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The Essential Elements of Adolescent-friendly Care in School-based Health Centers: A Mixed Methods Study of the Perspectives of Nurse Practitioners and Adolescents

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ABSTRACT

Purpose: In this study we identified the essential elements of adolescent-friendly care in school-based health centers (SBHCs) from the perspectives of the nurse practitioners (NPs) providing care to adolescents and the adolescents, as the consumers of these services.
Design and methods: Complex adaptive systems provided the philosophical and theoretical foundation for this study. An explanatory sequential mixed methods study was conducted. A Delphi technique (strand one) was conducted with an expert panel of NPs ($N = 21$) to identify the essential elements of adolescent-friendly care in SBHCs. The second strand, a focus group study with adolescents ($N = 30$), elaborated on the Delphi results. Data from the two strands were then mixed.
Results: This study generated expert opinion regarding the essential elements of adolescent-friendly health care in SBHCs. After four Delphi rounds, consensus was reached on 98-items (49% of the original 200; consensus level of 0.75). The results clustered into 6 essential elements: Confidentiality/Privacy ($n = 8$; 8.2%), Accessibility, ($n = 15$; 15.3%), Clinician/Staff ($n = 51$; 52%), SBHC Clinical Services ($n = 12$; 12.2%), SBHC Environment ($n = 4$; 4.1%), and Relationship between the School and SBHC ($n = 8$; 8.2%). The adolescent focus groups confirmed the essential elements identified in the Delphi and added two overarching themes: Comfortable and Trusted Relationship.
Conclusions: These findings contribute to a greater understanding of essential characteristics needed in adolescent friendly care.
Practice implications: SBHCs, as an important community resource for addressing the health care needs of adolescents, should incorporate these characteristics.

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Tailoring clinical services to better meet the needs of the patient population being served is an important aspect of health care delivery. Adolescents in the United States are a healthy population with most of their morbidity and mortality resulting from injuries and risk-taking behaviors (Miniño, 2010). Wellness visits, when they are specific to adolescents' health care needs, are an effective mechanism for screening, anticipatory guidance, treatment, and referral however, most adolescents in the United States do not receive an annual wellness visit (Irwin, Adams, Park, & Newacheck, 2009; Tsai, Zhou, Wortley, Shefer, & Stokley, 2014).

Background and significance

The World Health Organization (2012) has identified key characteristics of health care services necessary to scale-up services provided to adolescents globally. Health care services that are accessible, acceptable, equitable, appropriate, and effective are characterized as adolescent-friendly (McIntyre, 2002; World Health Organization, 2009, 2012). School-based health centers (SBHCs) are designed to be an adolescent-friendly community resource that provide comprehensive health and mental care services at or near school and eliminate many of the barriers adolescents encounter seeking health and mental health services (Daley & Polifroni, 2017; Lawrence, Gootman, & Sim, 2009; Lofink et al., 2013; Strozer, Juszczak, & Ammerman, 2010). These services are commonly

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provided by a Nurse Practitioner (NP) in collaboration with a registered nurse, office assistant, physician, social worker, and sometimes a dental hygienist, substance abuse counselor, dietician, or health educator (Love et al., 2016). Visits to the SBHC are confidential and separate from services provided by the school nurse. SBHC services are usually available by choice to all teens attending the school and who have parental consent (Lofink et al., 2013).

It has been well documented that SBHCs are adolescent-friendly community health resources featuring wellness care (Daley, 2016; Daley & Polifroni, 2017; Lawrence et al., 2009). However, research describing the perspectives of NPs providing care to teens in SBHCs and adolescents, as consumers of these health care services, comprises an important gap in the current research literature. The purpose of this mixed methods study was to identify the essential elements of adolescent-friendly care from these two important perspectives through the following research questions:

1. What does an expert panel of NPs identify as the essential elements of providing adolescent-friendly health care services to teens in SBHCs?
2. What is the adolescent perspective on the essential elements of adolescent-friendly health care services specific to SBHCs?
3. How do the perspectives of NPs and adolescents intersect regarding the essential elements of adolescent-friendly care in SBHCs?

Philosophical and theoretical framework

There is a growing body of research literature in which complexity science and complex adaptive systems theory are applied to a diverse variety of clinical systems in an effort to consider systems as "living organisms" rather than machines (Begun, Zimmerman, & Dooley, 2003; Tan, Wen, & Awaad, 2005). Rooted in mathematics and the sciences (physics, biology), complexity science has been used to understand interactive agents (components) that "adapt or learn as they interact" (Holland, 2006, p. 1). More recently, complex adaptive systems theory has been applied to a variety of other disciplines including nursing, medicine, and health care systems to consider problems and phenomena with a more holistic and comprehensive lens.

Complex adaptive systems contain multiple dynamic components poised to respond to the ever-changing needs of those accessing the health care system (Lindberg, Nash, & Lindberg, 2008; Uhl-Bien & Arena, 2017). The essential inter-related elements of diversity, self-organization, embeddedness, distributed control, emergence, and coexistence between order and disorder allow a complex adaptive system to respond to the potential and ever-changing needs of patients accessing the health care system (Cilliers, 2000; Lindberg et al., 2008; Uhl-Bien & Arena, 2017). The components of complex adaptive systems are commonly depicted as a web, reflecting the essential interconnectedness of the elements and the flexibility that the system must possess to survive. Examples of complex adaptive systems include such settings as a high school, hospital emergency department, or school-based health center. In this study, complex adaptive systems theory guides our understanding of the dynamic interplay among the unique health care needs of adolescents, the SBHC services available to adolescents, and whether current SBHC services eliminate gaps in health care services for this population (Cilliers, 2000; Lindberg et al., 2008; Uhl-Bien & Arena, 2017; Wilson & Holt, 2001).

Design and methods

An explanatory sequential mixed methods design (Fig. 1) was conducted to capture the perspectives of NPs providing care to adolescents in SBHCs and the adolescents receiving care in the SBHC (Creswell & Plano-Clark, 2011). In this design, the qualitative strand followed the quantitative strand and explains the results of the first strand. The study was approved by the University of Connecticut Institutional Review Board (IRB).

Quantitative strand: Delphi technique

A Delphi technique was conducted in the first phase of the research to establish expert consensus from a panel of NPs on the essential elements of adolescent-friendly care in SBHCs (Keeney, Hasson, & McKenna, 2011). Panelists in Round 1 were asked to respond to the question: "What are the essential elements of providing adolescent-friendly care in school-based health centers? Please provide a minimum of 5." In Rounds 2 and 3 panelists were asked for their level of agreement with each of the elements (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The level of statistical agreement was determined through statistical analysis. Prior to data collection, a 0.75 minimum level of agreement was chosen by the researchers because this level indicated the panelist either agreed or strongly agreed with each element. Once an element met the minimum level of agreement in any round it was removed from consideration in the subsequent rounds. In rounds 3 and 4, panelists were asked to consider the remaining elements in terms of the group response and to make changes if they desired.

NPs from the Northeastern Region of the United States were recruited through professional organizations and personal contacts. Inclusion criteria for participation included: national NP certification, 3+ years providing care to adolescents in a SBHC, self-reported expert status (e.g. years of experience, peer-reviewed publication, award, or presentation) and willingness to participate in all rounds of the Delphi technique (Hallowell & Gambatese, 2010; Skulmoski, Hartman, & Krahn, 2007).

