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Experiences of health communication within the family: Parent and adolescent perspectives

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Introduction

Adolescence is a critical period for the development of health and well-being (Currie & Aleman-Diaz, 2015). This stage of life is a pivotal time for transition toward independent health risk assessment and autonomous health decision making (Chisolm & Buchanan, 2007).

However, the family unit still plays an important role in the development of attitudes, beliefs and behaviors related to health, particularly through family health communication (Baiocchi-Wagner & Talley, 2013; Henrick, Brookmeyer, Shirer & Shahar, 2006). Family health communication patterns, in which positive, health-enhancing behaviors and attitudes are reinforced may support healthy behaviors in youth (Baiocchi-Wagner & Talley, 2013). This suggests that the parents and guardians in the family unit should have appropriate and adequate health knowledge in order to facilitate effective conversations. A construct that often precedes and predicts health knowledge is health literacy (Quinlin, Price, Magid, Lyman, Mandyl & Stone, 2013). Health literacy is the degree to which individuals can obtain, process, understand and communicate about health information needed in order to make informed health care decisions (Berkman, Davis, & McCormack, 2010). Although health communication between adolescents and parents has been widely studied, to date, there has been little research done that has examined the consideration of health literacy in family communication despite its seeming importance in the outcome of family health communication. Therefore the purpose of this study was to examine the health literacy of adults and adolescents and to explore the experiences of health communication among families with adolescent children.

Review of the Literature

Research suggests that family health communication can impact the values, attitudes and behaviors of adolescents. Positive family communication patterns have been found to significantly influence adolescent decision making regarding health, leading to an increase in

healthy behaviors and a decrease in risky behaviors (Baiocchi-Wagner & Talley, 2013; Brooks, Zaborskis, Tabak, Alcon, Zemaitiene, Roos, & Klemera, 2015; Karofsky, Zeng & Kosorok, 2000). Frequent, health-specific family communication patterns that make family members feel valued and respected allow individuals to develop their own understanding of their health attitudes and behaviors (Henrick et al., 2006). For example, Baiocchi-Wagner and Talley (2013), surveyed 433 family dyads (college students and their parents), to examine associations between family communication, health attitudes, and behaviors regarding diet and exercise. Using a multilevel path analysis framework, they found that perceived confirmation from a family member during a conversation about diet and exercise directly influences health attitudes in a positive way (Baiocchi-Wagner & Talley, 2013). Through a meta-analysis of experiential evidence in order to quantify the effect that changing attitudes (87 studies), norms (21 studies) and self-efficacy (109 studies) had on subsequent intentions and behaviors (Sheeran et al., 2016), researchers concluded interventions upon these three domains led to medium sized changes in intention and small to medium sized changes in behavior. This research supports that attitudes toward a health behavior impacts intention and leads to change in behavior (Sheeran et al., 2016). When viewed in conjunction with the evidence on the influence that family communication can have on health attitudes, current findings suggest that family communication that encourages health-enhancing attitudes can directly impact health behavior in a positive manner (Baiocchi-Wagner & Talley, 2013; Sheeran et al., 2016).

Interestingly, there is also evidence that family communication and health-related conversations may directly impact a variety of health behaviors from exercise to sexual activity. Baiocchi-Wagner & Tally (2013) also found that families that routinely discussed diet and exercise, regardless of individual health attitudes or daily communication patterns, had a greater

likelihood of participating in health dietary and physical activity behaviors. Similarly, families that engage in early and recurrent communication about sexual topics between parents and adolescents may delay the onset of sexual activity (Karofsky et al., 2000) and decrease the likelihood of adolescents engaging in risky sexual behaviors (Guilamo-Ramos et al., 2012; Miller, Benson & Galbraith, 2001; Silk & Romero, 2013; Widman, L., Choukas-Bradley, S., Noar, S. M., Nesi, J & Garrett, K, 2016). Through a ten-year longitudinal study of 203 adolescents, teen sexual behavior patterns and parental relationships were assessed through self-reported questionnaires (Karofsky et al., 2000). Adolescents categorized as virgins had a higher rating of communication with their parents compared to teens categorized as non-virgins; furthermore, communication with the mother was significantly better for the teens who maintained their virginal status over a five-year period of time (Karofsky et al., 2000). Using a meta-analysis approach to examine sexual risk behaviors in adolescents, Widman et al (2016) concluded communication with parents, particularly mothers, can provide protection against sexual risky behavior in teens.

