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Consider the root of the problem: increasing trainee skills at assessing and addressing social determinants of health

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Abstract

National pediatrics guidelines recommend screening all patients for unmet social needs to improve self-management of chronic conditions and health outcomes and to reduce costs. Practitioners involved in training pediatric clinicians need to understand how to prepare pediatric clinicians to effectively conduct social needs screening and where current training methods fall short. Our qualitative study investigated whether using “standardized” patients during trainee education improved trainees’ ability to assess and address adolescent patients’ social needs. Vulnerable adolescents should be prioritized in social determinants of health translational research because increased risk taking and emotionality may predispose this population to lower self-esteem and self-efficacy. We trained 23 adolescents (aged 16–18) recruited from an urban health-care education program to act as standardized patients (SPs). Two cohorts of nurse practitioner trainees ($n = 36$) enrolled in a simulation where the patient-actor presented with a minor chief complaint and related a fabricated complex social history. Pre-encounter, Cohort 1 ($n = 18$) reviewed psychosocial screeners; Cohort 2 ($n = 18$) were given in-depth information about social needs before meeting patients. SPs gave individualized feedback to trainees, and self-reflections were analyzed using thematic analysis. In Cohort 1, trainees identified some social needs, yet few intervened. Trainees expressed discomfort in: (a) asking socially sensitive questions and (b) triaging patient versus clinician priorities. Cohort 2 demonstrated improvements compared to Cohort 1 in identifying needs yet had similar difficulty with organization and questioning. Trainees were able to utilize a lower-stakes interaction with patient-actors to raise awareness regarding a patient’s sensitive needs and to organize care surrounding these patient-centered concerns.

Keywords

Social determinants of health, Standardized patients, Social needs, Simulation, Training, Adolescents

INTRODUCTION

Over the past decade, the need to take social determinants of health (SDOH) into account in providing care and in addressing health inequities has emerged as a critical health care priority due to the recognition that increasingly unequal distribution of basic social resources in our society has a substantial effect on health outcomes [1]. Federal guidelines from the National Academy of Medicine, American Academy of Pediatrics, and Centers for Medicare and Medicaid Services assert the importance of

Implications

Practice: Realistic simulations of interactions around social determinants of health with adolescent standardized patients demonstrated the need to increase trainee practice in asking sensitive questions, as well as in devising appropriate follow-up responses, and in improving trainee familiarity with local resource referrals.

Policy: Policymakers and credentialing boards should promote creation of more dynamic curricular programming that incorporates social determinants of health considerations to ensure that future health care trainees are adept and consistent in their screening and response to unmet social needs.

Research: Our preliminary study should be expanded to better understand how explicit integration of social determinants of health into simulation experiences across a range of disciplines and types of trainees can help improve clinical practitioners’ abilities to meaningfully integrate social determinants frameworks into their clinical interactions.

screening all patients to identify unmet social needs in hopes of improving self-management of chronic conditions, reducing health service utilization, and decreasing overall health care costs [2–5]. To date, the majority of the SDOH literature focuses on structural-level policies related to social needs assessment [6], but there is little consensus on how to best assess for unmet social needs within clinical practices and even less on how to do so in pediatric clinical practice.

The National Academy of Medicine recently published a white paper describing a conceptual model that highlights the value of integrating continuing education, partnership opportunities, and transformative learning experiences for clinicians and organizations in conducting universal social needs assessment [7]. However, this model does not specify what training and scaffolding of

lessons could help clinicians successfully implement screening and interventions related to SDOH. It is up to faculty training future health professionals to translate this requirement into meaningful curricular and experiential outcomes for trainees. As our health care systems build infrastructure to address avoidable health inequities in clinical settings, health professions faculty must simultaneously conduct parallel efforts to prepare clinicians to engage in SDOH-informed practice.

This article reports on a preliminary study of a simulation involving graduate nurse practitioner (NP) students and community adolescents acting as patient-actor or standardized patients (SPs), recruited from local high school health academies. In order to avoid confusion, the NP students will be referred to as trainees throughout the article and the high school students will be referred to as SPs. Within the NP sample, Cohort 1 refers to the NP trainees who went through the simulation experience in Year 1 of the study; Cohort 2 refers to the group of NPs who underwent the simulation in Year 2.

