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Addressing Social Determinants of Health (SDoH) in Primary Care: A Pilot Study

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Abstract

The significant impact of social determinants of health (SDoH) on the health of Americans is increasingly being recognized. Within primary care, there are gaps in identifying SDoH needs and best practice on intervening in these situations. The aim of this pilot study was to assess how patient SDoH needs are identified and addressed by health care providers who are associated with representative primary care. A survey study design consisting of eight closed questions and two open-ended questions was distributed to health care providers practicing in the Maine Federally Qualified Health Centers. Data were analyzed using descriptive statistics. Results provided support for physicians and mid-level providers with how to identify SDoH needs of their patients. As the biggest barriers to identification were lack of time and support, institutions need to provide physicians with adequate time and resource support to complete this task. Addressing SDoH should be the responsibility of a Social Worker on the care team. One type of provider (i.e., social worker or a staff position that requires public health education) should be dedicated to finding resources, how to access them, and providing this detailed information to the physicians and mid-level providers. Each primary care practice is best positioned to make the decision as to which positions should be responsible for identifying and addressing SDOHs gaps for their patients. Creating a plan within health care organizations for identifying and addressing patient SDoH needs aids in mitigating patients' risks and increases their health outcomes while improving quality of life.

Keywords

Social Determinants of Health, Clinical Screening, Primary Care, Federally Qualified Health Center

1. Introduction

This pilot study assessed how patient SDoH needs are identified and addressed by health care providers who are associated with the Maine Primary Care Association, including ascertaining feedback on benefits and barriers related to these responsibilities. For this article, under federal regulations, a "health care provider" is defined as: a doctor of medicine or osteopathy, podiatrist, dentist, chiropractor, clinical psychologist, optometrist, nurse practitioner, nurse-midwife, or a clinical social worker who is authorized to practice by the State law (Cornell School of Law, 2021).

2. Literature Review

Social determinants of health, by definition, are conditions in environments in which individuals work, play, live, and learn that influences their health, types of health risks, day-to-day function, and quality of life (Social Determinants of Health, 2021). Social determinants of health (SDoH) have gained attention in recent years regarding their significant impact on the health of Americans. Health begins with the environments and conditions under which people live, including socioeconomic status, access to education, social support, cultural differences, and more (Social Determinants of Health, 2021). In the year 2000, 245,000 deaths were attributable to low education, 176,000 were due to racial segregation, 162,000 were due to low social support, 133,000 were due to individual-level poverty, 119,000 to income inequality, and 39,000 due to area-level poverty (Galea et al., 2011). Behavioral causes are involved in nearly half of all deaths in the United States (J. Michael McGinnis, 2013). These striking statistics highlight the impact of social determinants of health on well-being as a whole.

Acknowledging these social determinants of health is becoming increasingly important, and healthcare professionals are striving to identify the factors that are contributing to the health of their patients. One former chief medical officer stated:

"*…we don't have a very consistent, predictable, repeatable, mechanism for expression that somebody has food insecurity needs. Or is a domestic violence victim. Or has a behavioral health challenge that makes it difficult to leave the house. Or that they have transportation challenges. We don't have good ways of representing those things*" (Healthcare IT News, 2019).

Although these social determinants have an integral role on health, the methods available to identify SDoH needs for each patient are inadequate. In 2018, ICD-10-CM codes have become available for physicians to employ a standardized approach to identifying and documenting the SDoH their patients may face. Despite the availability of these codes, hospitals have not widely employed them (American Hospital Association, 2020). Additionally, a study of providers at Community Health Centers over a two-year period found that only 2% of visits included a documented SDoH health screening, indicating that providers in general are not widely employing these documentation tools (Cottrell et al.,

2019).

Finally, once social determinants of health are identified for patients, the evidence on best practice for providing interventions to support patients' health is lacking (Fraze et al., 2016). Barriers to intervention include: 1) lack of financial incentive for SDoH identification; 2) lack of resource allocation towards addressing SDoH needs; and 3) potential patient privacy concerns due to sharing patient information between medical and social service providers (Gottlieb et al., 2014). While studies have demonstrated that social service support interventions related to food, housing, and coordination of care have exhibited positive results, there is also a lack of social service support to meet identified SDoH needs. It has been estimated that it will take nearly two decades to implement SDoH screening and referral processes (Byhoff et al., 2018). However, as we continue to move towards value-based healthcare, there will be more opportunities for patient support in these areas (Stefanacci & Riddle, 2018).