Many of the studies discussed above have used quantitative methods to examine the impacts of family health communication. However, qualitative methods have also been used in order to gain a deeper understanding of the experience of family communication from both parents and adolescents. Miller-Day (2002), interviewed 67 inner-city teens inquiring about their conversations with their parents regarding alcohol, tobacco and drug use. The majority of the adolescents had not talked about substance use with their parents, however significantly more teens preferred to talk about risky behaviors with their mothers (Miller-Day, 2002). Another qualitative study investigated potential antecedents and outcomes of challenging family conversations recalled by 141 teens and adults aged 17-33 (Keating, Russell, Cornacchione &

Smith, 2013). Common topics of communication included sexual activity, autonomy, relationships, physical and emotional well-being; the majority of respondents indicated difficult conversations had occurred and reported positive outcomes such as trust and support from these conversations despite feelings of fear or negativity ahead of time (Keating et al., 2013). Family communication is one effective strategy for promoting healthy attitudes and behaviors in adolescents, which may further help establish health-enhancing patterns and behaviors that can impact health in both adolescence and into adulthood (Burdette, Needham, Taylor & Hill, 2017).

While current research suggests that family communication can have a positive impact on adolescent health, there is little research that has examined the health literacy of family members and the role it may play in family health communication. Health literacy is often defined as the degree to which individuals can obtain, process, understand and communicate about health information needed in order to make informed health care decisions (Berkman et al., 2010). Adequate health literacy has been widely studied in the clinical context through quantitative methods and is associated with better health knowledge, health behaviors and clinical outcomes in adult populations (Kutner, Greenberg, Jin, Paulsen & White, 2006; Vernon, Trujillo, Rosenbaum & DeBuono, 2007). Health literacy for adolescent populations has been evaluated far less extensively, though still primarily through quantitative means. Chisolm and colleagues (2014) recruited 293 teens from urban medical centers and found that higher levels of health literacy moderated the relationship between alcohol expectancy and alcohol use. In another cross sectional survey study of 239 parent-teen dyads recruited from a health clinic found lower levels of health literacy in adolescents were strongly associated with obesity (Chari, Warsh, Ketterer, Hossain & Sharif, 2014). Through the perspective of family communication, it would seem that parental or adolescent health literacy might impact the efficacy of the communication. However,

there has been little research conducted that has examined health literacy within the family context. The few studies identified that examined health literacy and family communication were focused on adult populations and specific disease management such as diabetes (Mayberry, Rothman & Osborn, 2014) or cancer (Goldsmith, Wittenberg, Platt, Iannarino & Reno, 2016). No studies were identified that examined health literacy and adolescent-family communication.

There is a paucity of research that has examined health literacy within the family context particularly among families with adolescents. Furthermore, it is not known how or if health literacy impacts or influences family health communication for families with adolescent children. Therefore the purpose of this study was to examine health literacy in adults and adolescents and then to utilize qualitative methods in order to explore the experiences of health communication within their families.

Method

Participants

Students and adults that were parents of adolescent aged children enrolled in the town high school from a Massachusetts suburb were invited to participate in our qualitative research study. A total of 17 participants (9 high school students and 8 adults) completed a demographic questionnaire, a health literacy screening tool, and a private semi-structured interview.

Data Collection Procedures

Students and adults were recruited from a suburban high school. Inclusion criteria consisted of any student from the high school and any parent or guardian of a student from the high school. Exclusions were non-high school students or adults that were not parents or guardians of children from the high school. The researchers verbally introduced the study to the high school students during health classes between January and March, 2016. Students were also

given an informational flyer with details regarding the study purpose, procedure and researcher contact information. This same informational flyer was emailed to all high school parents through the school, inviting the adults to participate. Interested students and/or parents then contacted the researcher to arrange for a private interview at a location that was convenient to them. Permission was obtained prior to study commencement by the school superintendent, the high school principal and the health teachers; approval for human subject research was also granted through the college Institutional Review Board. Written consent was obtained from all participants over age 18; written child assent and written parental consent was obtained for anyone <age 18. A \$15 Amazon gift card was given to all study participants for their time after data collection procedures were completed.