Qualitative strand: focus group study

The second strand followed the first, and through this qualitative strand, we aimed to understand the first strand findings through a multiple-category focus group study with adolescents (Krueger & Casey, 2008). A purposive sampling strategy was used to recruit adolescents to one of six focus groups. Inclusion criteria for the focus groups included adolescents who were 13–19 years old, English speakers, and who had at least one visit to the SBHC. Six focus groups were planned with groups randomly assigned according to age and gender; males (13–14, 15–17 and 18–19 years old) and females with the same age groupings. The high schools were in suburban and urban areas in five different counties in the Northeastern state. Four of the SBHC were operated by the same community agency.

Focus group questions were generated from the results of the Delphi technique. Each focus group was audio-recorded after receiving assent from the participants. Data were transcribed verbatim, entered into Atlas.ti7, and analyzed using content analysis (Krippendorff, 2013).

Mixing of quantitative and qualitative data

In the third phase, data from each of the previous phases were compared and contrasted through a connected analysis (Creswell & Plano-Clark, 2011). A thematic content analysis was conducted comparing each category of the Delphi technique results with the themes that emerged from the focus group study (Krippendorff, 2013). The focus group data were also used to understand or ground the elements of adolescent-friendly care generated from the expert panel of NPs.

Results

Quantitative strand: Delphi technique

Twenty-one NPs responded to the initial invitation and were sent Round 1 study materials via email. Demographic characteristics of the

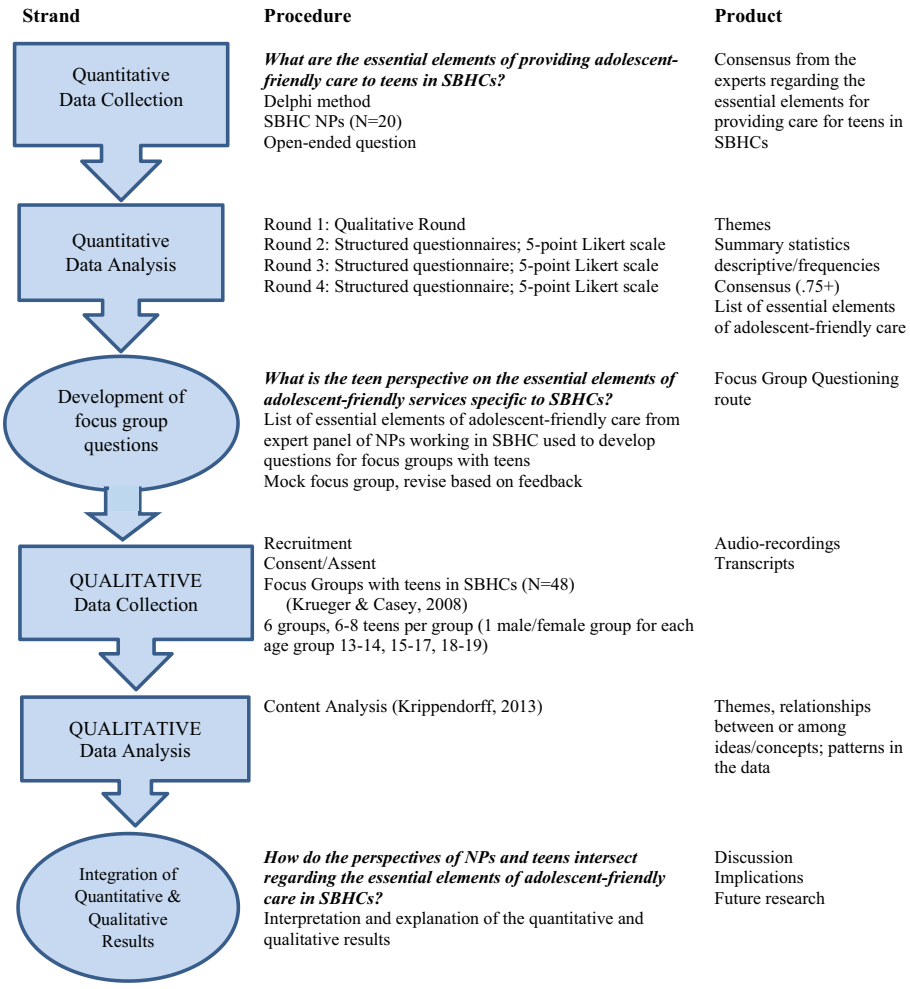

Fig. 1. The essential elements of adolescent-friendly care in SBHCs mixed methods study diagram.

study participants are described in Table 1. Four rounds were conducted with maintenance of panelists of 95–100% per round. Response rates for each of the four rounds are displayed in Table 2.

Table 1
Demographic characteristics of NPs and adolescents.

Group	Characteristic	N	(%)
NPs	Gender		
	Female	21	100
	Race/ethnicity		
	White	20	95.2
	Other	1	4.8
	Certification		
	Pediatric NP	11	52.4
	Family NP	8	38.1
	Other	2	9.5
Adolescents	Gender		
	Female	13	43.3
	Male	17	56.7
	Age Group		
	13–14	9	30.0
	15–17	7	23.3
	18–19	14	46.7
	Ethnicity		
	Hispanic or Latino	16	36.7
	Not Hispanic or Latino	12	40.0
	Unknown	2	6.7
	Race		
	Black/African American	7	23.3
	White	4	13.3
	Hispanic or Latino	10	33.3
	2 or more races/ethnicities	9	30.0

Twenty NPs returned the Round 1 questionnaire and identified 200 unique elements. Those elements that were identified more than once were condensed into a single element. The elements were sorted into six themes: Confidentiality/Privacy, Accessibility, Clinician/Staff, SBHC Clinical Services, SBHC Environment, and Relationship Between School & SBHC.

The researchers decided to proceed with a fourth round because 23 of the elements were close to reaching consensus at the 0.737 level. A fourth round is indicated when you have a highly engaged and specialized group (Keeney et al., 2011). Like the previous rounds, panelists were asked to consider their response within the context of the group response. The elements that had previously reached consensus were removed from the questionnaire and listed at the end to make the remaining elements easier to read.

Overall 98 of the original 200 elements achieved the consensus level of 0.75 or greater. All six categories had elements that reached consensus: Confidentiality/Privacy $n = 8$ (8.2% of 98 essential elements), Accessibility $n = 15$ (15.3%), Clinician/Staff $n = 51$ (52%), SBHC Clinical

Table 2
Delphi technique response by NPs.

Delphi round	*N* start of round	Response (*n*, %)	Items reaching consensus ≥0.75 level ($N = 200$)
1	21	20, 95%	–
2	20	20, 100%	40
3	20	20, 100%	39
4	20	19, 95%	19
			Total: 98 (49%)

Services $n = 12$ (12.2%), SBHC Environment n = 4 (4.1%), and Relationship Between the School & SBHC $n = 8$ (8.2%). Examples of elements from each theme are provided in Table 3.

Qualitative strand: focus groups

Thirty adolescents participated in the six focus groups, with 3–8 individuals per group. The groups were held at six different high schools, one group per school, in five different counties in Connecticut. Demographic characteristics of the participants are provided in Table 1. Fifty-seven percent of the sample was male and the sample had a mean age of 16.4 years (16.2 years females, 16.5 years males). All grades, 9–12, were represented; 55% of participants were in the 12th grade. The sample was ethnically and racially diverse and 30% of the teens described themselves as being of multiple races/ethnicities.