3. Methodology

3.1. Design

A survey study design consisting of eight closed questions and two open-ended questions was distributed to health care providers and other medical staff at Maine Federally Qualified Health Centers (FQHC) (N = 20) with the assistance of the Maine Primary Care Association (MEPCA). MEPCA is a membership organization of Maine's Community Health Centers with a mission to champion and maximize the value of Maine's statewide community health center network for the health and well-being of all Maine people. The Maine FQHCs provide high quality, primary and preventive medical, behavioral health and dental services for one in six (1 in 6) Mainers. There are 20 Community Health Centers and over 70 service locations across the state that serve 210,000 patients each year. The University of New England Institutional Review Board deemed this project to meet the federal standards of an exempt study as it did not meet the criteria for human subjects' research.

The survey was designed by the research team with feedback from the MEPCA research staff and medical director. The fourth draft of the survey was finalized for distribution. The eight closed questions and two open questions were included within a larger survey designed by MEPCA on Provider Burnout and Satisfaction. Data sharing of the demographic and 10 SDoH question responses were mutually agreed upon by the research team, the MEPCA, and University of New England College of Osteopathic Medicine (UNE COM) (**Table 1**).

3.2. Data Collection

The survey, distributed by the Maine Primary Care Association electronically three times between May and August 2021 via Microsoft Forms, contained safeguards to ensure only one response per participant. Responses were collected

Table 1. Survey questions.

Q #	QUESTIONS
	INSTRUCTIONS: Please complete each question below applying the following list of prevalent Social Determinants of Health (SDoH) that are known to affect people's health: a) Access to Housing b) Food Insecurity c) Transportation d) Unemployment e) Access to Health Care Services f) Substance Use Disorder g) Social Support
1.	Are there any other SDoHs that you feel are important to include to this list?
2.	Please rank order the SDoHs that you deal with most with #1 being the top priority for you. a) Access to Housing b) Food Insecurity c) Transportation d) Unemployment e) Access to Health Care Services f) Substance Use Disorder g) Social Support h) Other: (identified in Question 1)
3.	When assessing Social Determinants of Health of your patients, how do you, as a provider, determine which ones to concentrate on? (Check all that apply) a) Most commonly seen in my community b) I know there are community resources to address the SDoH c) I feel the most comfortable asking these questions d) They are present in electronic charting e) I base my decisions on the needs presented by each patient f) I do not assess Social Determinants of Health g) Other:
4.	When assessing Social Determinants of Health of your patients, how do you, as a provider, determine which ones you are not able to focus on? (Check all that apply) a) Least commonly seen in my community b) The community lacks the resources to address the SDoH that my patients need c) I feel uncomfortable asking these questions d) There is not an easy way to chart the information e) I base my decisions on the needs presented by each patient f) Other:
5.	Who should be responsible for IDENTIFYING patient SDoH needs? a) Providers b) Social Workers c) Support Staff - Reception d) Medical Assistant e) Other:
6	Who should be responsible for ADDRESSING patient SDoH needs? a) Providers b) Social Workers c) Support Staff - Reception d) Medical Assistant e) Other:

Continued

7.	After identification of patient Social Determinant of Health needs, how do you, as a provider, utilize this information? (Check all that apply) a) Depends upon the patient need b) Depends upon the amount of time that I have c) Depends on the outside resources that are available d) I connect patients to FQHC staff to determine if outside resources are available e) Refer patients to social workers or case managers f) Other:
8.	What are current challenges in identifying patient SDoH needs? (Check all that apply) a) Lack of time b) Lack of support c) Lack of financial incentive/reimbursement d) Difficulty of documentation e) Availability of community resources f) Availability of funding resources g) Other:
	Short Answer Questions:
9.	What do you want us to know about BENEFITS of identifying patient Social Determinants of Health in your practice?
10.	What do you want us to know about the BARRIERS for identifying patient Social Determinants of Health in your practice?

anonymously. The survey was distributed to healthcare workers at Maine Federally Qualified Health Centers (FQHCs) that included Physicians (MD/DO), Mid-Level Providers (NP/PA), Nurses, Medical Assistants, Counselors, and Social Workers. Individuals working in the field of dentistry including dentists and dental hygienists were excluded from the survey. There were no incentives included for participation.

