Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____ _____

Merete Tschokert Date

Assessing Positive Youth Development of the Youth Board of the Atlanta Youth Research Coalition

By

Merete Tschokert

MPH

Behavioral Sciences and Health Education

Jessica M. Sales, PhD

Committee Chair

Michelle C. Kegler, DrPH, MPH

Committee Member

Colleen McBride, PhD

Department Chair

Assessing Positive Youth Development of the Youth Board of the Atlanta Youth Research Coalition

By

Merete Tschokert

Magistra der Pharmazie

University of Vienna

2015

Thesis Committee Chair: Jessica M. Sales, PhD

An abstract of

A thesis submitted to the Faculty of the

Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of

Master of Public Health

in Behavioral Sciences and Health Education

2018

Abstract

Assessing Positive Youth Development of the Youth Board of the Atlanta Youth Research Coalition

By Merete Tschokert

Adolescence is a time of rapid change and leaves adolescents vulnerable for adverse health outcomes. Compared to their white peers, African-American adolescents are at higher risk for negative health outcomes. To address these disparities, young people should be included as equal partners in research to conduct youth relevant research and establish tailored interventions. The Atlanta Youth Research Coalition (AYRC) is a Community-Based Participatory Research (CBPR) project with a Youth-Adult Partnership. It was established to enable African-American high school students from the Atlanta Metro area to conduct their own community assessment with support from an Adult Advisory Board consisting of professionals who work in the healthcare field or with adolescents. AYRC had 12 youth participants and 7 adult participants. The project used the 5 Cs of Positive Youth Development (PYD) according to Lerner et al. as its framework. Promoting Character, Confidence, Caring, Competence, and Connection will result in the 6th C, Contribution, and a successful transition into adulthood. The goal of this work was to evaluate how participation in the project promoted the 5 Cs. Furthermore, the Adult-Youth Partnership component and change in young people's perception of health-related research was evaluated. This work used a mixed methods approach and used validated scales and qualitative interviews to assess changes in young people's development and perceptions. Results from the SHORT PYD Scale showed a non-significant increase in Confidence. Connection decreased significantly. Character, Competence, and Caring did not change significantly. Nevertheless, feedback during the qualitative interviews suggests that the young people thrived throughout the project, their 5 Cs were promoted, and even the 6th C, Contribution, was supported through the project. Trust in Researchers Scale scores increased significantly, but Medical Mistrust Index scores did not significantly change. The Youth-Adult Partnership scores were high and hence, suggest that the project could enable supportive adult relationships and included the Youth Board in decision making. This was supported by the qualitative interviews. In conclusion, AYRC demonstrated how African-American high school students from the Atlanta Metro area can be included as research partners in a CBPR project. Furthermore, young people benefited from participating in the project and expanding the project is encouraged to make it sustainable and positively impact more youth.

Assessing Positive Youth Development of the Youth Board of the Atlanta Youth Research Coalition

By

Merete Tschokert

Magistra der Pharmazie

University of Vienna

2015

Thesis Committee Chair: Jessica M. Sales, PhD

A thesis submitted to the Faculty of the

Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of

Master of Public Health

in Behavioral Sciences and Health Education

2018

Acknowledgments

The author would like to thank Dr. Sales for her advice and feedback throughout the project and the opportunity to work on the Atlanta Youth Research Coalition project. Furthermore, the author wants to thank Dr. Kegler for being on the thesis committee and part of this project.

The author wants to thank the whole Atlanta Youth Research Coalition AYRC Support Team for their constant encouragement and assistance. Their help made it possible to write this work. Thank you, Ashley, Erin, Ilyssa, Kenyana, Leah, and Dr. Sales.

Furthermore, the author wants to thank the participants of the Atlanta Youth Research Coalition for taking time to conduct interviews and taking the surveys.

Table of Content

1 Introduction

Adolescence is the second most vulnerable time after early child development during the life course. During this time, rapid biological and psychological changes occur, which leave adolescents vulnerable to adverse health effects such as becoming overweight and obese or acquiring an STI (Alberga, Sigal, Goldfield, Prud'homme, & Kenny, 2012; Dumontheil, 2016; Viner et al., 2012). Minorities, like African-American young people, may face additional social challenges as adolescents, such as experiences with racism and micro-aggressions, which occur in addition to the normal challenges adolescents experience during this life stage. Furthermore, other adverse factors can affect development during adolescence for African-Americans. African-American adolescents are more likely to grow up in disadvantaged neighborhoods. This puts them at additional risk for adverse health outcomes like teen parenthood (Acevedo-Garcia, Osypuk, McArdle, & Williams, 2008; Kershaw et al., 2011; National Research & Institute of Medicine Committee on Integrating the Science of Early Childhood, 2000). Hence, African-American young people are especially vulnerable during this time and experience more health disparities in comparison with their white peers (e.g. teen pregnancy, elevated stress levels, HIV, obesity, asthma, type 2 diabetes) (Brody, Yu, Miller, & Chen, 2015; CDC, 2011; Evans-Agnew, 2016; Israel et al., 2006; Mayer-Davis et al., 2017; Miller et al., 2009; National Academies of Sciences & Medicine, 2017; Price, Khubchandani, McKinney, & Braun, 2013; Reagan, Salsberry, Fang, Gardner, & Pajer, 2012; Skinner, Ravanbakht, Skelton, Perrin, & Armstrong, 2018; Xia, Stone, Hoffman, & Klappa, 2016).

To develop targeted and effective interventions for African-American young people, Community-Based Participatory Research (CBPR) can be used to involve African-American youth to design novel approaches and programs in cooperation

with researchers (Coughlin & Smith, 2016; Jackson, Mullis, & Hughes, 2010; Lightfoot et al., 2014). CBPR builds on the strengths and resources of the community. Throughout the whole research and dissemination process, a collaborative partnership is established between all involved parties. Thus, CBPR is a co-learning and empowering process that can be used to include young people in research (Israel, Schulz, Parker, & Becker, 1998). The Atlanta Youth Research Coalition (AYRC) is a CBPR project with African-American high school students from the Atlanta Metro area. This project aims to include adolescents in research through making them research partners. To achieve this goal, young people conducted their own community assessment. The project is divided into three phases: preparation, implementation and dissemination.

During preparation, the Youth Board (African-American 13 to17-year-olds from the Atlanta Metro area) attended weekly 2-hour-long research trainings. Every few weeks they met with the Adult Advisory Board, a group of 7-10 adults who work in the healthcare field or with adolescents. The Youth Board regularly shared their work with the Adult Advisory Board and received feedback on their progress. During implementation, the Youth Board implemented their community assessment, which involved identifying a community, a health topic, conducting a literature review, developing data collection instruments, collecting data, analyzing the data, and writing their final report. During dissemination, the young people learned how to share their findings and presented their outcome to various stakeholders. To provide expert guidance for the young people with their community assessment, a researcher was identified to partner with them. The researcher became involved in the middle of the implementation phase, after the young people had identified their community and health topic.

This analysis examines the development of the Youth Board before the researcher was introduced to the project. To evaluate if the project had a positive effect on the participating young people, the 5 Cs model of the framework of Positive Youth Development (PYD) was used. The 5 Cs model consists of Competence, Confidence, Connection, Character and Caring (Lerner et al., 2005b). The project promotes the 5 Cs through several ways, such as research trainings (competence), facilitating joint meetings with the Adult Advisory Board (confidence, connection), presenting results in front of the Adult Advisory Board and other stakeholders (confidence), working together with other young people (connection), literature research about sexual health education in Georgia (competence, character, caring), conducting surveys (competence, confidence, caring) and explaining their work to a researcher in the field (connection, confidence). The goal of this analysis is to determine if the young people thrived and improved their 5 Cs at the mid-point of participation in AYRC.

2 Literature review

2.1 Adolescent Health

Adolescence is a time of transition from childhood to adulthood, and is most commonly defined as beginning at the onset of puberty and ending when the young person transitions into an independent social-role in the society (Dumontheil, 2016; Sawyer et al., 2012). The timing and the length of adolescence has changed over time and varies between cultures and the end of adolescence is less distinct than in former times (Dumontheil, 2016; Sawyer et al., 2012). Since the mid-20th century the biological transition occurs earlier than psychological transition, which results in a mismatch of those two. Since then the gap has even widened; therefore, the time

period of adolescence is longer than in any other time period before us (Gluckman & Hanson, 2006; Patton & Viner, 2007).

Adolescence is a second sensitive development period after early childhood in the life-course of a person (Viner et al., 2012). During this time, biological and psychological changes occur, especially brain development, which leads to adoption of new behaviors (Dumontheil, 2016; Viner et al., 2012). One major difference between childhood and adolescence is that adolescents themselves have increasing autonomy and can choose what they experience and with whom. For example, time with friends may increase, while time with family may decrease during this period (Fuhrmann, Knoll, & Blakemore, 2015; Larson & Richards, 1991). However, this time of transition leaves adolescents vulnerable for adverse health outcomes, which can have a great impact on their development and thus, on their adult life. For example, changes in body composition, insulin sensitivity, physical activity, sedentary and diet behaviors, and psychological issues increase risk of becoming overweight and sustaining obesity in adulthood (Alberga et al., 2012). Due to ongoing brain development, adolescence is also a sensitive period for memory, effects of stress on mental health, and effects of drug use (Fuhrmann et al., 2015). Notably, 50% of all lifetime *DSM-IV* anxiety, impulse-control, and substance use disorders start before the age of 14 and 75% start before the age of 24 (Kessler et al., 2005).

Health and well-being during adolescence has a great impact on their development and thus, on their adult life. Adolescence is therefore a crucial time for targeted health interventions as young people during this period learn new behaviors, which can have an influence on their lifelong health. For example, nicotine dependence, depression, and parental factors during adolescence contribute to poor health in early adulthood (Griesler, Hu, & Kandel, 2016). On the other side, smoking

prevention during adolescence reduces daily smokers in young adulthood. On the population level, smoking prevention during adolescence would have a big impact. For example, a hypothetical 1%-point reduction in the prevalence of ever smoking adolescents in the U.S. would lead to a decrease of lifetime medical care costs by $1.2 billion (2010) and an increase of lifetime quality-adjusted life years by 98,590 years (Wang & Michael, 2015). Thus, positive and negative influences during adolescence have a great impact on the adolescent's health.