The focus group discussion related to the six essential elements of adolescent-friendly care identified by the expert panel in the first strand and began with an interactive exercise. Participants were provided with five sticker dots that they were instructed to distribute based on importance or value to them, as they saw fit, on posters of the six essential elements after a brief explanation of each element. For example, if the teen felt confidentiality/privacy was most important they could place all 5 sticker dots on that poster or if they thought 5 elements were equally important, one sticker dot could be placed on five different posters. At the end of the exercise, the dots were counted and used to guide the discussion of the six essential elements. Confidentiality & Privacy was identified as most important (32%), followed by Accessibility (18.7%), Clinicians & Staff (14%), Types of Services Offered & Provided at the SBHC (14%), SBHC Environment (13.3%) and Relationship Between School & SBHC (8%).

Table 3
Essential elements for adolescent-friendly care in SBHCs Delphi technique results.

Essential element themes	Examples of statements reaching consensus level ≥ 0.75
Confidentiality/Privacy ($N = 8$; 8.2%)	
What happens in the SBHC, stays in the SBHC	Confidentiality
	Understanding of state laws, politics, and regulations regarding adolescents' rights
A private setting	Privacy of patient and provider so confidentiality is maintained and students feel safe to share
Accessibility ($N = 15$; 15.3%)	
Inclusive environment	Perception that services available to ALL teens, not just selected groups
Flexibility	Appointment times and walk-in times have to be flexible to work around both school's ever-changing schedules and teen's typical habits (missing appointments, frequent rescheduling, dropping in during lunch or study hall)
Services available when needed	Same day appointments
	Ability of the NP to see adolescent when they present for an issue, regardless of insurance status, or insurance rules such as a PCP referral
Clinician/Staff ($N = 51$; 1, 52%)	
Showing respect	Provider is friendly and respectful to the students
	Non-judgmental
Competence	Awareness of adolescent development
	Clinical knowledge/skills
Working together	Collaborating with teens in decision-making (mutual goals)
	Active listening
SBHC Clinical Services ($N = 12$; 12.2%)	
Comprehensive care	Full range of services available: preventative care, immunizations, PE/sports PE, acute visits including screening/testing for STDs, pregnancy, behavioral health, dental, gynecology on-site
Easy access to services	Availability of point of care testing
Continuity	Consistency of staffing: Not having floating or rotating providers to enhance trust between patient and provider
Mental health	Mental health screenings, referrals provided onsite through the SBHC
Reproductive health	Ability to provide comprehensive care including reproductive health/contraception
SBHC Environment ($N = 4$; 4.1%)	
Welcoming to all teens	An environment that feels safe
	Welcoming to the LGBT community
	Friendly
Relationship between the School & SBHC ($N = 8$, 8.2%)	
Working collaboratively	Good working relationship with the school nurse
	Coordination with school personnel (teachers, guidance counselors, nurse, principals, coaches)

Confidentiality & privacy

Two themes emerged from the discussion prompt "What does confidentiality and privacy mean to you?"

What happens in the SBHC, stays in the SBHC

The teens focused on the importance of the confidential relationship they had with the SBHC clinicians and staff members. The teens described the SBHC as a place that they could receive confidential care because their personal information (e.g. sexual history, test results) would be kept secret or protected/restricted from others. An adolescent remarked that "whatever happens in Vegas, stays in Vegas—whatever happens there, stays there" (female 18–19). The confidential relationship facilitated open communication because "they [clinicians and staff] won't tell" (female 13–14) and the teens were aware of the limitations of this confidential relationship and under what circumstances information shared could not remain confidential (i.e. abuse or intent to harm self or others). Teens identified mental health counseling, pregnancy concerns, sexually transmitted disease (STD) and HIV testing as specific examples of services that needed to be kept confidential and as a result, teens sought out these services at their SBHC.

A private setting. The teens also valued that the SBHC was a private setting and the staff made every effort to protect their privacy. "If they want to tell you something personal, they pull you aside, instead of like you talking out-loud" (female 13–14). Specific examples included pulling the teens aside to ask questions, such as the reason for the appointment, and shutting exam room doors during their appointment. Teens also discussed that thin walls and offices that were too small may compromise privacy. In one SBHC, the dental office was so small that the adolescents' feet were visible from the hallway in the SBHC. "Say your friend is in there and they see your shoes, they automatically know who is in there" (male 18–19). However, none of the participants expressed reluctance to use the SBHC because of privacy concerns.

Accessibility

Four themes resulted from the focus group question: "What makes the SBHC easy for you to use?"

Positive energy. Adolescents remarked on the "positive energy" (male 13–14) they encountered in the SBHC that facilitated their interactions with the SBHC clinicians and staff. "Friendly and chill…always glad to help you" (male 13–14). The staff was described as willing to help with any and all of their concerns.

Location. The availability of health and mental health services within the high school was viewed as an important aspect of accessibility by male and female adolescents and facilitated the use of services. "I like how it's [the SBHC] already in my school. I'm in school every day…it's just right there for me to use" (male 18–19). Many described how a lack of transportation hampered their ability to receive care if the SBHC was not available. In addition, for many of the teens, their parent worked and

"they don't have time to bring you, you can just come here and get it done" (female 13–14).

Flexibility. The teens liked that they were active participants in their care and were provided choices related to the care they received. NPs were viewed by the teens as being incredibly flexible in their approach to patients. "Flexible, if you don't want to do something, she will offer you something else." "She's [NP] not like 1, 2, 3. She's a, b, c, d and e" (male 13–14). The flexibility exhibited by the SBHC staff included making appropriate follow-up plans for teens to continue care during the summer.

Services are available when we need them. Across the groups the teens commented on how the SBHC allowed them to receive care "fast," (female 13–14) without "lines" (male 13–14, 15–17) and for free which contrasted with the experiences they had had within the community, especially for those teens without insurance. Services were provided to adolescents at convenient times that did not interfere with their school responsibilities. Teens were grateful for the opportunity to have a visit if they were sick or injured and then either return to class or be sent home, depending on their condition. Urgent needs also included "physicals for sports that week," (female & male 13–14) new student physical examinations, STD screening, and acute mental health needs. Services were also available to them in many situations over the summer break and after hours through the sponsoring agency. School policies, however, required teens to have a pass to go to the SBHC from class, which sometimes was viewed by adolescents as hindering their access.

Clinicians & staff

Focus group participants were asked "Which staff members were most helpful to you? How were they helpful?" The health care providers and staff were discussed collectively and often without delineation of roles. Four themes emerged from the focus group discussions. Overall, the SBHC clinicians and staff were described as "always ready to help, no matter what they are always open to help you to the fullest and not take shortcuts" (male 13–14).

Makes me feel comfortable. The clinicians and staff were described as "cheerful" (male 15–17) and "outgoing" (female 15–17). Teens remarked on how the SBHC staff understood the perspective of an adolescent seeking health or mental health care and went out of their way to put them at ease. "She treats you like she is in your shoes, at the moment" (male 13–14). As a result, they felt "like a human being" (male 18–19), respected, listened to, and "like an adult" (male 13–14).

Working together. Teens described the care they received as individualized and responsive to the specific needs of an adolescent. The NP was described as "always helpful in rescheduling my appointments and making sure that I am up-to-date on certain things" (male 15–17). Health education was described as an important aspect of care. "They give you a lot of information and knowledge" (female 18–19) specific to their health care needs. One female adolescent (18–19) described an ongoing conversation about contraception she had had with the NP.