3.3. Data Analysis

A final aggregate data report of participant demographics and SDoH sections were sent by the MEPCA research team at the close of the survey. Quantitative data were analyzed using descriptive statistics for the demographic data and Microsoft Excel (Microsoft Excel for Mac) and Microsoft Power BI (Microsoft Power BI) for the question responses.

Qualitative data were analyzed through a content analysis process. Comments to each open-ended question were listed and read through at least three times by two researchers who created a list of themes for consideration. An agreed upon definition for each theme was developed to assist with inter-rater reliability as comments were then reviewed and listed under select themes. This process required the researchers to communicate and compare analysis processes to determine the final coding structure. Once completed, comments listed under each theme were reviewed again and those comments that were identified as representative of the theme definition were selected to illustrate the key points within each theme. This iterative process provided clarity for the research team regard-

ing the predominant outcomes from the benefits and barriers comments. Next, key words from comments in each theme were identified and a frequency analysis (Word Cloud) was conducted for Question 9 and 10 (Zygomatic, 2003).

4. Results

Demographics:

A 32% (N = 64) response rate for the survey was obtained. However, nine responses were from dentists and dental hygienists requiring their responses to be excluded from the survey. Thus, the final data analyses performed consisted of survey responses from 55 individuals that included the following health care providers and staff: Licensed Alcohol and Drug Counselors (LADC); Licensed Clinical Professional Counselors (LCPC); Licensed Master Social Workers (LMSW); Licensed Clinical Social Workers (LCSW); Medical Assistants (MA); Physicians (MD/DO); Mid-level providers (NP/PA); and Nurses (RN/PLN).

Of those who responded to the survey 78.2% (N = 43) identified themselves as a full-time employee, 20% (N = 11) identified as being a part-time employee, and 1.8% (N = 1) identified as being per-diem. Responses on health care field resulted in 60% (N = 33) identifying with the field of Primary Care, while 27% (N = 15) work in the field of Mental/Behavioral/Substance Use Disorder. The remaining 13% (N = 7) identified as working in the fields of Infectious Disease, Ophthalmology, Pediatrics, and Geriatrics. Age distributions ranged from 31 to over 65. There was a bimodal age distribution of respondents with 32.7% (N = 18) being between the ages of 31 - 40 and 32.7% (N = 18) being between the ages of 51 - 64. The remaining respondents completed the age demographics with 16.4% (N = 9) in the 41 - 50 age category, 12.7% (N = 7) in the 65 and older category, and 5.5% (N = 3) in the 18 - 30 age category. Regarding gender, 85.5% (N = 47) of respondents identified as female. The racial/ethnic makeup of respondents is consistent with Maine's population (U.S. Census Bureau Quickfacts, 2021) with 94.6% (N = 52) identified as White/Caucasian, 1.8% (N = 1) identified as Black/African American, 1.8% (N = 1) identified as Hispanic/Latino, and 1.8% (N = 1) choosing not to respond. In Maine, the racial/ethnic demographic breakdown is 94.4% White/Caucasian, while 1.7% is Black or African American Alone, and 1.8% is Hispanic or Latino. See **Table 2** for demographic breakdown.

4.1. Quantitative Survey Responses

The SDoH list for this survey included Access to Housing, Food Insecurity, Transportation, Unemployment, Access to Health Care, Substance Use Disorder, and Social Support. Question 1 asked if there other SDoH needs that should be included in the list. There were 35 responses with the prevalent responses being "Racism" and "Awareness of Violence and Trauma". The SDoH needs that the health care providers deal with most (Question 2) were access to housing, followed by transportation, access to health care services, food insecurity, substance use disorder, unemployment, social support, and finally "other", which

Table 2. Demographics.