SDOH curricular design: past and future

The most common training strategies in graduate clinical programs tend to center around didactic/classroom learning, service learning, and community partnerships, yet there is little consensus about how to best apply these concepts in practice, particularly in nursing [8]. Curricular decisions and expectations for integrating SDOH into clinical training are primarily made at the individual instructor, program, and institutional level. Although credentialing bodies in NP education mandate that NP trainees should be educated about vulnerable populations, there is no formal agreement on how and what pieces of SDOH education should be prioritized or about the specific type and sequencing of modalities [9]. Even though graduate nursing education has a long history of caring for the holistic needs of patients [10], a lack of universal curricula and coordination make it difficult for various programs and schools to enhance SDOH teachings in a practical and methodical manner.

With disparate practices across the nation and across disciplines, SDOH-focused educational content suffers from topical variability, impacting instructors' ability to draw on a collective understanding of how to use these concepts in clinical settings. As such, faculty who develop training programs and curricula are pointing out the shortcomings of didactic formats and prescribed community rotations, which frame SDOH as a "laundry list" of social risk factors and relationships. This laundry list approach likely does not adequately teach health trainees about the roots of SDOH and why it is so important to understand in the complex contexts in which they operate [11]. For example, traditional advice to a family with overweight children would include encouraging

a shift from consuming processed to fresh foods, including fruits and vegetables. However, if the family has neither the income to purchase fresh foods nor stable housing in which to store and prepare them, this advice might not only be ignored but also increase the stigma of homelessness and the divide between clinician and family. In order to avoid this scenario, trainees would need to learn how to take a sensitive history about housing and food insecurity, and help the family find and connect to available community resources. In order to transform this clinical encounter, health professions faculty would need to teach trainees about awareness of the multilayered impacts of SDOH, culturally responsive history taking about SDOH, and how to determine and develop community health care linkages to change these conditions.

There is an emerging paradigm shift in the effort to "screen" and teach about SDOH. Originating in medical education arenas, there is a movement to teach a more nuanced approach to understanding and addressing the role of SDOH in health outcomes by incorporating a dynamic model that utilizes frameworks of structural competency and critical consciousness [11,12]. Structural competency supports trainee acknowledgement of a patient's individual circumstances (e.g., symptomatology, self-efficacy, risk factors), and the greater sociocultural context to better understand factors influencing patient behaviors [12]. Such curricular efforts aim to move the clinical application of SDOH frameworks past checking tasks off a list to an interactive dialogue where the future clinician uses critical consciousness to integrate additional interventions at the neighborhood, institutional, and policy levels [9,11].

Structural competency is gaining traction because this approach asserts that both trainees and clinicians can learn to better "recognize the structures that shape clinical interactions" to help the system develop a standardized language, intervention system, and cultural humility around our patients' ecosystems [12]. Essentially, this model suggests that clinicians (and trainees) should seek out and identify how SDOH factors affect patients, ask meaningful questions around the context, and then explicitly address these SDOH factors in treatment plans. A structural competency model of patient interaction is based on five core competencies that include: (a) recognizing structures that shape clinical interactions; (b) developing an extra-clinical language of structure; (c) rearticulating "cultural" formulations in structural terms; (d) observing and imagining structural interventions; and (e) developing structural humility [12].

Translational research in SDOH in pediatric care

While there has been a considerable push to incorporate SDOH screening questions into routine pediatric practice, over the past decade, translational

research about SDOH considerations in pediatrics has lagged behind its adult or geriatric counterparts. A related effort in pediatrics has focused on exploring how adverse childhood experiences are associated with health outcomes over the lifespan, including pathways to documented adult outcomes and interventions to prevent adversities or mitigate their outcomes in childhood [13]. Researchers have highlighted the interplay of intrafamilial adversity, maltreatment, and trauma with community violence, discrimination, complex trauma, and economic hardship [14]. A recent review of published research about pediatric screening and interventions for SDOH highlights the difficulties in designing and implementing clinical trials to document their value, including the ethical and practical barriers to randomization, measuring an intervention whose implementation is outside of traditional medical care, and measuring which interventions would be most likely to impact a particular health issue [14].