Additionally, adolescents face a series of health risks due to their physical and mental development and changes in their behavior. For example, young people aged 15-24 years old account for nearly half of new sexually transmitted infections (STIs) and, although at its lowest point in 80 years, the pregnancy rate for 15–19-year-olds in the U.S. was 43 per 1,000 women in 2013 (Kost, Maddow-Zimet, & Arpaia, 2017; Satterwhite et al., 2013). Georgia has an especially high teen birth rate; in 2015, the teen birth rate in Georgia was 25.6 births per 1,000 girls in 2015, which puts Georgia 33th in comparison to other U.S. states (Martin, Hamilton, Osterman, Driscoll, & Mathews, 2017). Teen pregnancy can also affect other aspects of adolescents' lives. For example, teen mothers have 1.9-2.2 fewer years of education in comparison to women who delay their first birth at least until age 30 (Hofferth, Reid, & Mott, 2001). This not only has adverse health effects on young people, but also is a financial burden to society. Although teen pregnancy and birth rates are declining, Georgia spent $395 million on teen childbearing in 2010 (Power to Decide, 2017). Good physical and psychological well-being during adolescence has a positive effect on education attainment, enrollment in higher education, household income, perceived general health, and fewer risky health behaviors in young adulthood (Brekke, 2015; Callander, 2016; Hoyt, Chase-Lansdale, McDade, & Adam, 2012). Furthermore,

quality of peer and parental relationships at age 16 predicts adult mental and functional somatic health at age 42, 26 years later (Landstedt, Hammarstrom, & Winefield, 2015).

2.2 Health Disparities among African-American Youth

African-American youth still face health disparities in comparison to their white peers in regards to healthcare access and health outcomes (e.g. teen pregnancy, elevated stress levels, HIV, obesity, asthma, type 2 diabetes) (Brody et al., 2015; CDC, 2011; Evans-Agnew, 2016; Israel et al., 2006; Mayer-Davis et al., 2017; Miller et al., 2009; National Academies of Sciences & Medicine, 2017; Price et al., 2013; Reagan et al., 2012; Skinner et al., 2018; Xia et al., 2016). Furthermore, prevalence of overweight, obesity, and type 2 diabetes increased over the last decades among African-American adolescents faster than among their white counterparts (Mayer-Davis et al., 2017; Skinner et al., 2018).

Not only is race of importance when it comes to health disparities, but also the neighborhoods in which young people live. Socioeconomically deprived neighborhoods are associated with poor health outcomes (Eibich, Krekel, Demuth, & Wagner, 2016; Israel et al., 2006; Jokela, 2015). African-American adolescents are more likely to grow up in disadvantaged neighborhoods due to historically racially-segregated neighborhoods which puts them at additional risk for adverse health outcomes and obstacles to early childhood development (Acevedo-Garcia et al., 2008; Kershaw et al., 2011; National Research & Institute of Medicine Committee on Integrating the Science of Early Childhood, 2000). For example, studies showed risk for marijuana use increased with community violence exposure, higher perceived neighborhood disorder, drug activity and sales in the neighborhood for African-American male high school students and less neighborhood social interaction was

associated with higher Body Mass Index (BMI) in African-Americans (Reboussin, Green, Milam, Furr-Holden, & Ialongo, 2014) (McDaniel, Wilson, Coulon, Hand, & Siceloff, 2015). On the other hand, growing up in a predominantly white neighborhood can put African-American adolescents at risk to develop depression (English, Lambert, Evans, & Zonderman, 2014; Wight, Aneshensel, Botticello, & Sepulveda, 2005).

Hence, African-American adolescents often face health disparities due to their age, race, and neighborhood. This puts them at increased risk for adverse health outcomes. Thus, tailored interventions are needed to tackle these health disparities. CBPR is often used to empower marginalized groups to tailor research to their living reality (Malone, Yerger, McGruder, & Froelicher, 2006; Xia et al., 2016). Through participating in CBPR young African-Americans can shape research which will result in better tailored health interventions addressing health disparities in their community. Hence, in a CBPR project African-American young people are given the appropriate tools and evidence-based information to facilitate the change in their community themselves and thus, they are not passive recipients, but rather active change-makers.

2.3 Community-Based Participatory Research

Young people are often not included in the planning and implementation of the research that is targeted towards them. A method that involves a high level of participation of the community is CBPR, which involves a partnership between researchers and the community. This approach is recommended by the National Academics of Sciences, Engineering & Medicine which promotes multidisciplinary research teams with non-academics to identify and combat health disparities and biases (2017).

CBPR can be used to find the right research questions and develop health interventions. Using CBPR ensures that the resulting research questions are of local importance and address a relevant concern to the community (Izumi et al., 2013; Leung, Yen, & Minkler, 2004; Mosavel, Simon, van Stade, & Buchbinder, 2005). For example, CBPR was used to define Positive Youth Development program goals with youth and parents in an economically disadvantaged, urban predominantly Latino community (Oscós-Sánchez, Lesser, & Oscós-Flores, 2017).

Results from CBPR studies have greater potential to be considered by community members and foster change within the community because they are included in the decision making and have established trust with the researchers (Holzer, Ellis, & Merritt, 2014; Salimi et al., 2012; Vaughn, Wagner, & Jacquez, 2013). Being part of the research increases ownership, which can lead to an enhanced interest in using the research findings. Nevertheless, risks exist in that the research outcomes may not be what the community anticipated and tension about publication of the findings and actions to move forward can arise (Minkler, 2004). Thus, these issues must be addressed and discussed during the planning process.

CBPR can be used with young people to address health problems in their age group, because young people best know what is needed for their community (Holliday, Wynne, Katz, Ford, & Barbosa-Leiker, 2016; Farrah Jacquez, Vaughn, & Wagner, 2013b; Kia-Keating, Santacrose, Liu, & Adams, 2017; LoIacono Merves, Rodgers, Silver, Sclafane, & Bauman, 2015; Monson & Thurley, 2011). Furthermore, as stated in Article 12 of the UN Convention on the Rights of the Child, children have the right to express their opinion and their view has to be taken into account depending on the development of the child (UN General Assembly, 1989). CBPR is a favorable way to engage young adults in research and shape research. It is very

unlikely that researchers can capture the youth perspective on their own and even less likely that the research will be accepted by youth (F. Jacquez, Vaughn, & Wagner, 2013a). Hence, including youth in research not only gives them the opportunity to state their concerns, but also is essential to conduct research that will have the necessary impact on and relevance for the life of young people. Otherwise researchers have to rely on societal beliefs or their own assumptions about youth (Langhout & Thomas, 2010).

Using CBPR with children and young people is still rare and more research has been conducted about them than with them (Langhout & Thomas, 2010). However, CBPR has been successfully applied in program planning and informing health policy with young people (Akiva, Cortina, & Smith, 2014; Percy-Smith, 2007; Simovska, 2007; Villa-Torres & Svanemyr, 2015). Despite the evident benefits of engaging young people in CBPR, working with young people can also entail special challenges. LoIacono identified four key components when using CBPR with young people: (1) developmental needs and capacities, (2) limited autonomy and independence, (3) limited experience in decision making and (4) "aging out" (LoIacono Merves et al., 2015). Young people's developmental needs and capacities must be acknowledged. CBPR can be slow-paced, sedentary, and process-oriented. Limited autonomy and independence can impact young people's commitment, as they may not have control over their own time. This can lead to participation difficulties which can be avoided through helping others directly, creative scheduling (meetings on the weekend), and monetary incentives (Brown, Redelfs, Taylor, & Messer, 2015). Limited experience in decision-making is of utmost importance as co-decision making is one of the key components of CBPR; hence, improving decision making skills has to be a priority. "Age out" describes that when health interventions based on the

conducted research is implemented the young people may already be adults. The effect could be mitigated through emphasizing how youth participation helps their community and how young people can acquire valuable skills themselves through participating in CBPR. These four components have must be acknowledged by the researcher and the design of the project mitigate these challenges to promote youth engagement in CBPR projects. Nevertheless, benefits like well-being and health have been associated with participation in decision making (John-Akinola & Nic-Gabhainn, 2014).

CBPR has the advantage that the community is actively involved and hence, trust between researchers and the community can be built. Medical and research mistrust among African-American is still a concern and results in less research participation and adverse health outcomes (Bogart et al., 2016; Cuevas, O'Brien, & Saha, 2016; Hammond, 2010; Jacobs et al., 2011; Lang et al., 2013; McDavitt et al., 2016; Veinot, Campbell, Kruger, & Grodzinski, 2013; Zeldin, Krauss, Collura, Lucchesi, & Sulaiman, 2014). Through working together with researchers and conducting their own research, young people's trust in medical care and researchers can increase.

2.4 Positive Youth Development

CBPR with young people can only be successful if young people are seen as resourceful and as partners. Historically that was not always the case. At the beginning of the 1990's, the view on youth shifted. Before that time, adolescents were seen as problems to be managed and their development as overcoming deficits. This changed to seeing the strengths of youth and their positive qualities (Bowers et al., 2010; Lerner, 2005; Lerner, Almerigi, Theokas, & Lerner, 2005a). Thus, reducing

problem behaviors was not enough anymore. The new, positive concepts had the goal to let young people thrive (Lerner, 2004).

The new view brought new vocabulary with it and the new framework *Positive Youth Development* (PYD) emerged (Lerner et al., 2005a). PYD has the underlying assumption that all young people have strengths, and great potential for change (Lerner, 2005). According to Lerner et al., "PYD emerges when the potential plasticity of human development is aligned with developmental assets" (2005a, p. 10). Developmental assets can be found in the social and physical ecology of the young people. Through alignment between resources for healthy development with the strengths of youth over time, PYD can be promoted (Lerner, 2005; Lerner et al., 2009).

How many developmental assets (individual or social) exist is a controversy in the literature. There is also debate over whether developmental assets should be measured through self-perception (e.g., interviews with youth) or be objectively assessed measures (e.g., surveys with validated scales). Theokas and Lerner objectively assessed how four ecological assets in key contexts of adolescent development – family, school, and neighborhood—impacted youth: (1) other individuals like parents and teachers, (2) institutions like after-school programs, (3) collective activity like youth working together with adults, (4) access like transportation to out-of-school-time activities. Other individuals had the biggest impact on the youth (Lerner et al., 2009; Theokas & Lerner, 2006).

Nevertheless, quantity of assets does not automatically predict PYD. Focusing on a key domain of developmental assets seems to be more successful in promoting PYD. According to Lerner, effective PYD programs have three components: (1) opportunity for youth participation in and leadership of activities, (2) development of

life skills, and (3) a sustained and caring adult-youth partnership (Lerner, 2004; Lerner et al., 2009). It is therefore important for young people to have the opportunity to participate in and shape after-school programs together with adults.

The origin of the PYD perspective has many roots in academic research, the voices of youth workers, discussions of national policies, and in new funding opportunities to promote the healthy development of youth and families (Lerner et al., 2005a). PYD programs have been researched for decades, but a definitive definition of PYD has only recently emerged (Catalano, Gavin, & Markham, 2010). Hence, PYD can have different constructs depending upon how it is being defined.