> I was sexually active with my boyfriend, at one point we were having sex without condoms …but I realized he was trying to get me pregnant. So I went to the school-based health center and I was like [NP name] pop that shot [Depo-Provera]. And then right there and then she got it ready…because they basically know my whole life story. Like that is who I go to talk to. So you know she was telling me about birth control because I was telling her about my boyfriend…she has been drilling it [need for contraception] in my head constantly. Every time I walked in there, she will be like, 'Have you thought about birth control?' I used to tell her 'no'. So when I went in [for the shot], she was happy. I call her Mom number 2. That is my health mommy.

Teens described that the care they received made them want to return. The SBHC staff was viewed as working as a team so if urgent needs arose on a day that one provider was not there, another could successfully help the teen.

Reliable. Adolescents remarked on the reliability of the SBHC staff. "She [NP] don't forget anything. If she tells you, 'I'm going to give you the results the next day'…she makes sure it is done" (male 15–17). The NPs were also viewed as being "very persistent" (male 13–14) in following up with the adolescent's concerns, making sure they were feeling better, and that they could obtain prescriptions from the pharmacy or appointments for referrals to outside agencies.

Knows me. Adolescents felt that the SBHC clinicians knew their patients and remembered their unique needs and issues. "She wouldn't just worry about you that one time and forget. She will remember it from last year…and be more helpful" (male 13–14). This relationship grew from the consistent relationship between the providers and the adolescents, which contrasted with health care experiences in which they saw a different provider for every visit.

> It feels good walking into this place and seeing that same person every time because when I used to go to my doctor, there would be a different lady at the desk every time and it's like—gosh, I have to tell you my whole life story. And here it's just like, 'Oh hey [name] I'm just going to bring up your information. Oh, what's wrong? Why do you need to be here?' It's better here.
>
> [female 15–17]

SBHC environment

Participants were asked to think about the SBHC as a place and describe what they liked about it. This essential element was described by teens in terms of the physical space and the feeling they experienced when they came to the SBHC.

Comfortable but tiny. The teens described the SBHC as "comfortable" (male 15–17, 18–19) and "attractive" (female 18–19). Many teens remarked on how "tiny" (male 15–17, 18–19) the clinic space was, especially the male adolescents. "[You] need to take your book bag off before you enter the door" (male 15–17). This did not impact their willingness to engage in the SBHC services. The teens suggested enlarging the SBHC space and increasing the number of clinicians so that it was more accessible. Appropriate signage for the SBHC was also discussed because they felt it may be hard for teens to locate it within the school.

The aesthetics were described by teens as cleanliness and display of health-related posters. Cleanliness of the SBHC was emphasized as an important aspect of their comfort. The teens explained that the staff always cleaned the examination table thoroughly and changed the paper between patients and in front of the teens. "When you leave…she will clean it [exam table] and sanitize the whole area down herself" (female 18–19). The teens enjoyed the health education materials provided in the waiting areas and these materials "made them think" (female 18–19). However, the teens remarked that the materials, especially the posters were not changed often. Some also preferred student artwork to the health education focused posters. "I personally do not want to…see a picture of a guy with corroded arteries and drinking and doing other drugs. I don't want to see that. I want to see something calming" (male 13–14) and stated that the staff "already said it [health information] enough" (male 18–19).

Good vibes. Not only was the physical space comfortable but also the atmosphere in the SBHC. They described in detail the "good vibes" (female 15–17, 18–19) they felt as they entered and received care in the SBHC. "I

just feel like, oh, I'm home" (female 13–14). The SBHC made them feel safe and relaxed. One adolescent described, that unlike her experiences in other health care offices, she felt "comfortable walking in…like my heart is not beating [fast]" (female 15–17) instead the SBHC was a place that made her feel she could get the care she needed. The demeanor of the staff made the space welcoming and accepting of them.

SBHC clinical services

Participants were asked to look at a list of SBHC services and to choose three that they felt were most important to them. A teen commented, as he looked at the list, "A lot of these services are really good for me. I appreciate the SBHC" (male 13–14). The list of available services was used to guide the focus group discussion. The teens volunteered to discuss the services that they had circled. Following the discussion, the sheets were collected, and the responses tallied (Table 4). Reproductive care STD Testing/Treatment were ranked as most important. All of the focus groups ranked reproductive care and prescriptions/dispensing of medications in the top three. Immunizations were identified as most important by the youngest and oldest groups and may reflect their recent experiences with the SBHC to fulfill school or college requirements.

Wellness care. Students discussed multiple aspects of wellness care provided at the SBHC. They stressed the importance of having physical examinations available to them to meet school requirements, for sports participation, or to attend camp. The ability to have the visit "right when you need it" (male 13–14) at the school facilitated timely access to care. A teen commented that "sometimes it's hard for people to get…physicals. Especially since—a lot of people lost their …insurance. So, I mean this is like a free and easy way to do it" (male 15–17). Many of the teens reported receiving vaccines to meet their school requirements or to protect them from infections that could affect their health. Specifically, influenza vaccine and human papillomavirus vaccines were mentioned as important vaccinations that they had received through the SBHC.

Treatment of acute illnesses or injuries. Students from all the focus groups discussed instances in which they were either sick or injured and needed to be evaluated and treated at the SBHC. Examples provided by participants included colds, sore throats, musculoskeletal injuries, acute asthma exacerbations, and infections. If a teen needed further evaluation for a medical concern, the NP would make a referral to a community agency or specialty service and make sure it was scheduled.

> That is every day with colds and sore throats and stuff like that. Especially in school you come in to contact with people daily. And so, I feel like you need to get treated ASAP and it's good that they [the SBHC staff] are there for that, so you don't spread it around the school.
>
> [male 15–17]

The availability of medications through the SBHC was discussed an important service provided to teens because it allowed them "to take care of my problem" (male 13–14) and remain in school and not be sent back to class, in pain or sick, or home for the day. The NPs also sent prescriptions to a local pharmacy to be pick-up by the teen after school, if needed, and the NP confirmed the prescription was covered by their insurance before the teen left the SBHC. Teens felt it was very important for them to be able to get their prescriptions independently.

> If there is something wrong with me, I can just go to CVS and like pick it up and my mom doesn't really have to know. I mean my mom knows everything about when…I get a prescription…but it is nice think about that she [the NP] could do that.
>
> [female 15–17]

The NP also would provide medication for students without insurance "to get you through it" (female 18–19), which was viewed as important and different than other places teens have been for care.

> I didn't have health insurance, right? And I thought I had cancer because I had this thing in my boob that is still being checked. I went to the hospital and they didn't want to see me because I have no health insurance. So, I came here and they saw me and they actually gave me pills for it and stuff so the pain can stop. So, I think that's important…when it's serious things like that. How are you not going to see me if I'm telling you, I think I have cancer? I was freaking out!
>
> [female 18–19]

Reproductive care. All the focus groups discussed various aspects of the reproductive care provided in the SBHCs, including pregnancy tests, STD/HIV testing and treatment, access to contraception, condoms, and prevention education. The teens remarked on the confidentiality related to this type of care and how it allowed them to access services more comfortably.

> Okay, I'm not going to be shy about it, the pregnancy one because I definitely would not go to my real doctor about that situation.

Table 4
Three most important SBHC services reported by focus group participants.