Barriers and opportunities with adolescent and young adult populations

Within clinical encounters, clinicians often wrongly assume that adolescent and young adult populations have lower unmet social needs, in part due to the assumption that youth are “healthy” due to their lower reported use of health services [15]. The developmental stage of late adolescent and young adulthood is often characterized by transition, increased risk taking, and increased emotionality [16]. Such characteristics predispose this population to having lower self-esteem than the general adult population and lower self-efficacy, a crucial element of successful self-management [17]. All of these factors likely exacerbate adolescents’ and young adults’ ability to acknowledge, organize, manage, and advocate for their social needs during a health care encounter. Given the unique developmental and transitional nature of this age group, our study focused on assessing how trainees interact with this high-priority population through the SDOH interventional lens.

OBJECTIVES

The purpose of this qualitative preliminary study is to explore whether and how using underrepresented adolescent SPs in a simulated patient/provider interaction can improve trainees’ ability to competently assess and address social needs of adolescents and young adults. Informed by the tenets of structural competence [13], we sought to understand how NP trainees assessed their own skills and confidence during social needs assessment. Trainees were prompted to ask socially sensitive questions and respond to the elicited information and then asked to evaluate themselves. We then analyzed their self-evaluations.

The experience was designed to encourage trainees to go beyond the clinical encounter

checklist and reconceptualize patient-family unmet social needs through authentic interactions and conversation with local adolescent populations living in under-resourced urban settings. Trainees often say they are most uncomfortable treating youth/adolescents. Developing comfort in screening and treating this population in a pediatric practice is of the utmost importance. Initiating a dialogue between trainees and their pediatric patients within the simulation experience can alter knowledge for all parties involved by creating an authentic platform to further explore how, as future clinicians, these trainees can better address the unmet social needs of adolescent patients and families.

We leveraged an existing NP simulation experience with adolescent SPs to: (a) improve trainees’ understanding of the biopsychosocial and developmental needs of young adults/adolescents and (b) increase their cultural humility and comfort in working with this age of patients, as well as increase their comfort with discussions about confidentiality and psychosocial history skill building. This paper reports on the NPs’ reflections and their depth of understanding of SDOH considerations in the context of the simulation. A companion study, not reported on here, evaluates the impact of the simulation experience on the adolescent SPs, all of whom were high school students from diverse backgrounds in health-career preparation programs.

METHODS

Two separate cohorts of first-year pediatric and family NP trainees ($n = 36$) and SPs from underrepresented communities ($n = 23$) participated in a one-time simulation experience, occurring over a period of 2 years. To foster interpersonal communication experience for trainees, we developed a bidirectional learning experience that utilized advanced-practice nursing trainees and disadvantaged adolescent youth interested in health careers, in a formal simulation setting within the UCSF School of Nursing (SON).

The clinical experience was framed to the trainees as a psychosocial screening, housed within the trainees’ larger practicum requirements. The simulation itself was part of a larger collaboration, aimed at increasing workforce diversity, between UCSF SON, a county health system, and a large urban school district. Demographic information can be found about both the NP trainees and SP actors in [Table 2](#).

SP training

The SPs were all high school juniors or seniors (aged 16–18), recruited through an intensive health-careers exploration program. Overall, 13% of the SP trainees were African American, 65% were Latinx, 9% were Asian, and 4% were Caucasian. Of the 23 SPs, 2 identified as male, 21 identified as female, and no teens identified as transgendered or other.

Table 1 | Frequently used acronyms

CRAFFT	CRAFFT Screening Test validated for substance-related risks and problems in adolescents [27] Acronym: <i>Car, Relax, Alone, Forget, Friends, Trouble</i>
HEADSS	HEADSS Psychosocial Interview For Adolescents [28] Acronym: <i>Home & environment, Education & employment, Activities, Drugs/Depression, Sexuality, Safety</i>
NP	Nurse practitioner
SDOH	Social determinants of health
SP	Standardized patient
SSHADESS	The SSHADESS Screen: A Strength-Based Psychosocial Assessment [29] Acronym: <i>Strengths, School, Home, Activities, Drugs/diet, Emotions, Sexuality, Safety</i>

Seventy-eight percent of the SPs would be the first generation in their family to go to college and 70% spoke a language other than English at home (see Table 2 for more detailed demographic data). Two of the SP actors participated in both years of the simulation. SON faculty participated in recruitment and training of SPs. All hired SPs received two sessions of acting coaching from a local high school drama teacher and worked with trainers during two script-training sessions on a socially complicated case script and received training on how to give feedback to trainees regarding the encounter. We based our methodology on a modified version of the YouthChat training program, developed at the University of Minnesota, that uses youth actors (SPs) in simulations and educators to assist health care trainees in learning effective communication skills with adolescents [18].