Each participant completed a demographic questionnaire and the Newest Vital Sign (NVS), which measured health literacy. In this study, the health literacy screening tool was implemented into order to include health literacy as a participant characteristic. Utilizing a qualitative approach, one researcher, the lead author on this paper, conducted one-on-one, private semi-structured interviews with each high school student and each adult participant. The semi-structured interview format provided consistency in the data collection which supports the credibility of the data, but also flexibility by allowing for deeper inquiry with spontaneous follow-up questions to the participant responses in order to explore responses systematically and comprehensively (Jamshed, 2014). Adults and students were interviewed separately. Participants chose the location for the interview which included: private homes (10), a private room in the town library (6), and one on a private bench at the town common. The researcher that conducted the interviews has extensive experience in health-related communication with individuals, experience in the medical field and doctoral level training in qualitative methods.

The interviews were audio-recorded, then transcribed verbatim. The third author (a graduate student with qualitative training) transcribed the interviews. The lead author and graduate student met regularly during data collection to review transcripts for accuracy and to discuss ongoing data analysis. After 17 participants had been interviewed, the researchers determined data saturation had occurred; therefore participant recruitment was terminated.

Measurement

Demographic questionnaire and health literacy screening tool.

All participants completed a self-report demographic questionnaire. Adult demographic information collected included: age, sex, race, education and health field occupation (Y/N). High school student demographic information collected included: age, sex, race and grade level.

We measured health literacy using the Newest Vital Sign (NVS) (Weiss et al., 2005). The NVS tool is designed to identify people that may be at risk for limitations understanding health information and has been previously validated in both adult and adolescent populations (Weiss et al., 2005; Warsh, Chari, Badaczewski, Hossain & Sharif, 2014). The NVS is a fictional ice cream nutrition label. Participants were asked to independently read the label and then respond to 6 oral questions about the label. The questions require participants to have common health literacy skills such as reading, interpretation, comprehension and the ability to perform minor numeric calculations; ie *“If you eat the entire container, how many calories will you eat?”* (Weiss et al., 2005). Results were scored on a scale 0-6; scores of 4-6 = adequate health literacy and scores <4= limited health literacy (Weiss et al., 2005; Shah, L. C., West, P., Bremmeyer, K. & Savoy-Moore, R. T., 2010).

Qualitative instrument.

Guided by the literature, we created one semi-structured interview guide in order to gain an understanding of health communications that occur within families of high school aged children. We asked a total of seven questions and then in a natural conversational approach, responded to participants with follow-up questions in our effort to understand how these adults and adolescents viewed health, learned about health information and what types of health topics were discussed within their families (Table 1).

Interview Guide Questions

What does the word health mean to you?
 How do you learn about health information?
 How do you decide when to see a doctor or nurse practitioner?
 What kinds of health topics do you talk about in your family?
 What kinds of conversations were good or successful?
 What kinds of conversations were not so good?
 What kinds of health topics are you uncomfortable talking about in your family?

Table 1. Qualitative Semi-Structured Interview Guide

Data Analysis

Descriptive statistics were calculated to describe the study sample and to determine health literacy. Qualitative analysis was done using Glazer's grounded theory approach in order to meet our study aims (Heath & Crowley, 2004). The first and third authors completed the initial data analysis by: 1) reading transcripts thoroughly to gain an initial overall sense of the data, 2) open coding to determine categories, 3) axial coding to examine connections among categories and 4) selective coding to determine themes and subthemes that emerged from the data (Strauss & Corbin, 1990). In order to enhance the credibility of the data, analyst triangulation was utilized (Denzin, 1989; Patton & Patton, 2002). The second author, who was not involved in the data collection or initial analysis, independently analyzed the data also using the coding process outlined above. The second author has years of experience implementing

qualitative methodologies within a variety of populations. Once the independent analysis was completed, the lead researcher met with the second author to compare findings. Codes and themes that emerged from the data were compared and the authors came to agreement about the thematic categories and theoretical cores (Heath & Crowley, 2004).

