)	1/7
Comfort Sharing social needs with Clinicians (0.846)	3.71 (0.72)	0/4
Willingness to have social needs documented in EHR (0.767)	2.32 (1.51)	0/4
N=302		

Note: For 7-point scales, 1 is the lowest and 7 is the highest. For 3-point scales, 1 is the lowest and 3 is the highest. For 4-point scales, 0 is the lowest and 4 is the highest.

Table 1. Descriptive analysis of predictors and outcome variables

Ordinary least square (OLS) regression

The OLS regression models offer revealing insights into patients' comfort with sharing social needs (See Table 2). Regarding demographic variables, income was a significant predictor for both comfort in sharing social needs ($\beta = .070$, $p < .05$) and willingness to have them documented in EHR ($\beta = .181$, $p < .05$). This indicates that patients with higher income levels may be more comfortable and willing to engage in health processes involving their social needs. Financial stability could lead to greater confidence in interactions with healthcare systems. Social needs had a significant positive relationship with the willingness to have these needs documented in EHR ($\beta = .142$, $p < .05$). Patients acknowledging their social needs are likely more open to having them formally recognized and addressed within their health records.

Regarding the TPB variables, the attitude towards expressing social needs stood out as a significant factor for both comfort in sharing ($\beta = .343$, $p < .001$) and willingness to document ($\beta = .251$, $p < .05$) social needs in EHRs. This underscores the influence of individual beliefs on engagement with healthcare providers. Conversely, perceived behavioral control and subjective norms did not emerge as significant predictors, indicating that patients' confidence in their ability to express social needs and their perceptions of societal expectations may not be as impactful in this context. Similarly, the various barriers did not significantly predict participants' comfort or willingness to document social needs in EHRs.

The doctor-patient relationship had a nuanced impact, enhancing comfort with sharing social needs ($\beta = .149$, $p < .01$) while correlating with a lower willingness to document these needs in EHRs ($\beta = -.370$, $p < .05$). This suggests that when patients have a trusting relationship with their doctors, they may feel less need for formal documentation of their social needs, relying instead on the strength of their interpersonal communication. Health literacy's significant positive correlation with the willingness to document social needs ($\beta = .957$, $p < .001$) indicates that patients who better comprehend health information may advocate more for integrating their social needs into medical records, reflecting a desire for a more holistic approach to health care management. These findings highlight the roles of income, attitudes, health literacy, and trust in shaping patients' comfort and willingness to document social needs, pointing to the need for education and communication strategies.

	Comfort Sharing Social Needs with Clinicians				**Willingness to have social needs documented in EHR**			
Demographic Variables	**Coefficient (SE)**		**95% CI**		**Coefficient (SE)**		**95% CI**	
Age	.002	(.003)	-.003	.007	.004	(.008)	-.013	.020
Sex (female as reference)	-.066	(.059)	-.183	.050	.050	(.192)	-.327	.427
Race (non-white as reference)	-.068	(.113)	-.289	.154	.098	(.364)	-.619	.815
Education	-.025	(.030)	-.084	.034	.076	(.097)	-.115	.267
Income	**.070***	(.027)	.017	.123	**.181***	(.087)	.009	.353
Social needs	.035	(.020)	-.004	.074	**.142***	(.065)	.015	.269
Perceived Barriers	**Coefficient (SE)**		**95% CI**		**Coefficient (SE)**		**95% CI**	
Barriers related to providers	.099	(.051)	-.002	.200	-.081	(.166)	-.408	.245
Barriers related to environment	-.015	(.049)	-.111	.082	.203	(.158)	-.108	.515
Legitimacy barriers	.033	(.029)	-.024	.090	.131	(.094)	-.053	.316
TPB variables	**Coefficient (SE)**		**95% CI**		**Coefficient (SE)**		**95% CI**	
Subjective norm	-.027	(.033)	-.092	.037	-.170	(.107)	-.380	.040
Attitude towards expressing	**.343*****	(.039)	.267	.420	**.251***	(.126)	.003	.500
Perceived behavioral control	.029	(.047)	-.063	.120	.109	(.151)	-.188	.406
Health-related Factors	**Coefficient (SE)**		**95% CI**		**Coefficient (SE)**		**95% CI**	
Doctor-Patient Relationship	**.149****	(.046)	.059	.239	**-.370***	(.147)	-.661	-.080
Health Literacy	-.079	(.078)	-.233	.075	**.957*****	(.253)	.459	1.454
	F (14, 286) = 33.80***				F (14, 286) = 4.30***			
	Adjusted R^2 = .605				Adjusted R^2 = .133			
Note: N=302. *P<.05, **P<.01, ***P<.001								

Table 2. Predictors of patient comfort and willingness to document social needs in EHRs

Discussion

Summary and interpretation of the results

Our study highlights critical aspects influencing patient engagement with EHRs, especially in relation to social needs. The significant role of income, as identified in our study, echoes findings from previous studies (Albert et al., 2022; Davis et al., 2023), reflecting the socioeconomic barriers to digital health access and utilization, as discussed in earlier research (Adler & Stead, 2015). This study builds on the findings described by Albert, et.al. (2022) in that it goes beyond a single health care setting and system. This accentuates the potential barriers marginalized groups may encounter in digital healthcare environments.