	13–14 year-olds		15–17 year-olds		18–19 year-olds		Total (%)
Number of participants	Female 4	Male 5	Female 3	Male 4	Female 6	Male[a] 8	30
SBHC services							
Physical examinations for school, sports, or camp	2	1	1	2		2	8 (9%)
Routine check-ups	2	1		1	1	4	9 (10%)
Treatment of acute illnesses or injuries (colds, sore throats, rash)		2	1	1	1	3	8 (9%)
Care of chronic illnesses (asthma, diabetes)		4	1		1	3	9 (10%)
Immunizations		2				3	5 (5%)
Mental health care	2			1	2	3	8 (9%)
Reproductive care (pregnancy tests, contraception counseling, condoms)	2	2	2	2	4	1	13 (14%)
STD/HIV testing and treatment		1		3	5	3	12 (13%)
Nutrition counseling/weight counseling				1	1	1	3 (3%)
Crisis intervention	2			1	1		4 (4%)
Prescriptions & dispensing of medications	1	2	2	1	2	1	9 (10%)
Laboratory testing			1			1	2 (2%)
Individual, group, family counseling							0
Health education	1						1 (1%)
Classroom presentations							0
Dental care					1		1 (1%)
Referral and follow-up to specialty care							0

[a] 2 participants, in the male 18–19-year-old group, each circled 4 responses.

> Definitely not! Here I'm very comfortable with talking about that stuff with her [the NP].
>
> [female 15–17]

Laboratory services focused on STD and HIV testing and pregnancy tests. "I think honestly the most important one would be the STD/HIV because it would be good to know that you don't have anything and could find a way not to catch it" (male 18–19). Participants appreciated how quickly they could receive STD testing and get the results at the SBHC, which eased their worries about having an STD after risky behavior. The importance of STD screening was emphasized to all students by the SBHC so frequently that it was regular aspect of the care they received in comparison to other places they received care where it was a more optional aspect of services.

> I did STD and HIV testing, because, I feel like—well here you kind of have to be tested and other places, not really, it's more of your decision. So, I feel like that is good, because it's better safe than sorry.
>
> [male 15–17]

The younger adolescents debated if STD/HIV services should be available in the SBHC because teens their age "shouldn't be doing that" (male 13–14).

> If I were to put something at the bottom of the list it would be STD, or not STD, but HIV testing. Because if you do that, that is your own problem, personally. Because you shouldn't be taking that risk—those risks at this age anyway, so. And that should be your own problem.
>
> [male 13–14]

In the end, they agreed that if someone needed STD/HIV testing it should be available at the SBHC.

Prevention was a focus of the counseling offered at the SBHCs and included abstinence, safer sex, and the prevention of pregnancy and STDs/HIV. Teens stated the staff "drills it into my head constantly" (female 18–19).

> I think it is a good idea, the fact that they give out condoms and stuff like that, to make sure that they prevent pregnancies and things that they care take care of. They want the kids to have a future and not become parents at an early age.
>
> [male 13–14]

Teens commented that it was important for the SBHC to have STD treatment available because "won't go to my real doctor for that" (male 18–19) because of their fears that their confidentiality would be compromised by the clinician. The importance of fast and easy access to STD/HIV testing was explained by a female adolescent.

> We are all sexually active…and we may have a boyfriend, or we may do other partners, but like, I remember I didn't trust my boyfriend at one point that I'm with now. So, one time we did it without a condom and instead of going to …the hospital, waiting, making an appointment, I came here the next day, asked her to do, she pricked me, sent it in and the next day it was back–instead of sitting here and waiting a long time…because it is scary thing to think about.
>
> [female 18–19]

Male teens commented that it was easier to get condoms in the community because they were not available at their SBHC. "I think it is easier to get condoms out in the community than to get them in a health center… yep, you can go to any gas station, any Walmart" (male 18–19). Even though condoms were not available in one of the clinics, the teens still thought that the SBHC would give condoms to them "if we really needed them." "I mean, I'm sure if you were like, 'Hey - I've been having a lot of unprotected sex,' they would be like, 'Here is a condom'" (male 18–19).

Mental health/crisis intervention. Counseling services provided to students in the SBHC were identified as important aspects of the care in SBHC. Students received regularly scheduled appointments for ongoing counseling. "I picked mental health care because um, they really talk to you and help you if you are feeling bad about yourself or something" (female 13–14). Others described acute mental health needs that required immediate intervention.

> …because there are times where I have mental breakdowns in school. Like, I have anxiety and stuff, so I have moments where like—my heart starts racing and I start crying out of nowhere and it's because I can't breathe and stuff like that. Then I start thinking stupid things that I shouldn't and now there is somebody here that can see me and help me calm down. It helps me more now because I don't have to wait and try and do it on my own inside the school. I have somebody who I can see instead of waiting until I get out of school. And then it's like hours from now and then it's just pointless. I want somebody who I can come and talk to automatically and I don't do something stupid because my mind is racing.
>
> [female 18–19]

The support provided through the SBHC allowed students to continue attending school and remarked that it would be difficult to continue without the services they received. Crisis intervention as a unique service provided through the SBHC. "My grandfather died recently" (female 13–14) was an example given for this category. Others recounted family situations that had precipitated their initial visit to the SBHC. Students described that the "team" took care of them in collaboration often with the school staff when a crisis occurred so that they always had access to support services as needed during the school day.

Nutrition/weight counseling. Both male and female adolescents identified the importance of nutrition and weight counseling in their top three services. "I feel like they [SBHC NP] do it [nutrition and weight counseling] just to benefit you…it's more personalized" (male 15–17). Adolescent girls described the importance of this type of counseling because of personal struggles they had had with their weight while taking various methods of contraception. The SBHC staff was supportive and motivating to them to change their diet and exercise habits so they could avoid gaining weight or to help them lose weight appropriately.

Relationship between the school and SBHC

The final essential element was discussed by asking the participants "Does the relationship the SBHC staff has with the school staff including the principal, nurse or teachers matter to them, please provide examples?" Three themes resulted from the focus group discussions.

School supports the SBHC. Participants described a supportive relationship between the school and SBHC. "I feel like if they didn't have a good relationship, they wouldn't still be here" (male 18–19). Coaches, the principal, teachers, security staff, secretaries, staff, and the school nurse were identified as sources of referral to the SBHC. In addition, the school often advertised for the SBHC through overhead announcements especially for participation in sports. Information about the SBHC was provided to new students so they could complete their health requirements. The adolescents identified the relationship between the SBHC and the school nurse as collaborative. Peers who had used the SBHC were also identified as an important source of referral. The adolescents felt little, if any, resistance to their use of the SBHC and identified a visit to the SBHC was viewed as more "credible" (male 13–14) reason for missing class than a visit to the school nurse.

Working collaboratively. The school nurse and the SBHC were viewed as supporting each other in the care of students. Many of the adolescents reported that the school nurse had initially referred them to the SBHC.

> Yeah, they help each other out…when I first came here I went to the school nurse because…I felt really lightheaded and I felt sick. My throat was just killing me. So, I went to the nurse and um they couldn't really do anything about it and then I didn't know that I had papers signed for here [SBHC] and it turned out I did. So [the nurse] sent me over here and they both went and check me and stuff. So they like, help each other out. They work together.
>
> [female 15–17]

Students remarked that their school nurse often told them "Make sure you stop by the school health center just to make sure because they know better" (female 15–17).