	Number (N = XX)	Percentage (%)
Employee Work Status:		
Full-Time Employee	43	78.2%
Part-Time Employee	11	20%
Per Diem	1	1.8%
Medical Specialty:		
Primary Care	33	60%
Mental/Behavioral/Substance Use Disorder	15	27.3%
Infectious Disease, Ophthalmology, Pediatrics, and Geriatrics	7	12.7%
Age Distribution:		
18 - 30	3	5.5%
31 - 40	18	32.7%
41 - 50	9	16.4%
51 - 64	18	32.7%
65+	7	12.7%
Gender:		
Female	47	85.5%
Male	7	12.7%
Prefer not to respond	1	1.8%
Race/Ethnicity:		
White/Caucasian	52	94.6%
Black/African American	1	1.8%
Hispanic/Latino	1	1.8%
Prefer not to Respond	1	1.8%

allowed respondents to include their write-in answer from Question 1. To obtain this rank order, points were assigned where eight points were given for each first-place ranking, seven points were given for each second-place ranking, six points were given for each third-place ranking, and so on with one point for each eighth-place ranking.

When assessing patients' SDoH needs, respondents stated that determining which ones to focus on (Question 3) the lead response selected was that their decisions were based on the needs presented by each patient (92.7%; N = 51). The second most popular response was that respondents focus on needs most commonly seen in their community (43.6%; N = 24), with the third most popular

response related to known community resources available to address their patients' needs (27.3%; N = 15). Less popular responses were the comfort of the provider asking about SDoH (20%; N = 11) and SDoH being included in electronic charting system (20%; N = 11). Finally, only two respondents selected "I do not assess SDoH". When assessing SDoH needs of their patients, providers were asked how they determined which ones they were unable to focus on (Question 4). Of the response options in which they could check all that applied, "I base my decisions on the needs presented by each patient" had a majority response rate (78.2%; N = 43); with "The community lacks the resources to address the SDoH that my patients' need" (33%; N = 18); and "There is not an easy way to chart the information" had the third highest selection rate (10.9%; N = 6). The fourth most common response was SDoH needs that are "Least commonly seen in their community" (9%; N = 5). Finally, only one respondent stated, "I feel uncomfortable asking these questions".

When asked who on the healthcare team should be responsible for identifying patients' SDoH needs (Question 5) The majority of respondents 41% (N = 22) chose "other" as their answer to this question. As write-in responses were accepted, the researchers determined that "other" included all members of the healthcare team should be involved in the process. The second highest response 23% (N = 12) was providers (physicians and mid-levels). Social workers and medical assistants were equally ranked, 15% (N = 8) respectively, as the staff responsible for identifying patients SDoH needs. Finally, Support staff were selected by the fewest respondents (6%; N = 3) (Figure 1).

In terms of who should be addressing patients' SDoH needs (Question 6), the majority of respondents selected "Other" (44%; N = 23). The second most common response was social workers (42%; N = 22). Again, with write in responses included, investigators were able to determine that responses indicated that all members of the care team should be involved (Figure 2).

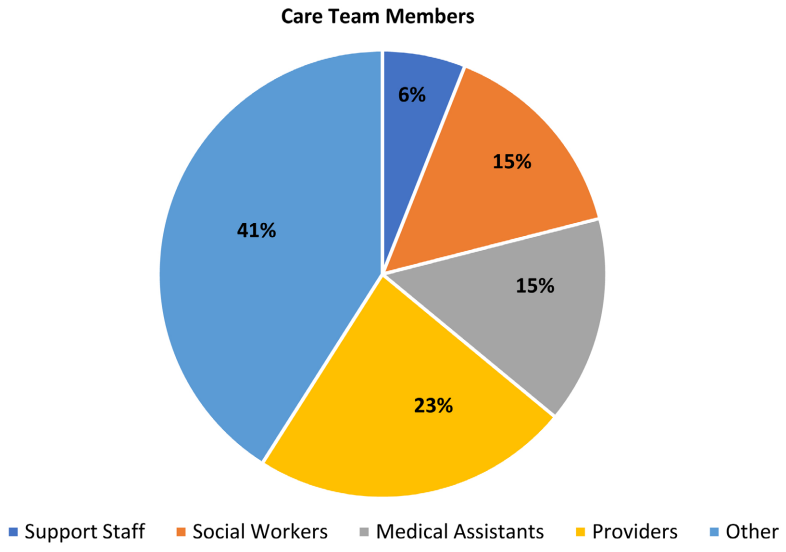

Figure 1. Responsible for identifying patient SDoH needs.