Kara Dukakis, London, McLaughlin, and Williamson (2009) tried to identify indicator themes for PYD from the published literature on the individual-level, setting-level and system-level. Individual-level indicators include Connectedness, Hope, and Efficacy. Setting-level indicators are Opportunities and support for participation, Relationships, Intentional pathways, Professional capacity of an organization, and Opportunities for youth leadership. System-level indicators included Formal commitments to a youth development approach, Strategies to sustain an initiative or policy agenda, Incentives to encourage incorporation of youth development principles, Opportunities for youth engagement, and Accountability for positive youth development outcomes and supports (Kara Dukakis et al., 2009). Hence, PYD programs focus not only on individual development, but also on how the surroundings can be used to promote thriving.

Different PYD frameworks are used in research and for evaluation purposes. PYD is used to develop health interventions for adolescents. Topics for which PYD has been used include alcohol abuse and sexual and reproductive rights (Catalano et al., 2010; Ciocanel, Power, Eriksen, & Gillings, 2017; Lewis et al., 2016; Luk et al.,

2011). The outcomes of PYD interventions have been mostly successful. Commonly used and validated frameworks used to develop PYD programs include Targeting Life Skills, Assets, and The Five Cs (Heck & Subramaniam, 2009).

Targeting Life Skills consists of 35 life skills divided into Heart, Hand, Head, and Health. The four categories are additionally divided into two sets; Heart is divided into relating and caring, Hand consists of giving and working, Head includes managing and thinking, and Health is divided into living and being (Hendricks, 1996). The model has been used widely in evaluating 4-H programs, especially assessing leadership skills acquired from youth participants (Heck & Subramaniam, 2009).

The Search Institute has identified 40 positive assets for young people to thrive (The Developmental Assets® Framework) which can be divided into external and internal assets. External assets are subdivided into Support, Empowerment, Boundaries and expectations, and Constructive use of time. Internal assets are categorized into Commitment to learning, Positive values, Social competencies, and Positive identity (Heck & Subramaniam, 2009; Search Institute, 1997).

Researchers have developed and validated shorter scales based on The Developmental Assets® Framework. For example, Oman et al. uses 17 youth asset constructs like use of time, general self-confidence, relationship with mother, relationship with father, and nonparental adult role models. A 61-item survey was established to measure these assets (Oman et al., 2002; Oman, Vesely, Tolma, Aspy, & Marshall, 2010). Youth assets were associated with reduced risk for initiation of sexual intercourse, increased use of birth control at last sex, reduced risk for pregnancy, nonuse of alcohol, and nonuse of drugs (Oman et al., 2004; Oman et al., 2013).

The most empirically supported PYD model is the 5 Cs (Heck & Subramaniam, 2009). The 5 Cs of PYD are Character, Competence, Caring, Connection, and Confidence (Hershberg, DeSouza, Warren, Lerner, & Lerner, 2014; Lerner et al., 2005b). Each one of the Cs represents a cluster of behaviors which can be promoted through PYD programs. It is theorized that these five characteristics enable a young person to make an optimal transition to adulthood and thrive. Through this process, the person will make contributions to themselves, to family and community, and to civic life. Hence, the person will develop a "6th C": Contribution (Lerner, 2004).

5 Cs	Definition
Character	Respect for societal and cultural rules, possession of standards for correct behaviors, a sense of right and wrong (morality), and integrity.
Competence	Positive view of one's actions in domain specific areas including social, academic, cognitive, and vocational. Social competence pertains to interpersonal skills (e.g., conflict resolution). Cognitive competence pertains to cognitive abilities (e.g., decision making). School grades, attendance, and test scores are part of academic competence. Vocational competence involves work habits and career choice explorations.
Caring	A sense of sympathy and empathy for others.
Connection	Positive bonds with people and institutions that are reflected in bidirectional exchanges between the individual and peers, family, school, and community in which both parties contribute to the relationship.
Confidence	An internal sense of overall positive self-worth and self-efficacy; one's global self-regard, as opposed to domain specific beliefs.

Table 1: 5 Cs of PYD (Lerner et al., 2005b)

The thriving process is the growth over time of functionally valued behaviors (5 C's: Character, Competence, Caring, Connection, and Confidence) across development. It is influenced by individual and contextual interactions. The presence of these relations indicates a young person's overall well-being. Over time, the valued behaviors will result in multiple contributions (self, family, community, and civil society) and idealized personhood (Lerner, 2004) and can lead to improved health. In

fact, high scores in the 5 Cs of PYD have been associated with higher self-regulation, higher level of contribution, lower depression and lower engagement in risk behaviors like substance use (Gestsdottir & Lerner, 2007; Jelicic, Bobek, Phelps, Lerner, & Lerner, 2007).

2.5 Positive Youth Development and the Atlanta Youth Research Coalition

PYD can be enhanced through aligning the strengths of young people with activities of PYD interventions and other resources like families, schools and the broader community (Lerner et al., 2014). Therefore, the Atlanta Youth Research Coalition (AYRC) promoted the 5 Cs of PYD through a CBPR project. CBPR is based on the assumption that community members – in the case of AYRC, youth participants – have a deep knowledge about their environment and are experts on their life situation. Hence, utilizing the strengths of a CBPR approach to improve the health of the adolescent community has the potential to result in increased PYD.

Teaching the Youth Board about research and having them conduct a community assessment themselves, might enhance Competence. Furthermore, Competence can be supported through fostering decision-making abilities like choosing the community and topic for the community assessment. Confidence can be promoted through self-efficacy; for example, getting feedback from the Adult Advisory Board might enhance self-efficacy and hence, confidence. Through working on a public health topic, Caring can be supported. Furthermore, through working together with adults, a possession of standards for correct behavior can be obtained which will influence Character (Geldhof et al., 2014b; Lerner et al., 2005b).

Until now, the effect of youth participation and decision making on program development was mostly evaluated by the quality and acceptance of the developed programs; the effect of participation in the program itself was mostly neglected

(Akiva et al., 2014; Holliday et al., 2016; Izumi et al., 2013; Kia-Keating et al., 2017; Monson & Thurley, 2011). CBPR is based on both participation and co-decision making. Through participating in CBPR, the 5 Cs should be enhanced.

The project gives the Youth Board the opportunity to engage in their own research project. AYRC provides all three of the most important qualities of pathways for youth civic engagement according to Camino & Zeldin (2002): Ownership, Facilitative Policies and Structures and Youth-Adult Partnership. AYRC, being a CBPR project, emphasizes that young people have the possibility to shape the project as they want (ownership). The Youth Board had the opportunity to determine the topic and community for their community assessment themselves. Through the project itself, policies and structures were in place to support young people in their participation. Youth-Adult Partnership was a major part of the project. Not only did the young people engage with the team, but they had an Adult Advisory Board and received assistance from a researcher.

2.6 Youth-Adult Partnership

Zeldin defined Youth-Adult Partnership (Y-AP) as follows: "*Youth-adult partnership is the practice of: (a) multiple youth and multiple adults deliberating and acting together, (b) in a collective [democratic] fashion (c) over a sustained period of time, (d) through shared work, (e) intended to promote social justice, strengthen an organization and/or affirmatively address a community issue."* (Zeldin, Christens, & Powers, 2013, p. 388). Zeldin identified three themes of Y-AP: (1) youth partnership is a collective construct, (2) due to isolation and power imbalance, social justice movements were not age inclusive, and (3) strong Y-APs with shared power and joint work will result in a positive outcome (2013). In Zeldin's definition, it is stated that youth and adults work together and share work. It is noteworthy to mention that for a

Y-AP, multiple youth and adults work together and share work. Hence, research projects with one young person as an expert or a youth advisory committee without an Adult Advisory Board are not considered as Y-AP.

Youth-driven participation enhances PYD. Nevertheless, the full burden of empowering themselves and their community cannot lie on the shoulders of children and youth alone; adults have to share the responsibility (Wong, Zimmerman, & Parker, 2010). Shared decision-making and shared power is a key component of CBPR (Kraemer Diaz, Spears Johnson, & Arcury, 2015; LoIacono Merves et al., 2015; Minkler, 2004). Hierarchical structures between the researcher and the community need to be dismissed to ensure co-decision making (Kraemer Diaz et al., 2015; Minkler, 2004; Wong et al., 2010). Hence, youth and researchers have to meet each other on a level playing field.

Mutual respect is a key component of the relationship between youth and researchers during CBPR. Youth should not be seen as vessel to inform research, but as equal partners (Wong et al., 2010). Furthermore, opinions of youth have to be taken into consideration; even, if young people challenge the status quo and adults' roles and perspectives (Langhout & Thomas, 2010).

Additionally, Y-AP increases civic engagement and promotes PYD, especially socio-emotional domains of confidence, mastery and connectedness (Zeldin et al., 2013; Zeldin et al., 2014). Hence, PYD will be advanced through the research trainings, working in areas of adolescents' expertise and Y-AP. The combination of Y-AP and CBPR should have a positive effect on PYD.

To summarize the role of PYD and Y-AP in the AYRC project, young African-Americans were chosen as the community due to persistent health disparities.

This population would benefit from further research and interventions the most. Furthermore, the age group was chosen, because research about teenagers is often not informed by teenagers. This program will enable young African-Americans to steer the researchers in the right direction and tailor research to their needs. Nevertheless, the positive effects of participating youth are important to know. Young people should not be exploited for their expertise and should benefit from participating.

Based on the literature, we developed the following research question:

Do the 5 Cs of Positive Youth Development among African-American high school students of the Metro Atlanta area improve through participating in the Atlanta Youth Research Coalition, a Community-Based Participatory Research project with a Youth-Adult Partnership?

Sub-Questions:

1. *How do youth participants perceive the Youth-Adult Partnership of the Atlanta Youth Research Coalition?*
2. *Do youth participants' perception of health-related research change through participating in the Atlanta Youth Research Coalition, a Community-Based Participatory Research project with a Youth-Adult Partnership?*

3 Methods

To measure the effects of the program, a Pre-Post-Test Design was chosen. Surveys were administered at baseline and 8 months after at the program's mid-point. To evaluate changes in the 5 Cs, the SHORT PYD questionnaire was used (Bowers et al., 2010; Lerner et al., 2005b). To distinguish the program's influences on the 5 Cs from external influences, semi-structured qualitative interviews were conducted with

the Youth Board members. Additionally, the interviews were used to gain in-depth feedback about the importance of the project.

To evaluate a sustained and caring youth-adult partnership and opportunity for youth participation in and leadership of activities, which are two features of the Big Three features of youth development programs according to Lerner et al., the Youth-Adult Partnership (Y-AP) scale was used at the mid-point evaluation (Lerner, 2004; Lerner et al., 2009; Zeldin et al., 2014).

Changes in perception of health-related research was assessed through qualitative interviews, and the scales Trust in Medical Researchers and Medical Mistrust Index through a Pre-Post-Test design (LaVeist, Isaac, & Williams, 2009; Mainous, Smith, Geesey, & Tilley, 2006).