All teachers don't know about the SBHC. Despite the positive support the school and school nurse provided to the SBHC and its use by students, adolescents in all focus groups described a lack of knowledge by their teachers about the SBHC services. "I'm not sure the teachers understand…I think they think it's [the SBHC] basically like the school nurse" (female 15–17). A student asked their teacher if they could go to the SBHC and the teacher replied, "The what?" or they knew because they would receive a pass from their teacher that "just said 'nurse'" on it (female 15–17).

Teachers, who were knowledgeable about the SBHC services, were supportive of adolescents' use of the SBHC and often would refer students to the SBHC instead of the school nurse. A female adolescent described a time when she was very ill and her teacher brought her to the SBHC. "She [the teacher] stopped the whole class to bring me down there [SBHC]. I was like 'Oh my God.' She said, 'I'm going to help you and I'm going to get you help'" (female 18–19).

Adolescents in this study were very aware of what they like and do not like about the health care services they receive. The SBHC was identified as a source of health care services that were comfortable, confidential, easily accessible, and provided to them by clinicians they knew and trusted. They valued the variety of clinical services available to them at the SBHC.

Mixing of quantitative and qualitative data

The final strand of this mixed methods study involved mixing of the quantitative and qualitative data from the first two phases to answer the final research question. Table 5 provides the six essential elements of adolescent-friendly care from the perspectives of the NPs and adolescents and the shared perspective in the center.

The NPs and adolescents shared perspectives related to confidentiality and privacy. Regarding the SBHC Environment, the teens focused on the physical space (aesthetics and cleanliness) of the SBHC and the feeling they experienced when they were in the clinic and the NPs identified providing all adolescents with a welcoming environment to receive health care services. Both groups identified "working together" as an important aspect of the essential element SBHC Clinician/Staff, the NPs also felt that showing respect for adolescents and being a competent provider as aspects of this element. The adolescents identified the clinicians and staff as knowing them, the NP being reliable, and making them feel comfortable as essential.

The teens discussed individual services that were most important. The NPs identified a holistic approach to health care services, accessibility of SBHC services, and continuity. Reproductive care and mental health were highlighted as services especially important related to the SBHC. The final essential element, Relationship Between the School and SBHC was identified as a collaborative relationship with the school administrators, staff, nurse, security, faculty, and coaches. The teens agreed with the NP perspectives however emphasized that not all teachers were aware of the SBHC or the services available and felt the school was supportive of the SBHC because a member of the staff regularly referred them to the SBHC for services.

Two overarching themes Comfortable and Trusted Relationship emerged from the analysis and were found not only to be essential to the adolescents' experience with the SBHC but also to the teens' willingness to engage in services. Feeling comfortable was necessary for teens to make appointments, ask for assistance, and share personal information with their providers. Confidentiality and privacy facilitated their comfort and allowed for timely access to care. The development of a trusted relationship with the SBHC clinicians and staff was also a foundational aspect to the adolescents' engagement in SBHC services. This trusted relationship developed over time and allowed the teens to feel the staff knew them as a unique individual. This relationship was enhanced by the continuity of care they experienced in the SBHC as well as their confidentiality and privacy being honored, and the staff being reliable "they do what they say they are going to do" (female 18–19).

The six essential elements, two overarching themes, and the components of complex adaptive systems appear in the conceptual model (Fig. 2). The model is portrayed as a net, rather than a web, to reflect

Table 5
Mixing of data from Delphi technique and focus groups.

Essential element	NP perspective	Shared perspective	Adolescent perspective
Confidentiality/Privacy		What happens in the SBHC, stays in the SBHC A private setting	
Accessibility	Inclusive environment	Flexibility Services available when needed	Positive energy Location
SBHC Clinician/Staff	Showing respect Competence	Working together	Makes me feel comfortable Reliable Knows me
SBHC Services	Comprehensive care Easy to access Continuity	Mental health Reproductive care	Medications Immunizations Laboratory tests Crisis intervention Care of acute & chronic illnesses Nutrition & weight counseling STD testing/treatment Referrals
SBHC Environment	Welcoming to all teens		Comfortable but tiny Good vibes
Relationship between School & SBHC		Working collaboratively	School supports the SBHC All teachers don't know about the SBHC

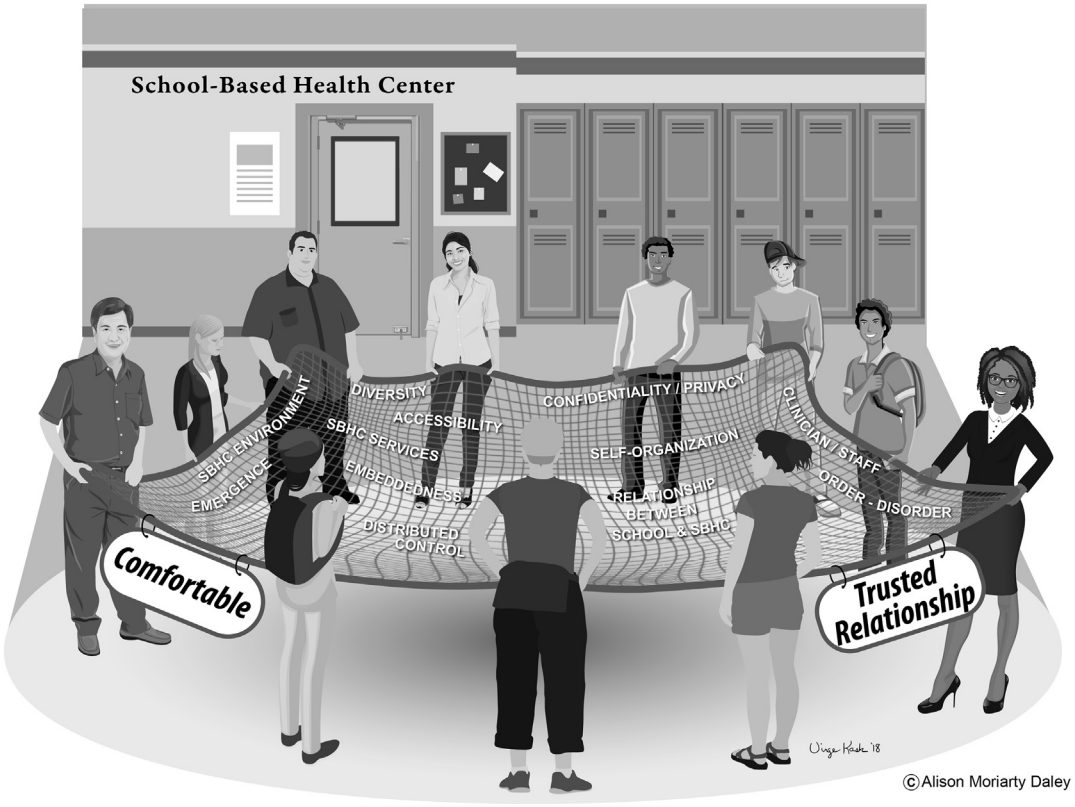

Fig. 2. Essential elements of adolescent-friendly care in SBHCs as a complex adaptive systems model.

the complexity of adolescent-friendly care in SBHCs. The essential, inter-related elements of diversity, self-organization, embeddedness, distributed control, emergence, and coexistence between order and disorder allow the SBHC to adapt and/or respond to the potential and ever-changing needs of those adolescents accessing this health care system. The net expands and contracts due to the weight of contents and its use. The components of the complex adaptive system are necessarily interconnected, dynamic, and flexible which allows the system to respond, change and adapt as needed to meet the changing needs of the system. In addition, the SBHC provides a safety net for those adolescents who have limited access to confidential and comprehensive health or mental health care services.