We also identified that patients with higher health literacy are more likely to permit the documentation of their social needs. In a scoping review conducted by Wark et al. (2021) examined stakeholder (e.g., patient and community) engagement in integrating SDOH data into EHR systems. They noted that subjects were less likely to find the practice acceptable when communication was inadequate or when the subjects believed the social needs were not actionable by the provider, particularly among those with low health literacy. The review concluded that more information is needed to improve patients' engagement and determine acceptability. Further, our study results also align with previous findings (Gruß et al., 2021; Kreuter et al., 2021), underscoring the importance of integrating SDOH into digital health platforms for health equity. The study also revealed that personal attitudes toward expressing social needs, consistent with the TPB (Ajzen, 1991; Hardeman et al., 2002), indicating that these individual beliefs significantly influence patient engagement with healthcare providers.

Interestingly, our study reveals that the doctor-patient relationship plays a nuanced role in how patients engage with EHRs. While there is an increased willingness among patients to share their social needs with clinicians, there is a noticeable decline in their comfort with having these needs formally recorded in EHRs. This suggests that while trust in the doctor-patient relationship may encourage verbal disclosure, concerns about privacy and the usage of personal information may inhibit the formal documentation of these discussions. Additionally, patients with higher health literacy are more willing to have their social needs documented, underscoring the importance of health literacy in the process. This finding reflects insights from previous studies (Grünloh et al., 2018; Hall et al., 2001), suggesting that strong interpersonal communication may reduce the need for formal documentation. Furthermore, the correlation between high health literacy and documentation willingness (Berkman et al., 2011; Nutbeam & Kickbusch, 1998), highlights the pivotal role of health literacy in enabling patients to engage more effectively with EHRs, thus enhancing personalized and equitable care through EHRs.

Significance

This study offers significant theoretical contributions to the understanding of patient engagement with EHRs, particularly in sharing and documenting social needs information. By delineating '*discomfort with social needs information in the medical record*' into '*comfort with sharing such information with clinicians*' and '*willingness to have it documented*', it provides novel insights into patients' perspectives. This distinction not only broadens the theoretical landscape as discussed in the works of authors like Adler and Stead (2015) and Gruß et al. (2021), but also deepens our comprehension of the multifaceted factors that shape patients' openness to share sensitive health data. This pilot study informs future research on addressing health literacy gaps and the doctor-patient relationship, laying the foundation for broader studies and practical improvements in digital health equity.

The practical implications of these findings are crucial for improving healthcare practices. The doctor-patient relationship's impact on EHR usage underscores the importance of integrating structural competency and cultural humility into clinical practice (Lekas et al., 2020; Metzl & Hansen, 2014). Patient-centred communication requires cultural and structural sensitivity and is essential for achieving better health outcomes (Naughton, 2018; Rathert et al., 2013). EHR technologies should be culturally tailored to address gaps in SDOH screening, creating environments where patients feel comfortable and empowered to share their needs (Rathert et al., 2017). Implications for clinician training and patient education are vital in enhancing patient engagement with EHRs, as indicated by previous studies (Bhattad & Pacifico, 2022; Hartzler et al., 2018; Rogers et al., 2020). Developing these areas could significantly improve patients' interaction with EHRs.

Additionally, by examining barriers to sharing social needs and applying the TPB, our study sheds light on potential interventions that could promote open communication between patients and healthcare providers. Enhancing provider awareness of patient needs and perceptions emphasizes the importance of aligning documentation with patient-centred care in EHRs (Stanhope & Matthews, 2019). These interventions are vital for addressing the barriers encountered by marginalized groups, aligning with the overarching aim of advancing health equity in digital health technologies. The insights from this study can assist healthcare providers and policymakers in developing strategies that ensure equitable access to digital health resources, contributing significantly to reduce health disparities.

Limitation and future research

This study's limitations include its reliance on an MTurk sample, suggesting a higher socioeconomic status due to the requirement for internet access. In addition, despite investigating social needs at the individual levels, we could not fully explore their diverse effects across different populations, potentially impacting data interpretation. Based on this pilot study, future research should include a representative sample to better understand the factors influencing patients' willingness to share and document social needs in EHRs across different demographics and healthcare settings. Furthermore, the lack of data on participants' medical conditions limits insight into how these might affect their willingness to share social needs. Additionally, this study highlights the critical roles of doctor-patient relationships, health literacy, and socioeconomic factors. However, our sample has limited power to fully explore the needs across various populations. Future research should develop interventions tailored to diverse underserved communities, aimed at enhancing these interactions, improving health literacy, and addressing socioeconomic disparities across varied healthcare environments and cultural contexts.

Conclusion

This research highlights the critical roles of the doctor-patient relationship and health literacy in determining how patients engage with EHRs. The findings demonstrate that a positive interaction with healthcare providers encourages patients to share their social needs, although there is reluctance to have these needs formally documented due to concerns about privacy and personal data usage. This finding also shows the importance of enhancing health literacy, which correlates with a greater willingness to document social needs in EHRs. Additionally, addressing socioeconomic disparities that affect these interactions is crucial for improving patient-centred care. Collectively, these efforts are essential for enriching healthcare experiences and promoting more equitable and effective healthcare delivery through digital platforms.

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