3.1 Program Description

The Atlanta Youth Research Coalition (AYRC) is a CBPR project with African-American 13 to17-year-old adolescents from the Atlanta Metro area. The PCORI (Patient-Centered Outcomes Research Institute) funded project, under the lead of Jessica M. Sales, PhD, aims to include adolescents in research through making them research partners. To achieve this goal, young people conducted their own community assessment about the sexual health education of Fulton County high school students.

The project can be divided into three phases: preparation, implementation and dissemination. The Youth Board started meeting in February 2017, and met each Sunday for a 2-hour long meeting. During the summer, meetings were conducted less frequently. During the first session, the Youth Board filled out the Pre-Survey. After a few weeks of teambuilding with the Youth Board, the research trainings began. The trainings included topics like ethics in research, different kinds of research studies,

and roles in research. The goals of the trainings were to prepare the young people with necessary knowledge about health-related research and skills to conduct research to foster a research partnership with the Adult Advisory Board. Furthermore, many activities allowed participants opportunities to acquire hands-on research experience, such as conducting an observation at Piedmont Park in Atlanta, GA and meeting Stephanie R. Addison-Holt, MD, an African-American Adolescent Medicine Physician at Children's Healthcare of Atlanta (CHOA). Outside, voluntary activities included visiting the David J. Sencer CDC Museum at the U.S. Centers for Disease Control and Prevention and attending the Population, Reproductive and Sexual Health (PRSH) Adolescent Task Force Social reception during the annual American Public Health Association (APHA) meeting. Every few weeks they met with the Adult Advisory Board, a group of 7-10 adults who work professionally in healthcare or with adolescents. The Youth Board regularly reported their progress to the Adult Advisory Board and received feedback from them. The preparation phase lasted 7 months.

During implementation, the Youth Board implemented their own community assessment, which involved literature research, identifying a community and a health topic, data collection, data analysis and report writing. After choosing sex education of Fulton County high school students as their community assessment topic, a researcher in the field was chosen to support their efforts. Dr. Andrea Swartzendruber was selected due to her expertise in the field. Before Dr. Swartzendruber was introduced to the group, a mid-point assessment was conducted. It included all questionnaires from the Pre-Survey. Furthermore, it included open-ended questions for the young people to give feedback on the project and the Youth-Adult Partnership scale (Zeldin et al., 2014). The data collected during the baseline assessment at the very beginning and mid-point evaluation are used in this work. The implementation

phase lasted 8 months. At the end of this phase, semi-structured, qualitative interviews were conducted. The interviews explored the Youth Board's development through the project and gave them an opportunity to voice their feedback.

During dissemination (ongoing), the young people will learn how to tailor their findings to specific audiences. The youth will decide where and how they will share their work. They will be supported by the Adult Advisory Board and the researcher. At the end of this phase, a final evaluation will be conducted. It will include all scales used at the mid-point evaluation.

3.2 Participants

The program participants were African-American high school students (13-17 years old) from the Metro Atlanta area. The goal was to recruit 11-14 adolescents to serve on the Youth Board of AYRC.

The group size was chosen to accommodate the purpose of the project. It was important that the number of adolescents was large enough that if one or two would not attend a meeting the group size would be still big enough to work efficiently in a group and small enough that if all participants attended, working with the whole group would be still feasible.

Only adolescents from the Atlanta Metro area were chosen as participants in this program because weekly research trainings at the beginning of the project were held at Emory University and a commitment to participate in those meetings was part of accepting the position of Youth Board member.

As described earlier, African-Americans still face health disparities and hence, were chosen as the target population. Furthermore, the adolescent age group was elected to fill the gap of CBPR projects with youth involvement. Participants from low-income neighborhoods were the priority population as well.

Interested African-American youth needed to write an application including why they wanted to be part of this project. Furthermore, a time commitment of 2 hours per week over the course of 18 months, a recommendation letter, and parental consent was necessary. The AYRC Support Team strived to select a diverse group in regards of neighborhoods of the Metro Atlanta area and gender.

Information about the project was distributed through community partners and schools. Recruiting through different organizations was implemented to get applications from people with different backgrounds.

3.3 Procedure

All surveys and evaluations were completed on paper. PYD scale, Trust in Medical Researchers Scale, Medical Mistrust Index and demographic information was not obtained anonymously (LaVeist et al., 2009; Lerner, 2004; Lerner et al., 2009; Mainous et al., 2006). This was necessary to implement the Pretest-Posttest Design.

The young people filled out the Pre-Test consisting of demographic questions, SHORT PYD scale, Trust in Medical Researchers Scale and the Medical Mistrust Index at the beginning of their first session. One young person who was not able to join the first research training and filled it out at the beginning of the first training he attended.

The mid-point evaluation was conducted 8 months after the baseline assessment and before the Youth Board met the researcher. It consisted of demographic questions, SHORT PYD scale, Trust in Medical Researchers Scale, the Medical Mistrust Index, Y-AP measure and open mid-point evaluation questions.

The qualitative interviews were conducted at the data analysis/report writing stage of the project. Young people were either interviewed in person (n=10) or over the phone (n=2) by an AYRC Support Team.

3.4 Measures

3.4.1 Descriptive Variables

Gender: Participants were asked if they were either Male, Female or Other, with the possibility to specify, at the time of the application.

Grade: Participants were asked what their current grade was at the time of the application.

Race/Ethnicity: Participants were asked if they were either Asian, Asian American or Pacific Islander, Black or African-American, Hispanic or Latino/a, White, Caucasian; not Hispanic, American Indian/Native American, Multiethnic or multiracial (more than one race or ethnicity), or Other with the possibility to specify.

Furthermore, participants provided answers to the categorical questions about their school district and to yes-no-questions about whether or not they qualify for reduced/free lunch at school, if somebody speaks limited English in their family, if they have an individualized education plan (IEP), if they have an individualized family service plan (IFSP) at school, and/or if they have a diagnosed learning challenge or medical condition.

The frequencies of gender, current grade, race/ethnicity, school district, reduced/free lunch at school, limited English in family and IEP/IFSP/diagnosed learning challenge or medical condition were calculated.

3.4.2 Positive Youth Development

The project uses PYD as theoretical framework. Hence, the SHORT PYD (Bowers et al., 2010; Lerner et al., 2005b) was used to assess changes in the 5 Cs of PYD. The SHORT PYD is an established scale and validated for this age group (Cronbach's α range between 0.63 and 0.90, $\chi 2=552$, df=134, $p<0.01$; RMSEA=0.043 [0.039, 0.047]; CFI=0.99) (Bowers et al., 2010; Lerner et al., 2005b; Phelps et al., 2009).

This project used the SHORT PYD, October 2008, short version 1.3 (Bowers et al., 2010; Lerner, 2008; Lerner et al., 2005b; Phelps et al., 2009). This 77-item scale is composed of 5 scales. Character consists of 4 sub-scales, Competence consists of 3 sub-scales, Connection consists of 4 sub-scales, and Confidence consists of 3 sub-scales as shown in *Figure 1*. If a question had a neutral answer option (5-item

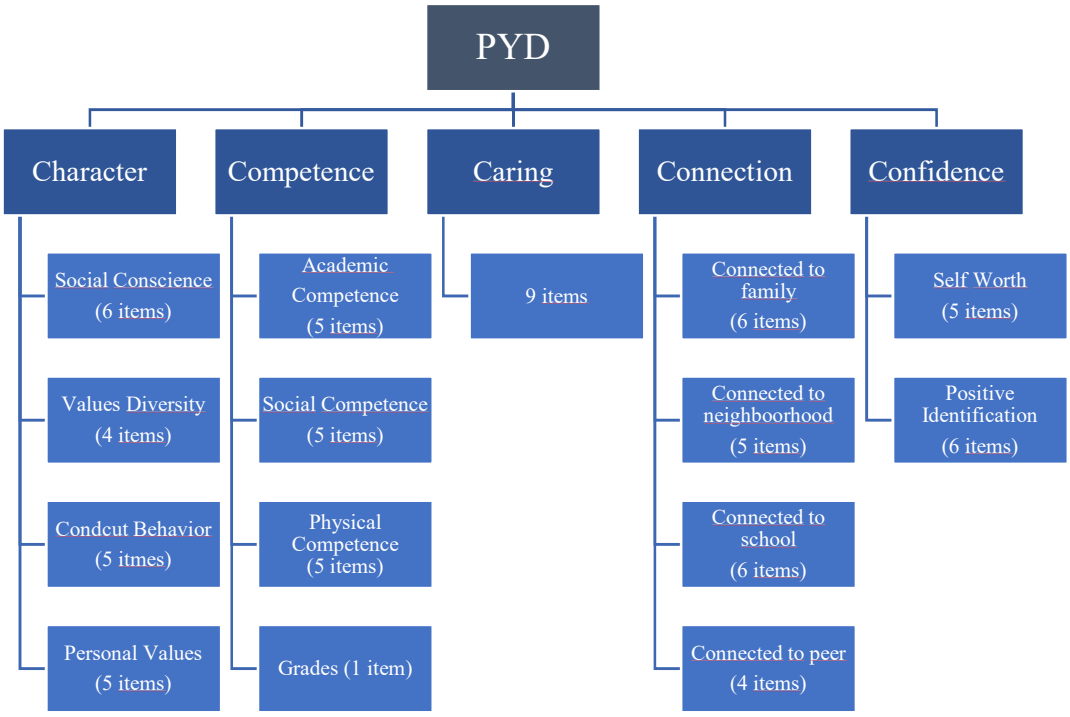

Figure 1: Subscales of the SHORT PYD student questionnaire.

Likert-scales), the neutral option was discarded. Seven questions had 1 missing or invalid answer at the baseline assessment. One question had 2 missing or invalid

answers at the baseline assessment. Twelve questions had 1 missing or invalid answer at the mid-point assessment. One question had 2 missing or invalid answers at the mid-point assessment.

Character is assessed through Social Conscience (6 items), Values Diversity (4 items), Conduct Behavior (5 items), and Personal Values (5 items). Twenty questions such as, *How important is each of the following to you in your life? Helping to reduce hunger and poverty in the world* (Social Conscience), *Getting to know people who are of a different race than I am* (Values Diversity), and *Doing what I believe is right, even if my friends make fun of me* (Personal Values) were asked. The answers range on a 4-item Likert-scale from, "1 - Not Important" to "4 - Extremely Important". For the sub-scale Conduct Behavior, participants first had to decide which kind of person they are more like and afterwards to which degree as shown in *Figure 2*.

Really True For Me	Sort of True For Me	Option 1		Option 2	Sort of True For Me	Really True For Me
		Some kids usually do the *right* thing.	BUT	Other kids often *don't* do the right thing.		

Figure 2: Sample Question for Character from sub-scale Conduct Behavior.

Competence is determined through 16 questions. One sub-scale (Grades) asks about school grades (What grades do you earn in school? Mostly As - Mostly below Ds). For the sub-scales Academic Competence (5 items), Social Competence (5 items), and Physical Competence (5 items), participants first had to decide which kind of person they are more like and afterwards to which degree as shown in *Figure 3*.