Discussion

The results of this study are consistent with criteria established by the World Health Organization (2012) toward making health care services adolescent-friendly. However, additional factors including adolescents feeling comfortable and establishing a trusted relationship with a health care provider were found to be essential to adolescent-friendly care in SBHCs. Greater emphasis needs to be placed on confidentiality and privacy, as these were found to be most important to adolescents. New attention on creating health care partnerships between clinicians and adolescents, strategies to increase their comfort, and the unrestricted access to health care services, including reproductive and mental health, are needed to improve engagement in wellness services and ultimately allow services to emerge to help decrease many of the preventable causes of morbidity and mortality for this population.

Adolescents and NPs shared similar thoughts on adolescent-friendly care in the areas of the confidential and private services, the flexibility and availability of services for teens accessing the SBHC, and the collaborative nature of care between the teens and SBHC staff as well as the SBHC staff and the school administration and staff.

Mental health services were an area of importance identified by both the NPs and adolescents. Mental health issues often emerge during adolescence and may cause chronic mental health issues, social isolation, school failure, and increased risk of substance abuse and suicide (Kessler, Berglund, Demler, Jin, & Walters, 2005). Nationwide, an estimated 20% of adolescents (13–18 years old) are affected by a mental health condition; far fewer receive mental health services (Merikangas et al., 2011; Murphey, Barry, & Vaughn, 2013). Seventy-five percent of all mental illnesses begin prior to age 24; the time from the onset of symptoms to intervention is often 8–10 years (Kessler et al., 2005; Schwarz, 2009). Adolescents with a mental illness are much more likely to not complete high school (Kent et al., 2011). SBHCs have been identified as an essential clinical service for the early identification and treatment of adolescents with mental health conditions (Murphey et al., 2013). However, mental health training for NPs, until recently, has been limited. To meet the mental health needs of adolescents the curriculum in NP programs needs to be expanded and will augment existing mental health services provided by our social worker colleagues in SBHCs.

Only half of SBHCs serving adolescents nationwide provide contraception on-site or via prescription (Love et al., 2016). Limiting access to needed reproductive services delays access to contraception and condoms and increases the risk for unintended pregnancies and STDs, both of which can have a significant impact on an adolescent's current and future life. Healthcare providers need to advocate for adolescents' rights related to contraceptive access and reproductive services available in SBHCs. At the very least, these services should be congruent with the services available to adolescents elsewhere in the community, not more restrictive. Any additional restrictions placed on services for adolescents, particularly reproductive care, do not allow providers to best meet the needs of this population. NPs need to advocate for these

restrictions to be eliminated and allow adolescents to have access to comprehensive health care.

A surprising finding from this study was the divergent perspectives of the NPs and adolescents regarding the importance of a trusted relationship between teens and their health care providers and the impact this relationship has on adolescents' willingness to engage in health care services. Developing trusted relationships requires time and a commitment of clinicians and agencies to adapt mechanisms that enhance continuity and distribute control whenever possible (Daley & Polifroni, 2017). Further studies are needed to evaluate the impact that shorter versus longer appointment times have on the provision of adolescent-friendly care, the delivery of recommended anticipatory guidance and screening into wellness visits, and ultimately on health outcomes.

An understanding of the unique developmental needs of adolescents is a critical aspect of the health care provided to this population. Adolescents are learning how to navigate the world, including the health care system, and need to become increasingly independent in their participation in health. Health care services need to be tailored to meet the diverse needs of adolescents and responsive to the way adolescents engage in care (Daley, 2012). The low rates of engagement in wellness care by adolescents and young adults necessitate health care providers and clinical staff to be trained to meet the unique needs and expectations of teens so that opportunities for their engagement in health care services will be maximized. Healthy People 2020 goals include an increase in practicing primary care providers (U.S. Department of Health and Human Services, 2018). However, the current training of primary providers has limitations and inadequacies related to the health needs of adolescents (Lawrence et al., 2009). Improvements in the professional education, across disciplines, specific to adolescent health care are needed. This education needs to incorporate the unique health and developmental needs of adolescents with particular attention to their reproductive and mental health needs (Lawrence et al., 2009; Society of Health and Medicine, 2017).

Teachers, because of their frequent and continuous contact with adolescents in school, are in an excellent position to notice the needs of their students and to make timely referrals to the SBHC for health services. Simple strategies including inviting teachers to tour the SBHC and educating them about available services can remove additional barriers for teens accessing care in a timely manner.

Further research is needed to document and test models of care with respect to health in terms of adolescent satisfaction with SBHC services including reproductive care and mental health services. Currently, only one study exists related to adolescent views on SBHC services provided by NPs (Benkert et al., 2007). The roles of comfort and the relationship between health care provider and the adolescent need further exploration to determine the impact these factors have on engagement in SBHC and wellness services for adolescents and young adults. Currently there is some literature documenting the effectiveness of SBHCs, however further research is needed in this area. SBHCs are often not afforded the opportunity to be designated as a heath care home and as a result suffer from the lack of reimbursement for the services provided (School-Based Health Alliance, 2015). Increased attention and documentation on the impact of SBHCs on the health and education of the nation's youth are necessary for continued growth of SBHC capacity. Building capacity will require larger spaces and more staff to adapt to the growing needs of the patient population accessing services. Data are not currently available beyond the local level on how many visits and the types of visits made to SBHCs nationwide. These data are crucial to increasing funding for the expansion of these services.

Strengths and limitations

In this study we used an explanatory sequential mixed methods design that included the perspectives of NPs and adolescents specific to the essential elements of adolescent-friendly care in SBHC. This is the first research study to capture these two perspectives. The two research methods complemented each other and allowed a deeper understanding of the quantitative data from the first phase of the study (Creswell & Plano-Clark, 2011). This method also provided the opportunity to compare and contrast the perspectives of the NPs and adolescents and gain a greater understanding of what is essential for the delivery of adolescent-friendly care in SBHC.

A purposive sample of NPs for Delphi technique and adolescents for the focus groups was used for this study (Polit & Beck, 2012). Only the most interested NPs and adolescents likely participated in each phase of the study and may not have fully captured all the possible responses to the research questions. Both phases occurred in the Northeastern Region of the United States and may not adequately captured the perspectives of NPs and adolescents from other areas of the country however there was much diversity in the samples and SBHC sites used in this study. In this study, we asked adolescents their perspective on the essential elements identified by the NPs. The results may have been different if the adolescents had been asked to identify what they thought were the essential elements of adolescent-friendly care related to their experience in receiving care in SBHCs. This is an area for further research.

Conclusion

In this explanatory sequential mixed methods study, we identified the essential elements of adolescent-friendly care from the perspectives of NPs providing care to adolescents in SBHCs and the adolescents engaging in the care provided via SBHCs. These perspectives provide valuable insight into the expectations of adolescents regarding their health care experience and help to bridge the gap for them receiving appropriate health care services. Adolescent preventive health care services are an important mechanism for assisting adolescents to remain healthy and avoid many sources of morbidity and mortality. SBHCs are an important community resource for addressing the health care needs of adolescents. This study provides the unique perspectives of NPs and adolescents regarding the essential elements of adolescent friendly care in SBHCs.