To enable more realistic interaction dynamics, the SPs collaborated in script development. For example, in a traditional simulation, the SP portraying an adolescent would be instructed not to answer questions about sexual activity and other confidential issues if the trainee had not explained adolescent confidentiality protections, but the SP would not prompt the trainee to explain confidentiality. However, during this dynamic script training, the adolescents in both cohorts insisted that the natural response from a teen would be to ask the trainee, “Are you going to tell my mother?” After reinforcement from project faculty, we changed the script so that all trainees received a prompt to explain confidentiality if they had neglected to include it in their initial explanation of the visit.

Trainee preparation

Prior to the simulation experience, NP trainees prepared by reviewing literature about common adolescent psychosocial screeners, such as the SSHADESS, HEADSS, and CRAFFT [19] (see Table 1). In Cohort 1, they were not prepped on any specific SDOH screenings or techniques. With Cohort 2, they received didactic videos and readings, and then asked to apply the content to clinical scenarios via the worksheet prior to the experience. The trainees were then allowed to carry the worksheet into the SP clinical encounter as an aid in the simulation. All NP trainees were naïve to the SP scripted sociocultural

context and were not explicitly instructed on how/ if to intervene on social needs. However, prior to entering the room with an SP, trainees were told that the patient-actor had a minor physical complaint and “something private” to discuss. At the end of the 20 min interview, the SP provided feedback to the trainee about how they felt during the interview, noting trainee verbal and nonverbal behaviors, and what the experience was like for them as a patient.

Simulations are widely used in health-profession training programs to teach procedural skills, diagnostic interpretation, and communication skills with patients [20] through practicing specific skills in controlled, lower-stakes settings with structured feedback. Immediately following this formative simulation, 30 min group debriefs with 4–6 trainees were structured to reinforce individual learning, with the Principal Investigator (PI) as facilitator and notetaker.

The appropriate evaluation of the simulation was to analyze trainees’ self-reflections on their own learning [20,21]. Postsimulation, the trainees entered self-reflections into a Qualtrics form. We changed self-reflection questions slightly from Year 1 to Year 2 in terms of semantics but not content, in hopes of prompting more in-depth reflections (see Table 4 for question list). The PI read a script to all trainees which informed them of their right to opt out of the evaluation portion. No trainees opted out. With the exception of the simulation lab technicians, no external participants to the study were present during the SP encounters. SON faculty were present in the observation viewing room. Self-reflection questions asked of trainees semantically varied from Year 1 to Year 2 in its treatment of socioenvironmental screening and intervention, but there was no substantive change in content, results, or group demographics were consistent across years and debrief group prompts were identical in both years.

Analysis

We used a coding and theoretical framework aligned with constructive grounded theory [22], in which the participants’ interpretation of their own experience is key to uncovering themes. However, given the smaller data set, we used thematic analysis [23] to identify emerging themes. Self-reflections and debrief group notes were inductively coded by the lead

Table 2 | Sample demographics

Adolescent standardized patients	
	Total
Total	23
Ages	16–18 years old
Male	3 (13%)
Female	19 (84%)
Other/transgender	0 (0%)
LGBTQIA	2 (9%)
African/African American	3 (13%)
Asian/PI	2 (9%)
Latinx	15 (65%)
European American	1 (4%)
Language other than English in home	16 (70%)
First generation to college	18 (78%)
Nurse practitioner (NP) trainees	
	Total
Total	36
Ages	N/A
Enrolled in pediatric NP program	26 (72%)
Enrolled in family NP program	9 (25%)
Enrolled in adult-gerontology NP program	1 (<1%)
Male	2 (<1%)
Female	34 (94%)
Other/trans	0 (0%)
African/African American	2 (<1%)
Asian/PI	5 (14%)
Latinx	11 (31%)
European American	14 (38%)
Language other than English in home	14 (38%)

author and the second author (and PI) for the NP trainee evaluation. Both researchers reviewed codes to agree on code names and definitions, and codes were merged to eliminate redundancies. Researchers initially developed 94 codes, divided into 13 groups (see Fig. 1 for complete coding tree). In thematic analysis, the researchers familiarize themselves with the data, generate initial codes, and then examine the codes for patterns or themes that cut across the questions asked of participants. Themes are then defined, combined, and collapsed, until the most relevant themes for the research aims are identified, producing a final report [23]. We used Excel and Atlas.ti, Version 8, a qualitative software program, to conduct analyses and manage our data. Video data were collected at the simulation and stored by a protected university-based system. Trainee reflections were administered and stored in a Qualtrics program.