Really True For Me	Sort of True For Me	Option 1		Option 2	Sort of True For Me	Really True For Me	Sub-scale
		Some kids feel that they are very good at their school work.	BUT	Other kids worry about whether they can do the school work assigned to them			ac
		Some kids wish that more kids liked them.	BUT	Others feel that most kids *do* like them.			sc
		In games and sports, some kids usually *watch* instead of play.	BUT	Other kids usually *play* rather than just watch.			pc

Figure 3: Sample Question for Competence from sub-scales Academic Competence (ac), Social Competence (sc), and Physical Competence (pc).

Caring is assessed through 9 questions like: *How well does each of these statements describe you? I don't feel sorry for other people when they are having problems.* The answers range on a 4-item Likert scale from, "1 - Not Well" to "4 – Very Well."

Connection is determined through 21 questions divided into the sub-scales: Connected to family (6 questions), Connected to neighborhood (5 questions), Connected to school (6 questions), and Connected to peer (4 questions). Questions such as, *How much do you agree or disagree with the following? In my family, I feel useful and important* (Connected to family), *Adults in my town/city listen to what I have to say* (Connected to neighborhood), and *My teachers really care about me* (Connected to School). The answers range on a 4-item Likert-scale from, "1 - Strongly Disagree" to "4 - Strongly Agree". Connected to peers was assessed through questions like, *How true is each of these statements for you?: I trust my friends* on a 4-item Likert scale from, "1 – Never True" to "4 – Always True."

Confidence is determined through the sub-scales Self-Worth (5 questions) and Positive Identification (6 questions). For Self-Worth, participants first had to decide which kind of person they are more likely and to which degree as shown in *Figure 4*.

Really True For Me	Sort of True For Me	Option 1		Option 2	Sort of True For Me	Really True For Me
		Some kids aren't very happy with the way they do a lot of things.	BUT	Other kids think the way they do things is fine.		

Figure 4: Sample Question for Confidence from sub-scale self-worth.

For Positive Identification questions like, *How much do you agree or disagree with the following?: All in all, I am glad I am me* on a 4-item Likert-scale from, 1 – "Strongly Disagree" to "4 - Strongly Agree" were asked.

Items 34, 36, 37, 45, 49, 54, 56, 59, 60, 62, 66, 67, 68, 70, 71, 73, 74, 78, 80, and 82 were reverse coded. Grades were coded as following: 1.0 = Mostly below Ds, 1.4 = Mostly Ds, 1.9 = About half Cs and half Ds, 2.3 = Mostly Cs, 2.7 = About half Bs and half Cs, 3.2 = Mostly Bs, 3.6 = About half Bs and half As and 4.0 = Mostly As. Missing data was coded as 99.

For Character, Connection and Confidence, the mean of each subscale was calculated and then the mean of the subscales computed. For Competence, the mean of each subscale was calculated and then the average was calculated of the two scales with Grades. For Caring, the mean of the nine items was calculated. This was in accordance to the instructions of the scale.

3.4.3 Trust in Medical Researchers Scale

Trust in Medical Researchers Scale (TIMRS) is composed of two sub-scales: Participant Deception and Researcher Honesty. TIMRS and the two sub-scales are used as continuous variables. TIMRS is a 12-item scale composed of a 5-point Likert-

scale. Participant Deception and Researcher Honesty are both composed of 6 items (Cronbach α = 0.842 for whole scale, Participant Deception: Cronbach α = 0.776, Researcher Honesty: Cronbach α = 0.749) (Mainous et al., 2006).

Participant Deception was assessed through questions like, *Medical researchers act differently towards minority subjects than towards white subjects.* The answer options ranged from 1 = "strongly disagree" and 5 = "strongly agree".

Researcher Honesty was determined through questions like, *In general, medical researcher care more about doing their research than about the participant's' medical need.* The answer options ranged from 1 = "strongly disagree" and 5 = "strongly agree".

The minimum possible score was 0 and the maximum possible score was 48. The higher the score the more trust the participants have in medical researchers.

Items 1-6, 11 and 12 were reversed coded. Missing values were coded as neutral (3). At the baseline and mid-point assessment 1 answer was missing. Trust in Medical Research was calculated by the sum of all 12 items and subtracting 12. Participant Deception and Researcher Honesty was calculated by summing the 6 items, subtracting 6 and multiplying by 2.

3.4.4 Medical Mistrust Index

The Medical Mistrust Index (MMI) is a 7-item scale composed of 4-point Likert-scale items (Cronbach α = 0.76, Pearson correlation = 0.346 to 0.500, Test–retest correlation = 0.697, $p<0.0001$) (LaVeist et al., 2009). Medical Mistrust was assessed through statements like, *Health care organizations have sometimes done harmful experiments on patients without their knowledge* on a scale 1-4, where 1 was "Strongly disagree" and 4 was "Strongly agree". The score was used as a continuous variable and a higher score indicated higher mistrust. The minimum possible score

was 1 and the maximum possible score was 7. The MMI was the calculated average of all 7 items. Missing values were coded as 99. At the baseline assessment one value was missing and at the mid-point evaluation no answer was missing.

3.4.5 Youth-Adult Partnership

The Youth-Adult Partnership (Y-AP) is a 9-item scale measure and has two dimensions: supportive adult relationships (SAR) and youth voice in decision making (YVDM) ($\chi^2(26) = 103.615$, $p<0.001$; TLI = 0.959; CFI = 0.970; RMSEA = 0.07; SAR: five items, Cronbach $\alpha = 0.87$ YVDM: four items, Cronbach $\alpha = 0.82$) (Zeldin et al., 2014). SAR consisted of 5 items like, *Youth and adults learn a lot from working together in this project*. YVDM consisted of 4 items like, *I am expected to voice my concerns when I have them.* Agreement with these statements were ranked on a 5-point Likert scale ranging from 1 "Strongly disagree" to 5 "Strongly agree". The score was used as a continuous variable and a higher score indicated more equality between youth and adults in the project.

For SAR and YVDM the means of the subscales were calculated. No missing values were reported. Additionally, the young people were asked on a scale from 1 to 5, with 1 being not comfortable at all to 5 being very comfortable, how comfortable would they be reaching out to the Adult Advisory Board members for guidance or assistance and how comfortable would they be reaching out to the AYRC adult team members for guidance or assistance.

3.4.6 Open Mid-Point Evaluation Questions

To evaluate the project more specifically, the youth were asked open-ended questions on a paper survey during the Mid-Point evaluation:

1. What have you enjoyed the most about being part of AYRC?
2. What one thing would you suggest we change about the program?

3. How has participating in this program influenced your: (a) Confidence talking in groups, (b) Confidence leading discussions/presentations
4. Would you recommend this program to your friends or family members? Why or why not?

The answers were analyzed through looking for themes. Furthermore, the answers to the question, *How has participating in this program influenced your: (a) Confidence talking in groups, (b) Confidence leading discussions/presentations* were categorized into three categories: improvement, steady, and decrease.

3.4.7 Semi-structured, qualitative Interviews

To evaluate how the 5 Cs changed throughout the project and how the program influenced the 5 Cs, semi-structured, qualitative interviews were conducted with all twelve Youth Board members. Change in 5 Cs can be slow and a young person's life is influenced by multiple factors; hence, the 5 Cs are influenced by multiple sources. To evaluate the effect of the program on the 5 Cs, qualitative interviews were conducted in person (10 participants) or over the phone (2 participants). The interview guide consisted of 17 questions and 39 sub-questions and focused on the effect of the project on the 5 Cs and the overall satisfaction with the program.

To assess Contribution, participants were asked about what they learned, changes in school performance, and which new skills they acquired over the course of the project. Young people were asked about how they liked working with the Youth Board, Adult Advisory Board, and AYRC Support Team to evaluate Connection. Through questions about researching sex education in Georgia, Character and Caring were evaluated. Confidence was assessed through asking directly about how participation affected their confidence and more specifically how it fell to facilitate

activities for the Adult Advisory Board and how they fell this project affected their confidence in conducting health-related research.

To get feedback about the project the Youth Board was asked what they liked the most and the least about the project, how participation affected them, what were their biggest challenges, how would they change the project, if they would recommend the project to friends, and their best memory of AYRC. This data was used for the general evaluation of the project and not specifically for this work.

After the first two interviews, the interview guide was revised to incorporate topics that came up during the first interviews: representation of race/ethnicity and gender. Young people were asked about how they feel about the Youth Board consisting of only African-American adolescents. Furthermore, they were asked about their feelings having two African-American Masters graduates on the AYRC Support Team and meeting Dr. Holt, an African-American doctor at CHOA. Additionally, youth were asked about their feeling that the Youth Board, Adult Advisory Board and AYRC Support Team mostly consisting of women.

Five different interviewers conducted the interviews. Four interviewers conducted each one interview and the author conducted 8 interviews. Interviews lasted between 22 and 60 minutes (mean=39.8min, SD=12.0min). The interviews were audio recorded and detailed notes were used for coding. One person coded the interviews in MAXQDA Version 12 and developed themes. To support findings, selected quotes were transcribed verbatim.

3.5 Analysis

IBM SPSS Statistics Version 24 and Microsoft Excel 2016 were used for the analysis. For the qualitative interviews, MAXQDA Version 12 was used to code the transcripts.

A Dependent T-Test assessed the relationship between the baseline and mid-point evaluation at 8 months of the SHORT PYD, Trust in Medical Researchers Scale and the Medical Mistrust Index. The statistical analysis was done with IBM SPSS Statistics Version 24.

The open mid-point evaluation questions were analyzed in Microsoft Excel 2016 through looking for themes and categorizing them.

MAXQDA Version 12 was used for all interview coding. The interview notes were coded inductively and deductively. The codes were categorized and conceptualized. Due to time constraints, the coding was done by one person.

4 Results

4.1 Description of the sample

Of the twelve participants in the project, ten self-identified as female (83.3%) and two as male (26.7%) at the mid-point evaluation. At the beginning of the project, two (16.7%) participants were in 9th grade, four (33.3%) participants were in 10th grade, five (41.7%) participants were in 11th grade and one (8.3%) participant was in 12th grade. Eleven (91.7%) participants self-identified as Black or African-American and one (8.3%) as multiethnic or multiracial (more than one race or ethnicity). Seven (58.3%) participants attend school in Cobb County, three (25%) in Fulton County, and one (8.3%) in Fayette and Henry County, respectively. Seven (58.3%) qualified for the National School Lunch program, in which they receive free and reduced meals. None of the participants have a family member who speaks limited English. Nor do any participants have an individualized education plan (IEP), individualized family service plan at school (IFSP), or a diagnosed learning challenge or medical condition.