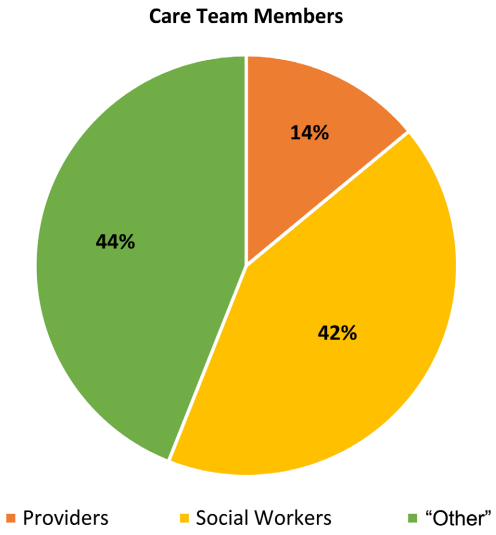

Figure 2. Responsible for addressing patient SDoH needs.

In Question 7, after identifying patients' SDoH needs, survey respondents answered how they utilized this information. Provider responses revealed that 85.5% (N = 47) selected that it depended upon the patient needs. Equally ranked were the responses for "Depends on the outside resources" and "Refer patients to the social worker" at 45.5% (N = 25) respectively. Closely aligned was the selected response "I connect patients to FQHC staff to determine if outside resources are available" (43.6%; N = 24).

According to survey respondents, current challenges in identifying patient SDoH needs (Question 8) included "availability of community resources" (78.1%; N = 43), followed by "lack of time" (70.1%; N = 39), "lack of support" (49.1%; N = 27), and "availability of funding resources" (47.3%; N = 26). "Lack of financial incentives or reimbursement" and "difficulty of documentation" were the least selected responses in this question.

4.2. Qualitative Survey Responses

The final two survey questions ascertained respondents' comments on the benefits (Question 9) and barriers (Question 10) of identifying patients SDoH needs. The qualitative data analysis included reviewing 28 comments for benefits and 26 comments for barriers. Comments on the benefits of identifying patient SDoH needs reached saturation; patients would have better health outcomes and better overall health if their SDoH needs could be identified (and addressed). Key quotes for "benefits" included: 1) "*the benefits of identifying patient SDoH should be one of the most important tasks as a* [*FQHC*], *as our patient base is mainly formed of individuals who have barriers to health care access. Identifying these SDoH can impact and improve a patient's life in an infinite* [*number*] *of ways*"; and 2) "[*helps providers*] *to understand root causes and provide patient centered care* [*which reduces stigma by helping health care workers to understand*] *the ways that society contributes to disease and struggle-it's not just indi-*

vidual issues." These quotes highlight the importance of identification of SDoH needs among patient populations.

In the word cloud Figure 3 below, key word groups by matched frequency include: improve-health; individualized-outcomes; understand-identifying; met-issues; and important-supported-centered. Although no outcomes can be drawn from these word groupings, they are words one would want to associate with benefits of identifying SDoH needs for patients.

Comments on barriers supported two important points first revealed in the quantitative outcomes. There is neither enough "time" nor "resources" to properly identify patients' SDoH needs and address them. A representative comment raises another key issue; there is "*no training on how to identify barriers*, *no access to information on available programs and/or resources for individuals*, [*and*] *no instructions on what to do once barriers have been identified*". This comment highlights the need for a standardized approach to preparing health care providers in how to identify their patients' SDoH needs and how best to access and then connect their patients to these resources. In the word cloud Figure 4 below, again key word groups matched by frequency and associated with barriers include: time; patient-barriers; refer-resources; and providers-address. Time had the highest frequency and stood alone as a key barrier for providers in assuring their patients SDoH needs can be addressed.

Figure 3. Benefits to identification of SDoH needs.

Figure 4. Barriers to identification of patients SDoH needs.