RESULTS

Separate from our theme analyses, trainees expressed gratitude for their preparation for the

Table 3 | Major themes

Major themes
1. “If we don’t ask they often will not share”
2. Considering the root of the problem
3. Balancing patient and clinician priorities
4. Developing interpersonal skills: the value of being genuine
5. Being mindful

experiences, particularly in Year 2, citing the review of confidentiality and formats for psychosocial screening and drug/alcohol screening as especially helpful. Trainees also made constructive suggestions about the experience itself, noting they would have liked to know the length and breadth of the simulation in advance. Below, we identify the primary themes that emerged from our analyses (see Table 3 for summary of themes) of trainee self-reflection.

“If we do not ask they often will not share”

There are two interconnected parts to this theme: (a) NP trainee reluctance to ask sensitive and specific questions about social issues and (b) the need to establish safety and trust in the simulated exam room before the SPs would answer the questions. As one NP trainee noted, “It is difficult to establish appropriate trust to ask such sensitive questions and know how to therapeutically respond in such a limited amount of time.” Other trainees noted their own discomfort with asking sensitive questions and their lack of confidence in how to phrase the explanation of confidentiality. As one trainee remarked,

I did not know how to clarify if he was [sexually] active with males, females, or both. After we started talking about a plan, it felt awkward to ask. But I should have just asked.

One trainee who had worked with teens before noted that “the interaction feels much different in the role of the provider, specifically when gathering information for the social history. I am grateful to have the first experience be in the sim lab because I felt awkward at times.” Several trainees noted the importance of asking more direct questions, despite their discomfort, and more questions “about day to day life” in order to elicit more information about issues such as sexuality and food insecurity. Trainees noted the importance of giving patients the opportunity to “express all of their concerns and ask all of their questions they have regarding their health. If they are not asked, they will often not share...”

Balancing patient and provider priorities

Although trainees on the whole stated they felt prepared for the simulation, they expressed that the number of topics they had to cover in their allotted

Table 4 | Self-reflection prompts

Relevant prompts

- During the simulation, what information about the social background and/or general environment of the adolescent did you elicit during history taking? How did this information inform your interventions or counseling with the teen?
- Describe a lesson you learned from this simulation experience that you found to be the most valuable in improving your clinical practice.
- Describe how this lesson you describe above will impact your ability to provide comprehensive, culturally sensitive care to adolescent patients from disadvantaged backgrounds.
- Rate each of the following statements below regarding the adolescent simulation experience as either strongly agree, agree, uncertain, disagree, or strongly disagree.
 - The teaching methods used in this simulation were helpful and effective.
 - The simulation provided me with learning materials and activities to promote my learning.
 - I enjoyed how my faculty taught the simulation.
 - The teaching materials used motivating and helped me to learn.
 - The way my faculty taught was suitable to the way I learn.
 - I am mastering the content of the simulation.
 - The simulation covered critical content necessary for the mastery.
 - I am developing the skills and obtaining the required knowledge to perform in a clinical setting.
 - My faculty used helpful resources.
 - It is my responsibility to learn what I need to know from this simulation activity
 - I know how to get help when I do not understand the concepts covered in simulation.
 - I know how to use simulation activities to learn critical aspects of these skills.
 - It is the faculty's responsibility to tell me what I need to learn during class time.

time was challenging. These topics included: psychosocial screening questions (HEADSS, SSHADES, or CRAFFT; please see Table 1 for list of acronyms); specific questions about the chief complaint; sexual activity; possible need for contraception and STI testing; as well as maintaining “a balance of connecting with the patient while also keeping the visit focused.” One trainee stated, “I felt as though I went down a rabbit hole by starting with HEADSS,” as so many issues came up; starting with the chief complaint helped keep the visit focused. Another trainee added this focus would help “provide quality care” and “bring to light underlying

issues patients with disadvantage (sic) backgrounds are dealing with at home, school, society.”