4.2 Positive Youth Development

PYD was assessed through the 5 Cs. According to the results from the dependent T-test the average Connection score at mid-point (mean=3.13, SD=0.38) was significantly lower than the baseline score (mean=3.34, SD=0.33) (t=3.147, df=11, p=0.009). Character score at mid-point (mean=3.46, SD=0.22) was not significantly higher than the score at baseline (mean=3.56, SD=0.16) (t=2.108, df=11, p=0.059); as well as no significant change in the Competence score (mid-point: mean=2.84, SD=0.18, baseline: 2.89, SD=0.15) (t=0.894, df=11, p=0.390) and the Caring score (mid-point: mean=3.43, SD=0.41, baseline: mean=3.61, SD=0.31) (t=1.650, df=11, p=0.127). The Confidence score was not significantly higher at mid-point (mean=3.21, SD=0.61) than at the baseline (mean=3.20, SD=0.51) (t=-0.041, df=11, p=0.968) as shown in *Figure 5*. Minimum and maximum scores can be found in *Table 2*.

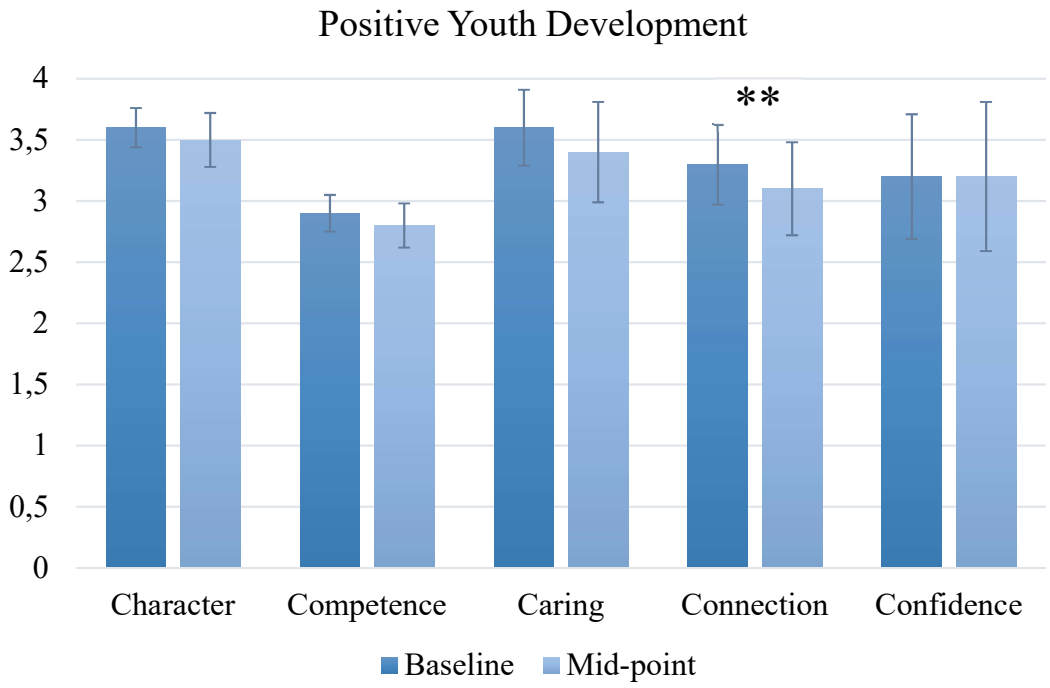

*Figure 5: Results of the 5 Cs of Positive Youth Development: Character, Competence, Caring, Connection, and Confidence at baseline and mid-point. ** p<0.01*

	Baseline Minimum	Maximum	Mid-Point Minimum	Maximum
Character	3.24	3.75	2.86	3.75
Competence	2.65	3.15	2.43	3.05
Caring	3.11	4.00	2.67	4.00
Connection	2.88	3.82	2.38	3.83
Confidence	2.20	4.00	2.30	4.00

Table 2: Minimum and maximum scores for the 5 Cs of PYD.

4.3 Trust in Researchers Scale

Results from the dependent T-test demonstrated that the average score for Trust in Medical Researchers Scale (TIMRS) at the mid-point evaluation (mean=28.92, SD=5.90) was significantly higher as compared to the average score at the baseline assessment (mean=33.75, SD=6.61) (t=-3.031, df=11, p=0.011).

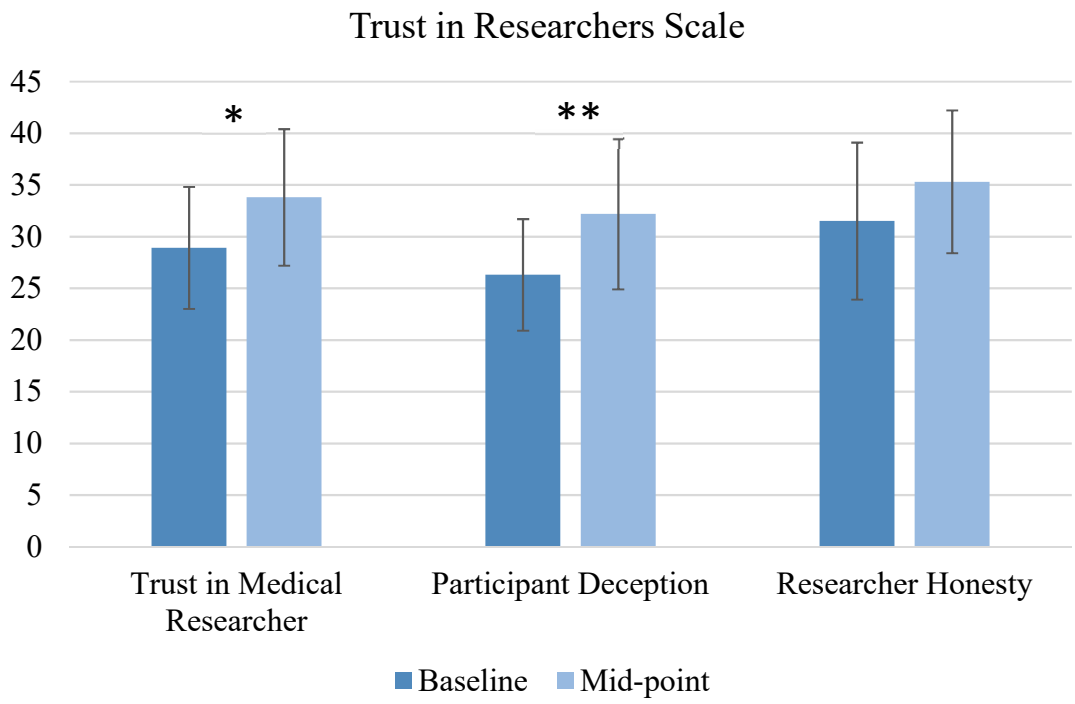

*Figure 6: Trust in Researchers Scale results: Trust in Medical Researcher, Participant Deception, and Researcher Honesty. *p <0.05, ** p<0.01*

According to the results of our dependent T-test the average Patient Deception score at mid-point assessment (mean=32.17, SD=7.31) was significantly higher than the score at baseline assessment (mean=26.33, SD=5.38) (t=-3.725, df=11, p=0.003). Furthermore, results from the dependent T-test showed a non-significant increase of Researcher Honesty score between baseline (mean=31.50, SD=7.59) and mid-point

(mean=35.33, SD=6.90) (t=-1.805, df=11, p=0.99) as shown in *Figure 6*. The maximum score for TIMRS at baseline and mid-point was 41 and the minimum score at baseline was 22 and 19 at midpoint. The maximum score for Participant Deception at baseline was 36, at mid-point 38 and the minimum score at baseline was 18 and 12 at midpoint. The maximum score for Researcher Honesty at baseline was 46, at mid-point 44 and the minimum score at baseline was 20 and 24 at midpoint.

4.4 Medical Mistrust Index

According the results of our dependent T-test, the Medical Mistrust Index was not significant at mid-point (mean=2.46, SD=0.42) compared to baseline (mean=2.50, SD=0.31) (t=0.268, df=11, p=0.793) as shown in *Figure 7*. The maximum score at baseline was 2.86 and the minimum 1.86 and for the mid-point the maximum was 3.14 and the minimum 1.57.

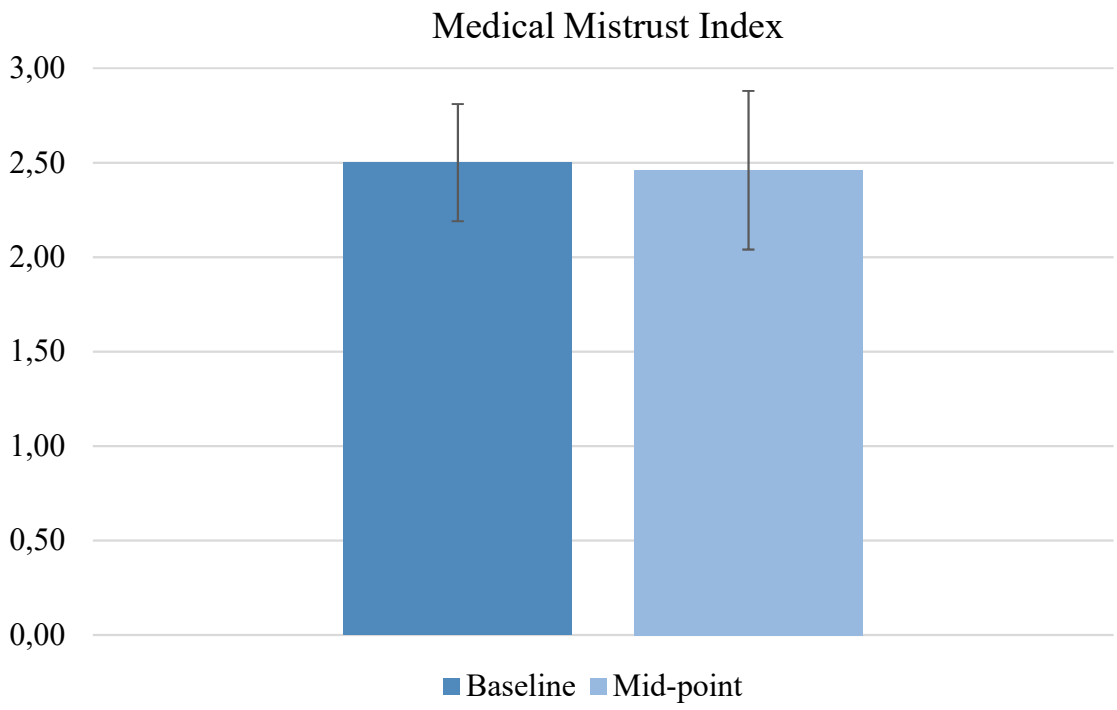

Figure 7: Medical Mistrust Index at baseline and mid-point evaluation.