5. Discussion

This aim of this pilot study was to assess how patients' SDoH needs are identified and addressed by health care providers who are associated with the Maine Primary Care Association; including ascertaining feedback on benefits and barriers related to these responsibilities. Each survey question aided in elucidating the prevalent issues for Maine's federally qualified health center providers in identifying and addressing SDoH patients' needs. Survey respondents identified housing, transportation, and access to health care services as the top three social determinants of health for their patients. There were seven SDoH needs listed in the survey with two others deemed important by provider respondents included: 1) racism and 2) violence and trauma. According to the Maine Department of Health and Human Services SDoH Report, homelessness is increasing within the state of Maine (The Way Health Should Be, 2021). Additionally, lack of safe housing is a concern. This includes a home with exposure to potential toxins such as lead paint or radon, and a home without amenities such as heat and running water. Case in point, 87% of children diagnosed with lead poisoning in the state of Maine live in a home built before 1950 (The Way Health Should Be, 2021). This provides a direct link between lack of safe housing and negative health outcomes where lead poisoning can lead to cognitive and behavioral changes in children and kidney damage and hypertension in adults. Regarding the issue of transportation, the Maine Department of Health and Human Services identifies transportation as a need that can contribute to social isolation, food insecurity, inability to find safe housing as a vehicle is required to access many housing options, and it can contribute to lower income as the ability to find a job can be limited (The Way Health Should Be, 2021). Finally, access to healthcare services is an important determinant of health and wellbeing with many Mainers limited in their ability to access care due to lack of insurance, cost of care, education about the need for health care, and lack of transportation or technology to receive care.

The responses to the survey conveyed that the FQHC health care providers who responded to this survey care about their patients and their patient's health outcomes. The provider responses also conveyed that addressing SDoH will help to improve patient outcomes and improve quality of life. Additionally, most survey respondents indicated that they choose to focus on their patients' SDoH needs. However, survey respondents indicated that they may choose not to focus on their patients SDoH needs when there are no known community resources available to meet these needs or when there is no easy way to chart and access the resources.

While the majority of respondents believed that everyone on the care team should be responsible for identification of SDoH, there is a concern that this shared responsibility could ultimately lead to this task slipping through the cracks. It is for this reason that the authors of this study recommend that physicians and mid-level providers be tasked with identification of SDoH needs of

their patients. Additionally, as the biggest barriers to identification were lack of time and support, it is recommended that institutions provide physicians with adequate time and resource support to complete this task.

The majority of respondents found that addressing SDoH should be the responsibility of a Social Worker on the care team. Once again, it is recommended that one type of provider (i.e. social worker or a staff position that requires public health education) within the care team should be dedicated to finding resources, how to access them, and providing this detailed information to the physicians and mid-level providers. Each FQHC can make the decision as to which position is responsible for ascertaining this information for the health center.

One barrier for addressing patients' SDoH needs is a lack of community resources. The question may well be, is there truly a lack of community resources or is it a lack of knowledge about available resources within the community? Such a question is complicated as the answer could be yes to both issues. However, if the answer refers to there being a lack of knowledge, there are search engines that can assist, one example is "Aunt Bertha" (Aunt Bertha, 2022). Aunt Bertha provides a free search tool, findhelp.org to locate available resources linked to an individual's zip code location (The Social Care Network, 2022). These resources include help paying bills and other forms of financial assistance, food assistance, medical care, among other programs that are offered through reduced-cost or are free within the patient's area. What holds true, is that each FQHC would need a staff position designated to locating, tracking, and distributing these resources within the health center. Regardless of the outcomes concerning the responsibility for identifying or addressing SDoH for patients, a health center could provide improved patient-centered care if there was a system for all staff to be aware of the SDoH resources within the health centers geographic area.

6. Conclusion

For healthcare organizations that recognize their patients have SDoH needs and realize they do not have a sound system in place for identifying and addressing these needs, it is recommended that they engage physicians and mid-level providers with identifying patients' SDoH needs and appoint social workers with addressing these needs. By providing clear assignments to the members of the care team regarding their responsibility in either identifying or addressing SDoH needs, patients' risks can be mitigated and health outcomes, including quality of life, can be improved. To reach these goals, health care organizations need to support their health care providers by providing adequate time and support to identify and addressing patients' SDoH needs.

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Authorship Confirmation Statement

Savannah Dimick, OMS-II served as the principal investigator of the project. Savannah Dimick, Dr. Stefanacci, and Dr. Gugliucci designed the study. Savannah Dimick performed the quantitative analysis and assisted Dr. Gugliucci with the qualitative analysis. All authors reviewed the results and contributed to the interpretation of said results. Savannah Dimick drafted the article, and all authors edited and conducted a final review of the article before submission.

Conflicts of Interest

There are no competing financial interests to disclose.

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