Trainees recognized the importance of having an overall “game plan” or strategy for addressing multiple issues in a time-limited encounter, particularly with trying to avoid a patient perception that they were just going down a checklist.

Personally, this reminds me that while there are many boxes to check and questions to be asked, the visit with the patient should be focused around them, what they need, what they desire and not what the provider needs to check off during the visit.

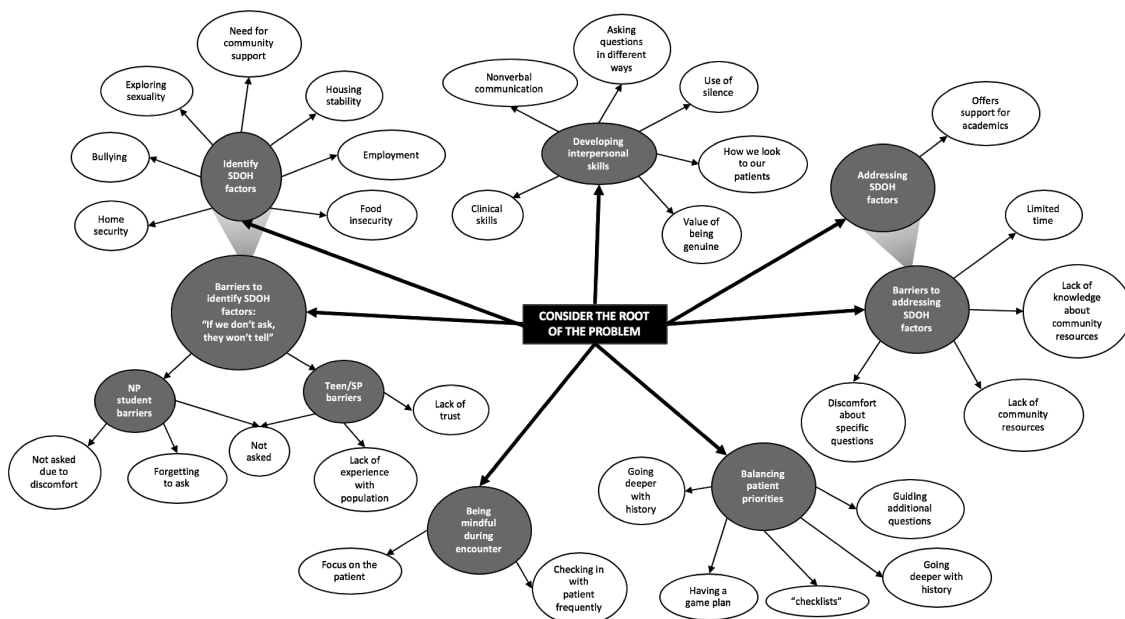


Fig 1 | Coding tree.

Trainees gained awareness that they needed to practice planning the overall flow of their visit while still focusing on patient needs. They also realized they needed to go deeper into their history questions, especially gathering social history, “to look beyond the basic straightforward questions/answers we are often looking for based on what is taught in books.”

Being mindful

Some trainees mentioned the need to “be mindful” of the patient’s needs and well-being and the importance of checking in during difficult moments. While there was little mention of mindfulness skill use during the appointment, trainees seemed highly aware of the need to balance clinical priorities versus patient-centered care, focusing “more on the patient, and not on the specific questions I formulated in my mind.” Many noted that, while it seemed crucial to ask all the “right” questions, it was also important to make a connection with the patient as a critical precursor to eliciting the information.

Developing interpersonal skills: the value of being genuine

In order to elicit a more detailed and personal history, trainees recognized the importance of “focusing on the interpersonal aspect and making the patient feel comfortable,” and “the value of being genuine with the patient without feeling the need to be their friend.” They noted particular interview and other interpersonal skills that could help them “in going deeper” with history questions: “Sometimes the same questions asked in a different way can elicit a different response.” They experienced listening as “a very important tool and that sometimes silence is okay for the patient to gather her thoughts or feelings.” They received specific feedback from the SPs if, for example, they did not leave enough time for the SP to answer questions thoroughly or if they tended to ask mostly “closed-ended” questions.