Results

Participants

A total of seventeen participants completed the study; nine adolescents and eight adults. All participants self-identified as White/Caucasian. For the adult participants, the majority were female (n=7, 87.5%), with an average age of 46.71 years old. Adolescent participants were predominantly male (n=5, 55.6%), with an age range of 14-18, and an average age of 15.88. All of the adults had some form of college education. Most all of the participants had adequate health literacy (n=14, 82.3%), this was the majority of both adults (n=7, 87.5%) and adolescents (n=7, 82.4 %). However, one adult (12.5%) and two adolescents (22.2%) scored with limitations in health literacy; which resulted in a total of 17.7% (n=3) of the sample with limited health literacy. Results of study participant characteristics are presented in table 2.

Table 2. Participant characteristics.

Adults n=8	Sex	Age	Race	Adequate Health Literacy (NVS≥4)	Health related Occupation	Education	Grade
<i>Sara</i>	F	41	W	Y	Y	BS	
<i>Amy</i>	F	48	W	Y	Y	AD	
<i>Mary</i>	F	53	W	Y	N	BS	
<i>Lucy</i>	F	-	W	Y	Y	BS	
<i>Karen</i>	F	48	W	Y	N	Some College	
<i>Terry</i>	F	45	W	Y	N	Some College	
<i>Bob</i>	M	48	W	Y	N	MS	
<i>Susan</i>	F	44	W	N	N	-	
Adolescents n=9							
<i>Ron</i>	M	14	W	Y			9
<i>Paul</i>	M	16	W	Y			11
<i>Sally</i>	F	14	W	Y			9
<i>Michael</i>	M	17	W	Y			12
<i>William</i>	M	16	W	Y			11
<i>Richard</i>	M	16	W	Y			10
<i>Kelly</i>	F	16	W	N			9
<i>Michelle</i>	F	16	W	Y			10
<i>Gabbi</i>	F	18	W	N			12

Note: n=number; NVS= Newest Vital Sign score; F=female; M=male; W=White; BS=Bachelor Degree; AD= Associate Degree; MS=Masters Degree; N=No; Y=Yes.

Qualitative Results

The individual semi-structured interviews took between 40-50 minutes for the adult participants and 20-30 minutes for the adolescents. The major themes and sub-themes are presented in Figure 1. In-depth descriptions of the themes and sub-themes with data from the interviews are included below. Themes are presented for all participants but where appropriate, differences between adult and adolescent themes are highlighted.

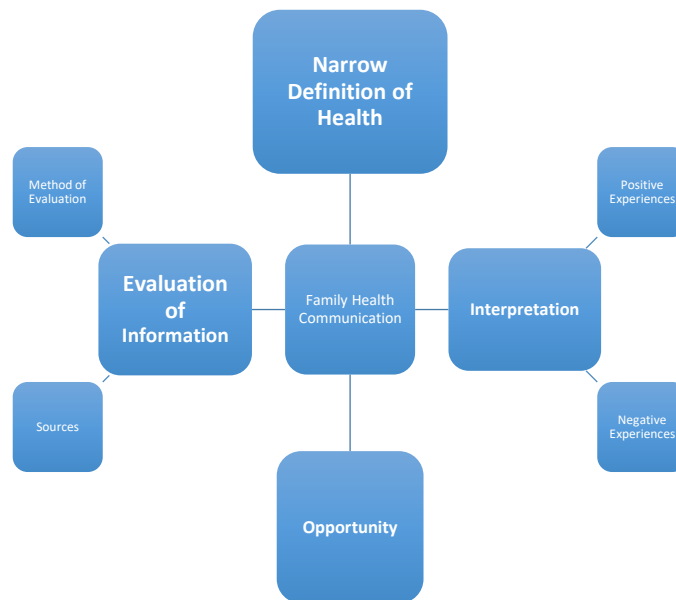


Figure 1. Themes and sub-themes

Narrow definition of health.

Both adult and adolescent participants described health as limited mainly to mind and body. Adults described health as “taking care of your mind and your body” (*Sara*) and “within a good weight and then just mentally . . . functioning well” (*Mary*). *Karen* said that health is “just feeling good. living a healthy lifestyle, not doing things in excess”. Adolescents provided similar definitions of health such as “how you feel, how well or bad your body is . . . what you eat” (*Kelly*). *William* stated that health is “taking care of your body and not making dangerous choices to hurt yourself. “ One adolescent, *Michael*, offered a different definition:

“Health to me means, I just really want to keep going on with my life. I want to keep my body in control. And use it to be the best of my abilities. I want to see the world. So being healthy means I get to live longer and do that.”