4.5 Youth-Adult Partnership

At the mid-point evaluation, participants reported a mean score of 4.78 (SD=0.20) for Supportive Adult Relationships (SAR) and 4.73 (SD=0.46) for Youth Voice in Decision Making (YVDM), both sub-scales of Youth-Adult Partnership Scale as shown in *Figure 8*. The maximum score for SAR and YVDM was 5 and the minimum score was 4.

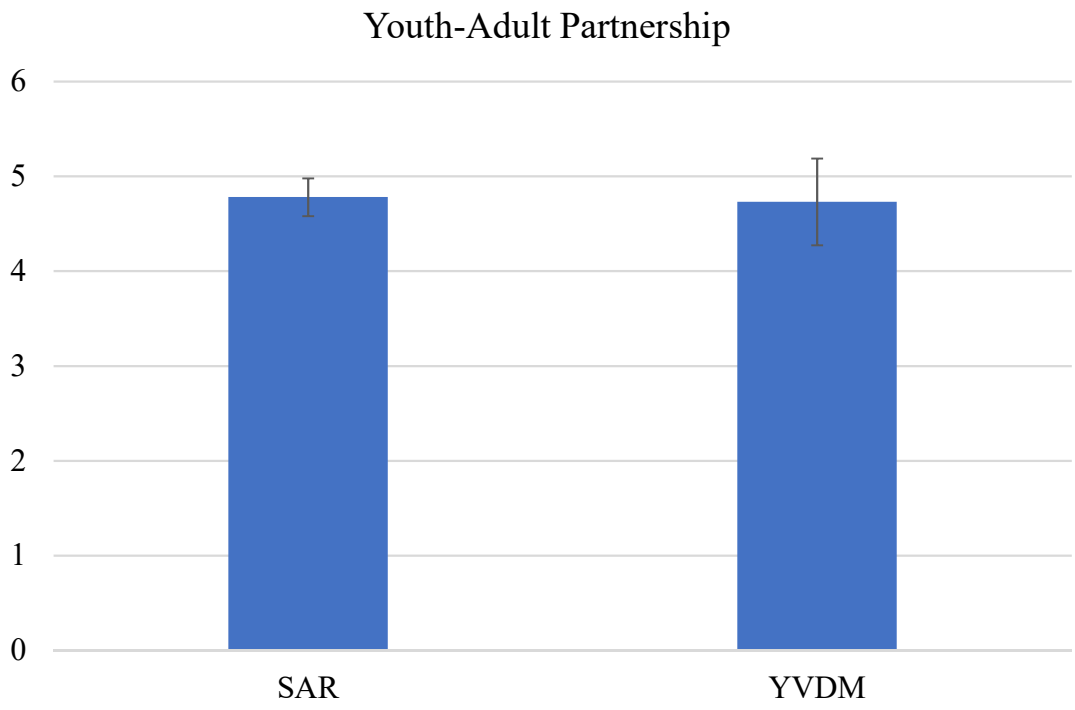

Figure 8: Youth Voice in Decision Making (YVDM) and Supportive Adult Relationships (SAR) Youth-Adult Partnership sub-scales scores at mid-point evaluation.

Youth Board members, at mid-point, had mean score of 4.00 (SD=0.85) for how comfortable they would be reaching out to the Adult Advisory Board members for guidance or assistance and a mean score of 4.33 (SD=0.65) for how comfortable they would be reaching out to the AYRC team members for guidance or assistance.

4.6 Open-ended Mid-Point Evaluation Questions

Youth Board members reported the following as the most enjoyable aspects of the AYRC: meeting youth with similar interests (6), group discussion and

collaboration (5), learning about behavioral science research and ethical practices (3), and being included in decision-making (1).

Young participants would change programmatic logistics (e.g. diversifying meet-up and food options) (3), explore different communities and more hands-on activities (e.g. less class room lectures and more outside activities such as conducting an observational study) (3), additional meetings and/or work during the week (2), reinforce knowledge learned by providing supplemental work-week activities and recap previous lessons at each meeting (2), decrease the amount of icebreaker activities and outline programmatic objectives and deliverables at project start (1), and make promotional materials like t-shirts and sweatshirts to represent project (1). One person noted they would change nothing and about the program. One response was missing.

Ten young board members reported an increase in confidence in talking in groups (83%), one participant indicated their confidence stayed the same (8%) and one participant (8%) indicated not applicable. The confidence in leading discussions and presentations improved for four participants (33%), but remained the same for six participants (50%). Two participants (17%) indicated that this question was not applicable to them. It is notable to mention that three of the young people who mentioned no improvement noted that they still have to work on these skills. Ability to work in a team increased for eight young people (66%), stayed at the same level for two participants (17%) and two respondents (17%) wrote that this measure did not apply to them. Confidence working with adults increased for nine young people (75%), stayed the same level for one Youth Board member (8%) and was not applicable for two participants (17%).

All 12 Youth Board members would recommend the program to friends or family members. Reasons for recommending the program included increased public health knowledge (6), interesting, fun, and new experiences (3), community engagement and improvement (3), meeting people (2), an accepting atmosphere (2) and personal growth and development (1).

4.7 Semi-structured, qualitative Interviews

A major part of the qualitative interviews was the assessment of PYD. Questions targeted all 5 Cs. Furthermore, young people indicated development of the 6th C: Contribution.

Character

Youth Board members expressed interest in exploring sexual health education as the focal topic of their community assessment. Through observation and combing the literature, hey discovered discrepancies in the quality and fidelity of sexual health information high school students received across Metro Atlanta area school districts. One Youth Board member expressed that they believed the lack of comprehensive sex education in school was doing youth a disservice because they were being denied a right to make healthy decisions:

I feel, I don't want to say I feel bad for them, but I, I feel bad that it's something their education is been determined by someone else and they're missing out on that, which I feel like everyone should be learning about it because it's not just about sex, but you're learning about your body and why it does certain things and how to keep yourself healthy, healthy.

Participant 8 described how they felt about the fact that some adolescents in Fulton County receive comprehensive and medical accurate sex education and some do not:

I think it's not fair because. Well, I mean I went to a charter school but I mean why should one school or one kind of get any and the other don't. I mean we all want, by the end of the day we all want, we all want our kids or like I don't get, but like

parents all want their kids to get the same education and for that matter like correct education because there's also sexual health at teachers more so abstinence. So, I think that everybody should get the same correct sexual sex, sex ed health or sex, sex ed.

Furthermore, participants learned about the history of ethical research practices and applying ethical guidelines to their community assessment at an AYRC meeting at the beginning of the program. Participant 3 talked about how their understanding of ethics in research developed through the project:

Going into the project, I think I had a somewhat clear understanding of healthcare and ethics. It did help me realize or yeah, it did help me realize that research does have, does need to have, not just consider the ethics of what kinds of research, like what kinds of questions that people can ask others, what kinds of are, what kind of experiments like how far they can take their research methods in terms of whether it's moral or immoral.

Thus, participants acquired a broader understanding of what is right or wrong and gained insight into research ethics.

Competence

Youth Board members expressed that they learned new skills throughout the project including data collection methods (e.g. conducting key informant interviews), and data analysis (e.g. quantitative analysis utilizing MS Excel). Participant 7 described their learning:

I feel like I've learned from this project, like I said earlier, some of the things we've done like interviewing the key informants or having the VOX workshops, even the qualitative data analysis. I've never done any of those things before and I feel like this program has helps me to step out of my comfort zone and try new things and also mentally I think I'm growing as a person.

Furthermore, some youth expressed that they see medicine now more than merely being a doctor and are exploring public health careers. Participant 3 reported how the project widened their perspective:

It helped me realize that I am able to do these kinds of things in the future. So, it definitely put public health on my potential future occupation or fields. So, realizing that health, public health is an option for me made me a little bit more it made me happier, because I don't want to be so focused on one thing that I would really want to do when I know there's other options that I could be pursuing instead.

Hence, young people learned new skills and got to know professional pathways they were not aware of before; both are part of the Competence indicator of PYD

Caring

Youth Board members expressed that they have sympathy and empathy for the adolescents who do not receive sex education. Participant 1 mentioned how denying youth the right to comprehensive and medically accurate sex education affects communities at large:

I feel bad for them. I feel like that should be something taught in all schools, because it does more than just affect that person. It affects everyone around that person. It affects entire communities. So, I feel like it's very important things to be taught to young people, especially when they are my age and they just starting to get sexual active. I feel like that is something that need to be taught to them.

Through conducting a community assessment, the Youth Board learned how their peers can be affected from lack of sex education. Some of the members were not aware that not everybody receives comprehensive sex education and they not only felt that this was wrong, but also felt bad for the young people who do not have control over their education that they would miss out on such an important topic.

Connection

Youth Board members reported that they enjoyed working with fellow Youth Board members. This project afforded them the opportunity to learn from other like-minded adolescents from across the Metro-Atlanta area. Participant 8 described working with the Youth Board:

Well I remember in the beginning of the program we did a lot of team building stuff. So, I it was fun to work with people. I think everybody brought something to everybody brought something to the conversations, the meetings. It was a lot of fun working with them.

Additionally, Youth Board members connected with adults on the project. The Youth Board worked closely with the AYRC Support Team and the Adult Advisory Board. Young people indicated that they felt more confident talking to adults because of the project. Participant 6 described how they liked working with the Adult Advisory Board as "I actually loved it. They were very supportive and they [are] always here to hear us out. And to tell us well what we need to improve on and what we do better."

None of the young people reported having problems with other Youth Board members, Adult Advisory Board members, or AYRC Support Team members. They felt comfortable asking questions and working together as a team. Some young people indicated that they would like to meet the Adult Advisory Board more regularly and have more time for the joint meeting preparation.

Confidence

Although some young people reported that they already had a high level of confidence and therefore did not change through the project, most Youth Board members expressed that they gained confidence through facilitating activities, talking to adults, and conducting health outcomes research. They also mentioned that they don't necessarily feel that they could do it alone, but if the topic would come up or they had the opportunity to work on a research team, they had at least an understanding of it. Participant 7 expressed working with public health professionals increased their confidence during the college application cycle:

I'm more comfortable talking to professional adults and practically speaking my mind. I've, I'm a senior now. We are going to college next year. I've been having

several college interviews and I feel like I'm more prepared with those that make sense because I'm having more experience talking to professionals and I've been asking more questions, if that makes sense and don't always do that.

Young people also gained confidence through the data collection phase of the community assessment. This included collecting surveys, conducting key informant interviews and focus groups. Some young people reported that they were initially nervous about survey recruitment and discussing the project with their peers. Nevertheless, once data collection was completed, all reported being more confident and comfortable discussing the project with participants and key stakeholders.

Contribution

Youth Board members expressed how community engagement and service was a strong motivator for their application to and participation in the project.