Trainees also mentioned that the patient’s nonverbal behavior and their own were important to attend to and address. One trainee noted that although “the SP was clearly stressed when I asked about his sexual orientation, and while he offered me an answer, he had hoped (in my feedback session) that I would have inquired more rather than moving on to the next question.” Trainees learned that their use of hands could feel “invasive and intimidating” in a small exam room, and that they lost patient engagement and attention when they spent too much time writing down answers in the encounter. They also received positive feedback, as one trainee who struggled with time management learned that they were “good at presenting myself as warm and someone that patients can confide in.” One trainee summarized the experience:

If I appear nervous and give generic answers, the adolescent will not feel that I am here for her. An adolescent needs to feel more supported and valuable. I also need to show adolescents that I have faith in him or her to make the right decisions for herself and her body.

Considering the root of the problem

This theme is linked to trainees’ growing awareness of the importance of identifying and addressing social determinants of health in understanding the root cause of patient health problems and being able to address effective solutions in partnership with the patient. One trainee noted, in reference to asking about recent family food insecurity,

[Previous food insecurity information] helped to guide further questions asked about how much [the patient] was eating, food/drink choices, and how this could be contributing to headaches. Helped me to recognize that additional resources for food support may be needed before throwing a bunch of recommendations at the [patient].

This trainee went on to note that understanding the family’s economic stress “helped me to better understand why [patient] has been using marijuana to relax a few times a month, and to consider the root of the problem that is contributing to the action.” Another noted,

I will remember that there is often a lot more behind a medical complaint, and to be sensitive to this fact while I’m considering a treatment plan that will be thoughtful and effective.

Related to this theme, one trainee stated, “I should ask more questions on day to day life, so I have a better picture on how to help people from different socio-economic backgrounds.” Others stressed the importance of understanding food insecurity before making recommendations about improving diet and that the simulation “was a reminder of the common adversities that many teens are facing, and how this is crucial to keep in the forefront of your mind with every patient you see.” Many trainees also informally identified important knowledge gaps regarding related community resources in the debriefing session, specifically about how to access and assess local, state, and federal programs.

DISCUSSION

This research builds on robust literature on medical simulations and on emerging literature about developing better clinical practices around addressing SDOH. We used an innovative approach in adapting findings from these bodies of literature to inform future NP training curricula. When

prompted to consider unmet social and health needs during clinical scenarios, trainees in our study exhibited: (a) discomfort in screening for SDOH and in creating treatment plans around unmet social needs and (b) knowledge gaps about navigating system/community resources. These findings suggest that these important areas need to be better addressed during clinician training and are likely key to success of translating interventions targeting SDOH into clinical practice. Although one of our goals was to identify barriers to addressing SDOH, very little data emerged on this topic during the self-reflections. Future work that can elicit data on this question will be important for producing best-practice trainings around SDOH issues.

Through a simulated setting using SPs to authentically represent a young adult/adolescent population, we were able to identify commonalities among trainees as they attempt to incorporate SDOH considerations into clinical assessments and develop plans of care. Trainees reported they found the exercise helpful for learning how to ask sensitive questions in culturally appropriate ways, learning how to juggle several different issues in one visit and for practicing asking how to ask about food insecurity. Trainees asked for additional training in addressing the issues raised in simulation, including issues around sexual orientation and for learning about resources to support families with unmet SDOH needs.

There are a number of barriers to introducing SDOH questions into clinical settings. Previous studies have shown that even experienced clinicians feel ill equipped to address their patients' and families' unmet needs [24]. To start, there has been considerable push back from practitioners regarding how (and if) a single practitioner or system can realistically integrate social needs screening, given the lack of sufficient understanding of its impact on patients, the limited training of clinicians on SDOH, abbreviated encounter time, and a dearth of community resources and referrals [25,26]. Clinicians often express the view that social needs screening lies outside of their scope of practice and requires more resources than a clinician can offer in a clinical encounter. These barriers and hurdles have led to frustration for physicians and patients in translating SDOH considerations into clinical encounters [24]. Additionally, clinicians have raised concerns about how/if screeners can fully address the issues raised, as well as concerns that screening for social needs may spur unintended patient profiling, and consequently contribute to pre-existing health inequities and other related SDOH issues [24].

Next steps from this study should include: (a) developing additional postsimulation clinical experiences to teach trainees how to find resources to address unmet SDOH needs; (b) integrating this adolescent SP model into other non-nursing

simulation experiences; and (c) developing a framework for analyzing the video encounters in order to determine whether the presimulation training should be changed or expanded.