Overall, both adults and adolescents had similar, narrow descriptions of what it means to be healthy. For participants, health focused mainly on the physical aspects of health such as eating healthy and exercising. Some participants also mentioned the mental/emotional aspect of health such as *Amy* who said “to be happy is healthy too.” However, data revealed that most participants described narrow ideas about health pertaining to habits that keep their body healthy.

The limited view of health was also described when participants discussed the topics that were covered during their family communications. Common topics, as reported by both adults and teens were sex, nutrition and alcohol and other drugs. Adults also reported discussing topics such as emotions and adolescents described discussions of puberty.

Evaluation of information.

This theme relates to the extent to which and ways that participants found and evaluated health information. Within this theme there are two sub-themes: sources and method of evaluation.

Sources.

Adults listed the following as sources for health information: internet, magazines, friends, family, colleagues, and medical TV shows. *Mary* described getting their health information from “magazines or TV.” *Amy* noted “usually the internet. But my coworkers sometimes will have some answers for me if I am stuck on something. But usually the internet.” *Karen* stated: “I have a couple of nurses in my family . . . if they are not accessible then I would Google it.”

Adolescents described their sources as “. . . probably either my parents, the health teacher or online”(Ron). Another teen stated that she got her information “through health class and usually sometimes my mom” (*Kelly*). However, *Richard* mentioned different sources: “I

have biology books and health books in school . . . I go online and Google is a fantastic source or a fantastic provider of sources of information.”

Method of evaluation.

Participants described different strategies for confirming health information but all participants discussed finding reliable or trusted sources with which to check what they had found. As *Terry* stated, it was important to determine the validity of information because “everything you read through the internet usually is not trustworthy.”

Adolescents tended to rely more on people as trusted sources. *Paul* reported: “if I ever did use the internet I wouldn’t be looking for Wikipedia or a Yahoo answer. Any of the gym or health teachers at the high school. I would be able to trust them”. *Sally* said: “Usually with people I trust . . . my parents . . . my health teacher or someone I know who knows the material. Or just like my parents that I know that wouldn’t lie about it.”

Adults relied on the internet and people in the medical field as their methods of evaluation. Adults explained: “you just go to Google and from there you just have to pay attention. Like I wouldn’t want to go to Wikipedia . . . if it is affiliated with a hospital. So like John Hopkins, their website. And then whoever writes it, sometimes I Google them” (*Sara*). *Bob* described that he “might look it up, WebMD, I actually use that a lot with information. I might verify some information through there.” *Lucy* described using both: “Well I might do another source . . . I may also check the Mayo Clinic. I Google. My best friend is a doctor so I verify things with her as well.” Regardless of the method, adults and adolescents found ways to confirm and evaluate health information they received from various sources.

Interpretation.

Adults and adolescents described both positive and negative experiences with family health communication. Interestingly, adults reported feeling health communications in their families were more negative compared to what the teens reported. In general, adults felt that they had negative experiences during the communication for several reasons: because they felt adolescents were resistant, the teen or parent was embarrassed, or there was negative emotions and a lack of engagement from their teen. For example, adult participant *Karen* described:

“I feel like because he thinks that I think he is stupid . . . I don’t know, I don’t present it well with him sometimes. Sometimes in my head I think this and it comes out of my mouth like this. Then once if I don’t present it right the first time I lost him.”

Sara said: “I think they feel like they are getting blamed for something. Or that I am upset about something. Even though I am not yelling at them.” Adults also described resistance or reluctance. For example, *Terry* stated: “usually we have had this conversation [about drugs and alcohol] where it is not accepted but I can’t prove if she is doing it or not. I feel as though she is very resistant to talk about it.” *Amy* offered the following explanation of discomfort while discussing sex with her sons “they really get obviously embarrassed about it; they don’t want to talk about it”; while *Mary* replied, “I am not comfortable and I know he isn’t comfortable with it.”