CRediT authorship contribution statement

Alison Moriarty Daley: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Visualization, Writing - original draft, Writing - review & editing. **E. Carol Polifroni:** Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Supervision, Validation, Writing - original draft, Writing - review & editing. **Lois S. Sadler:** Conceptualization, Methodology, Supervision, Validation, Writing - review & editing.

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References

Begun, J., Zimmerman, B., & Dooley, K. (2003). Health organizations as complex adaptive systems. In S. M. Mick, & M. Wyttenbach (Eds.), *Advances in health care organization theory* (pp. 253–288). San Francisco, CA: Jossey-Bass.

Benkert, R., George, N., Tanner, C., Barkauskas, V. H., Phol, J. M., & Marszalek, A. (2007). Satisfaction with school-based teen health center: A report card on care. *Pediatric Nursing, 33*, 103–109.

Cilliers, P. (2000). *Complexity & postmodernism: Understanding complex systems*. NY: Routledge.

Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Washington, DC: Sage.
Daley, A. M. (2012). Rethinking school-based health centers as complex adaptive systems: Maximizing opportunities for the prevention of teen pregnancy and sexually transmitted infections. *Advances in Nursing Science*, *35*(2), e37–e46.
Daley, A. M. (2016). *The essential elements of adolescent-friendly care in school-based health centers: A mixed methods study of the perspectives of nurse practitioners and adolescents.* (Doctoral dissertation) Unpublished.
Daley, A. M., & Polifroni, E. C. (2017). "Contraceptive care for adolescents in school-based health centers is essential!" The lived-experience of nurse practitioners. *Journal of School Nursing*. https://doi.org/10.1177/1059840517709503 Advance online publication.
Hallowell, M. R., & Gambatese, J. A. (2010). Qualitative research: Application of the Delphi method to CEM research. *Journal of Construction Engineering and Management*, *136*, 99–107.
Holland, J. H. (2006). Studying complex adaptive systems. *Journal of Systems Science and Complexity*, *19*, 1–8.
Irwin, C. E., Adams, S. H., Park, J., & Newacheck, P. W. (2009). Preventive care for adolescents: Few get visits and fewer get services. *Pediatrics*, *123*, e565–e572.
Keeney, S., Hasson, F., & McKenna, H. (2011). *The Delphi technique in nursing and health research.* New Delhi, India: Wiley-Blackwell.
Kent, K. M., Pelham, W. E., Molina, B. S. G., Siblet, M. H., Waschbusch, D. A., Yu, J., ... Karch, K. M. (2011). The academic experience of male high school students with ADHD. *Journal of Abnormal Child Psychology*, *39*, 451–462.
Kessler, R. C., Berglund, P., Demler, O., Jin, R., & Walters, E. E. (2005). Life-time prevalence and age-of-onset distribution of DSM-IV disorders in the National Co-morbidity Survey Replication. *Archives of General Psychiatry*, *62*, 593–602.
Krippendorff, K. (2013). *Content analysis: An introduction to its methodology* (3rd ed.). Thousand Oaks, CA: Sage Publications.
Krueger, R. A., & Casey, M. A. (2008). *Focus groups: A practical guide for applied research* (4th ed.). Washington, D.C.: Sage Publications.
Lawrence, R. S., Gootman, J. A., & Sim, L. J. (2009). *Adolescent health services missing opportunities.* Washington, DC: The National Academies Press.
Lindberg, C., Nash, S., & Lindberg, C. (2008). *On the edge: Nursing in the age of complexity.* Bordentown, New Jersey: PlexusPress.
Lofink, H., Kuebler, J., Juszczak, L., Schlitt, J., Even, M., Rosenberg, J., & White, I. (2013). *2010–2011 School-Based Health Alliance census report.* Washington, DC: School-Based Health Alliance.
Love, H. L., Schelar, E., Taylor, K., Schlitt, J., Even, M., Burns, A., ... Windham, D. (2016). *School-Based Health Alliance 2013–14 digital census report.* Washington, DC: School-Based Health Alliance Retrieved from http://censusreport.sbh4all.org/.
McIntyre, P. (2002). *Adolescent friendly health services: An agenda for change.* Oxford, UK: World Health Organization.
Merikangas, K. R., He, J., Burstein, M. E., Swendsen, J., Avenevoli, S., Case, B., ... Olfson, M. (2011). Service utilization for lifetime mental disorders in U.S. adolescents: Results from the National Comorbidity Survey Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, *50*, 32–45.
Miniño, A. M. (2010). Mortality among teenagers aged 12–19 years: United States, 1999–2006. NCHS data brief, no. 37. Hyattsville, MD: National Center for Health Statistics Retrieved from http://www.cdc.gov/nchs/data/databrief/db37.pdf.
Murphey, D., Barry, M., & Vaughn, B. (2013). Mental health disorders. *Childtrends*(2013-1), 1–10 Retrieved from https://www.childtrends.org/wp-content/uploads/2013/03/Child_Trends-2013_01_01_AHH_MentalDisordersl.pdf.
Polit, D. F., & Beck, C. T. (2012). *Nursing research: Generating and assessing evidence for nursing practice* (9th ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.
School-Based Health Alliance (2015). *School-based health care state policy survey.* Washington, D.C.: School-Based Health Alliance Retrieved from http://www.sbhc4all.org/school-health-care/aboutsbhcs/school-based-health-care-state-policy-survey.
Schwarz, L. (2009). *Adolescent mental health in the United States.* New York, NY: National Center for Children in Poverty Mailman School of Public Health Columbia University.
Skulmoski, G. J., Hartman, F. T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education*, *6*, 1–21.
Society for Adolescent Health and Medicine (2017). Adolescent medicine health curriculum. Retrieved from http://adolescenthealth.org.
Strozer, J., Juszczak, L., & Ammerman, A. (2010). *School-based health centers: National census school year 2007–2008.* Washington, D.C.: National Assembly on School-Based Health Care.
Tan, J., Wen, H. J., & Awaad, N. (2005). Health care and services delivery systems as complex adaptive systems: Examining chaos theory in action. *Communications of the ACM*, *48*, 36–44.
Tsai, Y., Zhou, F., Wortley, P., Shefer, A., & Stokley, S. (2014). Trends and characteristics of preventive care visits among commercially insured adolescents, 2003–2010. *The Journal of Pediatrics*, *164*, 625–630. https://doi.org/10.1016/j.peds.2013.10.042.
U.S. Department of Health and Human Services, (2018). Healthy people 2020: Access to health services. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services/objectives
Uhl-Bien, M., & Arena, M. (2017). Complexity leadership: Enabling people and organizations for adaptability. *Organizational Dynamics*, *46*, 9–20. https://doi.org/10.1016/j.orddyn.2016.12.001.
Wilson, T., & Holt, T. (2001). Complexity science: Complexity and clinical care. *British Medical Journal*, *323*, 685–688.
World Health Organization (2009). *Quality assessment guidebook: A guide to assessing health services for adolescent clients.* Geneva, Switzerland: Author Retrieved from http://whqlibdoc.who.int/publications/2009/9789241598859_eng.pdf.
World Health Organization (2012). Making health services adolescent friendly: Developing national quality standards for adolescent friendly health services. Geneva, Switzerland: WHO Press.