CONCLUSIONS

Our findings suggest that basic simulation experiences focusing on SDOH may create lower-stakes practice clinical situations that prompt trainees to explore ways of asking more thoughtful, empathic questions during clinical encounters. Improving clinicians' abilities to have conversations about unmet social needs and ask patients about how they would prefer to be asked/counseled is likely to add tremendous value to clinical encounters. In addition, by exploring adolescents' social priorities and protective factors, the power paradigm shifts clinicians into learners, thus helping shift to more patient-centered care model. While one experience may not be sufficient to support fluency in eliciting and addressing SDOH, the SPs' perspectives and feedback provide a powerful trainee-adolescent exchange and can highlight areas to scaffold in future trainee-patient encounters. Once areas for improvement were identified by the trainees, faculty were able to better provide support in addressing clinician discomfort regarding patients' sensitive concerns, as well as support for emphasizing and identifying community resources and intervention.

In terms of curricular development and training, structural competency can be interpreted to mean that trainees need to learn to sensitively ask the right questions within a clinical encounter to reveal the "why" of pediatric families' unmet health needs. Our findings and education theory reaffirm the need for patient-clinician conversations to evolve beyond recommended "check box" screens that are embedded into clinical practice and electronic records and move into a more dynamic interaction where health knowledge is coconstructed and treatment plans are negotiated as a patient-family-clinician team.

Limitations and future directions

The present study had several limitations. First, this study was only tested in one graduate nursing program, consisting of only NP trainees predominately from our pediatric track. Because our pediatric NP trainees are already registered nurses with prelicensure or postlicensure experience with children, they may have more comfort in pediatric screening compared to other trainees in medicine, psychology, and social work; the inclusion of trainees from other disciplines may diversify trainee perspectives. Second, while the study highlights screening and referral barriers for incorporating SDOH considerations into treatment and patient interactions, available interventions will vary by locality and clinician awareness of,

and connectedness to, community-based resources. Therefore, addressing this concern will require exploring the degree of connectedness to the community, which was beyond the scope of this pilot, but will be important in future work. Third, while the SP actors have a diverse range of socioeconomic backgrounds, the SP sample heavily identifies as female. This was unintended and a consequence of a convenience sample that recruited participants from two largely female programs (the high school internship and the NP programs). With this skew toward identified female participants, there is a question of the generalizability of the interactions if more of the SPs and trainees were male or if there was a larger number of trans or nonbinary students. Fourth, this study leveraged a diverse community team and community network (i.e., SP recruitment via pre-established relationships with local schools), which may limit dissemination to other clinical training programs with different relationships and affiliates. Finally, by initially framing the simulation as a setting to practice psychosocial screening to the trainees, trainees may have been more likely to explore contributing social factors of the SP's storyline, particularly in the first cohort.

In terms of translational research, the primary limitation is that it is difficult to create treatment plans without resources for referring patients. In real-world clinical settings, it is more likely that clinicians would know the community resources. That said, these results clearly point to a need for more studies to help identify how we can best teach clinical trainees to navigate complex intervention systems from which to develop scalable interventions aimed at addressing SDOH during clinical training and care. Additionally, more qualitative work would illuminate the dynamic nature of social needs and SDOH across various specialties and “places” where adolescents and young adults interact with the health system. Despite its limitations, this study suggests that simulated encounters early in clinical training programs may be an effective way to meaningfully incorporate SDOH considerations into clinical care.

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Compliance with Ethical Standards

Conflicts of Interest: Shawna Sisler, Andrea Wallace, Linda Stephan, Jayme Mejia, and Naomi Schapiro declare that they have no conflicts of interest.

Authors' Contributions: SMS: drafting manuscript, data analysis; NAS: data acquisition, data analysis, intellectual contribution, resource management and principal investigator for grant; LS: data acquisition (nurse practitioners), training, editing manuscript; JM: data acquisition (standardized patients), training, editing manuscript; ASW: supervisory role, substantive contribution to drafting of manuscript and to study design, intellectual contribution, significant mentorship to 1st author.

Ethical Approval: Approved by the UCSF Committee on Human Research. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent: Informed consent was obtained from adult standardized patients and parents of those under 18; assent was obtained from minor standardized patients. NP students were read a general consent script with ability to opt out, evaluation of their reflections was considered exempt. Findings have not been published elsewhere nor is the manuscript being simultaneously submitted elsewhere.

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