While adolescents had an overall positive view on health communications (“there really wasn’t a conversation that didn’t go well” *Michael*), some teens described negative experiences, mainly due to conversations being uncomfortable. *Kelly* stated: “because it is kind of awkward I

guess. I don't really want to talk about it". Another teen, *William* said: "sometimes they don't like hearing it. They don't want to find out I'm doing it." However, adolescent's responses were more positive in general as illustrated by this quote:

"I mean all of our conversations have been successful because they have put something into our minds to seriously think about something. If we aren't taking it seriously then it isn't successful and then our parents will go over it another time when we are actually paying attention." (Ron)

Similarly, adults focused on the negative aspects of family communications; however, some adults discussed positive experiences. For example, *Terry* said: "I think it is successful because I want her to know that we can have these conversations and if she is ever in a position she knows she can still come to me and I won't judge." They also stated that "easy" conversations tended to be more successful. For example, *Sara* described a conversation on nutrition going well "because that is an easy conversation, no one is going to be embarrassed by that. No one is going to get mad at me or think I am ridiculous . . . it is just an easy subject." Adults also described that certain conversations, particularly around sexual intercourse and sexual activity, are more comfortable when they are with a child of the same sex. For example, *Sara* stated "my husband usually does the sex topics because they are all boys and they do not want to talk to me [the mother] about it", similarly, *Lucy* said "I don't know if I would talk sexual in front of both kids. I think I can relate more to my daughter girl to girl, woman to woman." *Bob* also discussed that "usually the sensitive issues are dealt with through my wife" because he has daughters and *Lucy* said, "I leave it to my husband," because her son would be more comfortable with the father.

Opportunity.

The theme of opportunity relates to where and why health conversations happened in the family. Adults and adolescents described places such as the dinner table, the car or the bedroom as places where health conversations occurred. Both groups of participants also discussed that conversations were often started as a connection to something else that was happening. For example, one teen stated: “there was one time we were talking about this drug on the news . . . we started to talk about that and my mom told me about what the consequences were with the police and your body” (*Ron*). Another said, “these topics come up when we talk about it in school. I like to talk to my mom about them so she can prepare me about it for the future” (*Michael*). An adult described that health conversations often happened in their child’s bedroom because “that’s the only time I see her . . . at night when I help her with her homework . . . sometimes we just start talking” (*Lucy*). Adult participant *Bob* said that health communication usually happened “when we are eating.”

Discussion

We sought to explore family communication through the lens of health literacy. We first assessed health literacy levels and then utilized qualitative methods to explore the experiences of health communication for families with adolescent children. Overall, our participants had adequate health literacy with less than 20% (17.7) of our total sample demonstrating limitations in health literacy. Limited health literacy among the adults was 12.5% (n=1), and 22.2% (n=2) among the adolescents. This is considerably less compared to results from the National Assessment of Health Literacy, that identified 36% of US adults with basic or below basic health literacy (Kutner et al., 2006); and a recent systematic review on health literacy for adolescents that identified ~40% limitation in health literacy for adolescents (Sansom-Daly et al., 2016).

This discrepancy may be related in part to the different tools used to measure health literacy in the National Assessment of Health Literacy and the studies included in the adolescent health literacy systematic review; but more likely, is representative of the suburban, predominately female, white, educated make-up of the sample compared to more diverse or nationally representative samples. However, this data presents an important perspective for the qualitative findings as it reveals that our participants are health literate and therefore, themes from our data should be examined within the context of adequate health literacy. Gathering the health literacy data allowed us to gain an understanding of the participants which helps to contextualize the health communication within their families.

All of the participants reported having conversations around health within their families, which was positive finding in light of the impact that family communication can have on adolescent health (Baiocchi-Wagner & Talley, 2013; Guilamo-Ramos et al., 2012; Karofsky et al., 2000; Miller et al., 2001; Silk & Romero, 2013). The majority of our sample had adequate health literacy, which may have influenced or supported the existence of their family health communications, though further studies are needed to explore this. It is also interesting to note that conversations around health continued despite the fact that adults often perceived these conversations as negative. Further research should investigate parent motivation related to health communication and the role that health literacy may play in motivation toward the ability to engage in family health communication.

Common health communication topics recounted by adults and teens included sex, nutrition, alcohol and illicit substances; adults reported additional discussion topics such as emotions, and our adolescents described discussions of puberty. These topics are consistent with results from a national survey that examined the top health topics searched by adolescents on the

internet that revealed the following as the top five health topics research: fitness/exercise, diet/nutrition, stress/anxiety, sexual transmitted diseases and puberty (Wartella, Rideout, Zupancic, Beaudoin-Ryan & Lauricella, 2015). This is consistent with other research which has shown that communication between parents and adolescents often aim to inform, educate and protect teens from health risk behaviors (Baxter, Bylund, Imes & Scheive, 2005; Brooks et al., 2015; Holman & Kellas, 2015). However, adults in this study did not mention asking their children about which topics they wanted to discuss nor did the adolescents ask their parents directly about health issues. Therefore, the fact that our findings so closely match the topics teens search for online is interesting because it suggests that their family communication was addressing areas of concern or interest unintentionally. Perhaps these families engaged in more regular conversations so these topics were regularly discussed, perhaps the adults had an understanding of what their adolescent's health needs were, or perhaps these were topics that parents felt more comfortable or confident addressing. Our research highlights an additional area for further research; to more fully understand how and why health topics for family communication are chosen.

Another key finding from our study is that adult respondents relied more heavily on the internet, magazines or friends/co-workers for sources of health information. These findings are slightly different than results from the Pew Internet & American Life Project (2013), which found US adults tend to seek information from health care providers most frequently, followed by the internet or family and friends (Fox & Duggan, 2013). Adult participants in this study did not mention using health care providers as a source of information. This could be due to the large number of participants that were connected with the health profession (employed, family or friends). This connection with the health field may also have provided our adult participants a

greater level of comfort and confidence evaluating health information. This may also be related to the fact that participants in this study had adequate health literacy which suggests that they had competencies related to appraising health information and may also had higher levels of self-efficacy around information seeking and evaluation abilities. Exploring the role of parental health information evaluation and its impact on health communication within the family should be further explored.

In contrast to the adult participants, adolescent participants most commonly identified their parents or health teacher/class as primary health information sources. This finding is different than some recent studies which have suggested adolescents rely on their friends and mothers as their first source of sexual health information and rarely rely on formal sources such as doctors, school nurses, and teachers and that nearly half (49%) adolescent participants report their health information comes from their health education classes they receive from K-12 (Brown, Teufel, & Birch 2007; Whitfield, Jomeen, Hayter, & Gardiner, 2013). Being able to access valid and reliable sources of information is one aspect of being able to maintain and enhance ones health (Kutner et al., 2006; Vernon et al., 2007). Students in this study relied on parents (who may or may not have been a valid source of health information) and health teachers (should have been a valid source of health information) which suggests that these were people in their lives that they trusted to be good sources and/or with whom they felt comfortable. The variance in results from current studies suggests the need for further research into health seeking behaviors of adolescents.

This finding also highlights the importance of adult availability and interaction for teenage health communication and knowledge acquisition both at home and at school. However, not all parents or adults may be educated or equipped to properly communicate about health,

given the national limited health literacy rate is 36% (Kutner et al., 2006). Although our sample had much smaller limited health literacy (17%), our demographics were not representative of a national sample, therefore adolescents may need to consider the validity of their health information source, even if their source is a parent, to ensure the accuracy of information. This is especially important due to the impact that family communication can have on health attitudes and behaviors. If adolescents are receiving inaccurate information from parents and using that as the foundation for their attitudes and behaviors, they may not experience the positive health benefits of family communication. Further, adolescents should have the skills and motivation to further confirm health information received from trusted sources because despite being trusted by the teens, these sources may not be trustworthy in terms of ability to deliver accurate health information.

Our study found that adolescents did not seek to validate information from sources they considered trustworthy. This was illustrated in this teen's response: "Usually with people I trust...my parents... my health teacher or someone I know who knows the material. Or just like my parents that I know wouldn't lie about it" (*Sally*). On the other hand, when we inquired as to how participants gaged the reliability of their health information sources, adults reported methods of consensus describing seeking confirmation from multiple sources to confirm information accuracy. Research suggests that educating teens on how to identify and utilize credible information sources has been shown to increase the level of adolescent health literacy (Ghaddar, Valerio, Garcia & Hansen, 2012), which may in turn provide additional lifelong health benefits. Our findings support these results and further support the need for more education for adolescents about how to evaluate and confirm health information, regardless of the source.

The ease or challenges of family health communication were perceived differently between the adults and adolescents in our study. Adults were more apt to recall negative or challenging family health communications, where the teens reported health communications and interactions more positively. Communicating about health topics such as puberty, sexuality, substance use, or even diet and exercise can be challenging for families as parents and adolescent need to consider the accuracy of topic information while navigating privacy and motivation concerns around these conversations that are often awkward or uncomfortable (Ebersole & Hernandez, 2016). Both parents and teenagers often dread difficult conversations, most of about intimate topics. Emotionally charged conversations filled with uncertainty are the essence of “difficult conversations” (Browning, Meyer, Truog & Solomon, 2007). Previous qualitative studies have examined difficult family conversations about such topics as a child’s sexual orientation, job decisions or romantic relationships (Keating et al., 2013). Although extensive and frequent communication between parents and adolescents about sex has shown delayed engagement in sexual activity and decreased risky sexual behaviors in adolescents (Guilamo-Ramos et al., 2012; Silk & Romero, 2013), parents often avoid such challenging conversations due to discomfort, poor knowledge or general communication issues with their adolescent children (Jerman & Constantine, 2010). This research was partially supported through our study, as adults often recounted feelings of awkwardness in communication or perceived embarrassment of their teen as illustrated in these adult descriptions of difficult conversations, most often about sex: “they really get obviously embarrassed about it; they don’t want to talk about it” (*Amy*); “I am not comfortable and I know he isn’t comfortable with it” (*Mary*). Even with this being the case, adults and teens in our study continued to have these conversations within their families suggesting that, as other research has suggested, even when a conversation

is viewed as difficult and may result in negative consequences, such as anger or disappointment; parents and teens still perceived difficult conversations as beneficial, resulting in a stronger relationship through increased trust, communication and understanding (Keating et al., 2013).

Implications for Practice

Findings from our study suggest clinicians working with families should provide adults and teens with more than health education but also with suggestions of appropriate resources for where adults or teens could seek additional health information independently. Providers should also consider educating these families on how to evaluate the reliability or validity of health education sources since our study findings suggest adults are relying more heavily on the internet and teens are relying on trusted adults for health information which may or may not be reliable health information sources. Our study suggests these adults and teens are communicating about health within their families despite perceived embarrassment or negativity. Healthcare providers that care for adults and teens should reinforce and encourage this kind of open communication within families to further support this type of shared communication about health topics and lifestyle choices. In addition, practitioners should consider providing support around the development of effective communication skills within the family unit. Our implications are supported in the literature by the results of a recent qualitative study of 91 parent-adolescent dyads which concluded that both parents and adolescents want healthcare providers to help them learn about, and communicate about health (Ford et al., 2016). Our study confirmed that family health communication is happening within health literate families related to a range of topics. While participants perceived conversations as successful, success was related to comfort level and lack of negative emotions. We did not explore the actual efficacy of these conversations, nor did we observe the interactions during these conversations. Supporting effective family health

communication can benefit both parents/guardians and adolescents and may further support positive health outcomes.

Limitations

We utilized a convenient sample of parents and adolescents recruited from one high school in Massachusetts and our sample was homogeneous in relation to race, sex and education; therefore, themes that emerged from our study may not be found in other samples. However, due to the qualitative nature of this study, results were not intended to be generalizable, rather the goal was to better understand the experiences of participants. Nonetheless, our resultant sample is limited in diversity suggesting that more qualitative research should be concluded within different populations to gain a deeper understanding of health literacy and family health communication. We only included one method to establish the credibility of the data (multiple analyst), including additional methods could have further supported the validity and credibility of the data. Bias is always a potential limitation in qualitative research. We attempted to address this through independent analysis by the first and second author who come from different professional backgrounds. Despite these limitations, this study provided valuable insight into family health communication.

Conclusion

Health literacy and family health communication each play a role in the development of health-related attitudes and behaviors. This study is one step toward exploring and understanding family communication within the broader context of health literacy. Results from our study suggest that within families with adequate health literacy, health communication is occurring related to topics of interest to adolescents. Further, we found that these conversations persist

despite adult perceptions of these conversations being negative. In addition, we found that adolescents rely on trusted sources, including parents, for their health information and that they didn't seek to further validate or evaluate the health information received. This study confirmed current findings relating to family health communication but also added to the literature by examining the construct of health literacy and its possible role in family health communication, and by raising areas for future research to further explore the impact of health literacy on family health communication.

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