Participant 6 mentioned that it made them uncomfortable collecting surveys, because of fear what a peer would think about them. In order to overcome that fear, Participant 6 reflected on their original intention for engaging in this project, prioritizing helping their community. After encountering a person who did not want to take the survey Participant 6 told themselves, “It’s okay. I’m just tryna help. Just brush it off. Just say “Okay. Thank you. Maybe next time.” Additionally, Participant 6 mentioned “And like I got conscious. My conscious like. You know [own name], just do this, don’t worry about them, you are going to be okay. You just tryna to help. So, it don’t matter what they are saying is negative. You’re just trying to help people.”

Participant 7 expressed how giving back to the community was very important for them:

Like I've done interviews for other, for colleges and sometimes they ask me “What’s an activity that you do?” and I usually talk about this program because it is important to me and I think that what we're doing is important and I think that this project has prepared me for participating in other projects in the future similar to it

or it's also made me more eager to participate in other research projects that are ultimately giving back to the community because I think that's what's most rewarding.

Diversity

The project was designed for African-American adolescents. Some young people did not see any benefit or disadvantage of an African-American Youth Board. Some young people felt empowered being in an African-American group and expressed that they are normally a minority. Other participants like Participant 7 would have changed this aspect:

I like it in that I understand that it's giving an opportunity to a group of people who are usually underrepresenteded are underrepresented, but I do think that it kind of limits the team. I think it would be nice if there were more different people.

Nevertheless, young people mentioned how important it was to work with people they identify themselves with and having role models. For example, Youth Board members mentioned the influence of two African-American AYRC Support Team members with a Master of Public Health impacted their want to pursue careers in health research. Furthermore, three fourths of the Youth Board were female, the Adult Advisory Board and the AYRC Support Team consisted of women. This was empowering for some female Youth Board members. Youth Board. As one of two male board members, one participant felt if he had to represent all males in the project. Furthermore, another participant mentioned how African-American male representation, on the Youth and Advisory Board, was missing in the project. Hence, having role models was important for the participants.

Teamwork

Youth Board members not only connected with their peers through the project, but also learned how to collaborate with them. Some youth reported avoiding teamwork, in the past, but gained an understanding of the importance of collaboration

through the project. Participant 6 said that they learned to become a team player through this project "'Cause I am the type of person that like doing things by myself. I had to learn how to work as a team. Well, I learned that now."

As mentioned earlier under Connection, Youth Board members learned from each other by working as a team. The team aspect of the project was an important feature for the young people.

Pride

Some Youth Board members reported how they felt proud about their achievements like data collection and the perspective of helping people in the community. Participant 7 explained how they felt when the researcher reported about talking to people about the project:

Also, I really liked when she was telling us about the two mothers, I believe who were interested about our group because I think they were in Gwinnett County and they were trying to get something with sex something with sex ed there and I don't know it was really inspiring hearing how she practically bragged about a. Well, the moms actually asked her about us, but she practically bragged about us and I don't know. It makes us feel special when you know someone is proud of us. If that makes sense. Being proud of what we're doing.

School

Some Youth Board members mentioned that at the project's inception, they struggled with balancing this elective activity and their school tasks. Overtime participants developed time management skills and thus, were able to excel in all of their endeavors. Furthermore, some youth reported using skills and knowledge acquired through the project in school. Participant 6 described how it benefited their school work:

Actually, when I was in health I could relate to some of the things that were going on here with my health work and it helped me positively on tests and everything like that. This really doesn't have a outcome negative outcome for school at all. This is something that can help me. I mean when I tell teachers about it they are so proud of me and they just wanna motivate me and help me.

5 Discussion

5.1 Findings

The focus of this work is to assess PYD of the AYRC Youth Board. Additional research questions focused on how the young people perceived working together with adults and how their perception of health-related research changed. By the midpoint evaluation, we expected to see an overall increase in the PYD scale and Trust in Research scale and a decrease in the Medical Mistrust Index. However, no significant changes were observed for the PYD scale and the Medical Mistrust Index. The Youth-Adult Partnership scale result was high which signifies a positive relationship between the Youth Board and the AYRC Support Team and Adult Advisory Board. The qualitative interviews yielded favorable outcomes. Youth Board members highlighted how much they learned and gained from their participation in the project. All participants expressed their satisfaction with project and stated that they would recommend it to family members or peers.

The results about developing PYD were mixed as most of the 5 Cs did not change significantly on the scale, but the qualitative interviews suggested promotion of the 5 Cs. Nevertheless, the positive feedback of the young people during the interviews weigh more than an increased score. The interviews afforded participants the opportunity to discuss the projects benefits and challenges at length. Specifically, if these facilitators or barriers were directly attributable to the project itself or other unmeasured external factors, that could have influenced their scores on the PYD survey measures.

5.1.1 Youth Board Composition

The project was intended for a diverse group of African-American high school students. The sample was also representative of individuals from various income levels (e.g. indicated by recipients of the National School Lunch Program), and Metro Atlanta area school districts. Additionally, education levels ranged from 9th to 12th grade. Although the project aimed to have a gender balance, the project did not attract many male participants. A reason for this occurrence could be that a project about health attracts more female applicants. Additionally, one selected male participant failed to attend the first meetings due to lack of transportation. He felt as if he could not catch up with the group anymore and left the project.

Future projects could widen their scope and include diversity in immigrant status and inclusion of young people with disabilities. Nevertheless, these populations are hard to reach and must be targeted specifically during recruitment. Furthermore, it is important to reflect on how the group is composed. As mentioned in the interviews, some participants were empowered by an African-American team and one person felt he had to represent the whole male perspective, which made him sometimes uncomfortable. Hence, similar characteristics can lead to collective empowerment and should also be taken into considerations when planning the composition of a group. Overall, looking at the diverse socio-economic status and diversity in school districts this project showed that it was feasible to attract a diverse group for this project.

5.1.2 Positive Youth Development

A higher PYD score is associated with thriving. The project used PYD to measure how the young people would develop over the course of the project. Nevertheless, only Confidence of the 5 Cs of PYD increased between baseline and mid-point evaluation, though it was not significant. All other Cs decreased (though 3

not significantly). Connection decreased significantly between baseline and mid-point evaluation. There are a few explanations for this occurrence. First, the group size is small. Changes in one person's life has a strong impact on the whole survey. Between baseline and mid-point assessment young people started in a new grade. For example, school demands could have changed that could have had influence on Grades (Competence) or Connection to school (Connection) which are assessed through questions like, *My teachers really care about me* (Bowers et al., 2010; Lerner et al., 2005b; Phelps et al., 2009). Furthermore, it was not a research study and there was no control group. Hence, factors outside of the project could have led to a decreased PYD score. PYD depends on how young people see themselves regarding Character, Competence, Caring, Connection, and Confidence. This can change over time and is not linear. Hence, lower scores do not indicate automatically that thriving overall is not present. Additionally, the highest possible score for each of the 5 Cs was 4.00. Youth Board members scored over 3.50 in Character and Caring, over 3.00 in Confidence and Connection and over 2.50 in Competence at baseline assessment. Especially for Character and Caring there was not much space for improvement. Furthermore, the maximum score for Confidence and Caring was 4.00 out of 4.00 for baseline and mid-point assessment. Hence, participants who reported a score of 4.00 at baseline could not improve anymore.

Nevertheless, participants stated in their mid-point evaluation that one strength of the project was meeting the Youth Board which influences Connection. Furthermore, most of the Youth Board also reported to be more confident while presenting data (Confidence). During the qualitative interviews the young people expressed among other things learning new skills, being connected to peers and adults, and feeling empathy for young people who did not receive sex education

which indicates promotion of the 5 Cs. Thus, although the young people are on the positive end of the scale they still thrived through the project.

Other projects which used the 5 Cs reported similar outcomes. For example, a project used the 5 Cs for a school-based cardiovascular health promotion. Although the 5 Cs did not significantly change when assessed by the survey items, qualitative interviews revealed that the program improved the participants' knowledge and attitudes about cardiovascular health (Woodgate & Sigurdson, 2015).

5.1.3 Trust in Researchers Scale

Significant increase in Trust in Researchers Scale was observed between the baseline and mid-point assessment. The sub-scale Patient Deception increased significantly too and the sub-scale Patient Deception increased, but not significantly. This affirms the scope of the project. A big part of the project was to teach and let young people conduct research. Although the mid-point evaluation occurred before they had input from the researcher, and before they conducted their own community assessment, it showed that teaching them about research had a positive effect on their perception of research. That could also have been influenced by meeting the project lead who was an accomplished researcher. It will be interesting to see how the scale will change between mid-point and exit assessment after the young people have worked with the designated group researcher.

5.1.4 Medical Mistrust Index

The Medical Mistrust Index decreased, but not significantly between the baseline and mid-point evaluation. It indicated less medical mistrust, but the difference was not noticeable. This result cannot be easily explained. Reasons why this score did not improve can be multifarious. One explanation could be that during the project young people learned about the dark history of racism in public health.

This could have led for some people to lose trust in health care organizations. It is notable that LaVeist et al. advised recoding item 5 and 7 (2009). After evaluating the questions, a recoding did not seem to be fitting. Hence, the items were not recoded contrary to LaVeist et al. (2009).

5.1.5 Youth-Adult Partnership

Of a 5-point Likert-Scale the Youth Board scored over 4.70 in both Y-AP sub-scales Supportive Adult Relationships (SAR) and Youth Voice in Decision Making (YVDM). This is an important indicator that the Youth Board is satisfied with the support of adults in the project and feel that they have a say in the project. This scale is a good indicator that the project met two of the three important aspects for effective PYD programs according to Lerner: opportunity for youth participation in and leadership of activities and caring adult-youth partnership (Lerner, 2004; Lerner et al., 2009). More possibilities for participation is not only necessary for a successful PYD program and participant satisfaction, but also is part of doing a CBPR project. Doing a CBPR project demands high participation of the community partner who were African-American high school students in this project. Hence, it is also a good indicator that the adolescents were seen as research partners.

Furthermore, the two additional Liker-Scale questions support this assessment and shows that young people were more comfortable reaching out to AYRC Support Team members than the Adult Advisory Board. This is not surprising as the Youth Board spent more time with the AYRC Support Team. Furthermore, the majority of the AYRC Support Team members were younger (in their 20's) as the Adult Advisory Board members. This could have led to seeing members of the AYRC Support Team more accessible.

5.1.6 Open-ended Mid-Point Evaluation Questions

The answers to the open mid-point evaluation questions showed an overall positive assessment of the project. All Youth Board members would recommend the project to friends and family members and the majority gained confidence in talking to groups, in ability to work in a team, and confidence working with adults. Confidence in leading discussions/presentations improved for 1/3 of participants. Three of the six Youth Board members who indicated no change, were aware that they still needed improvements in this field. Hence, they probably saw the project as an opportunity to improve these skills. As this was a mid-point evaluation, it will be interesting how young people will assess themselves at the end of the project as some youth will have facilitated focus group discussions and interviews as part of their study and will have presented results from the study in front of the Adult Advisory Board and in the community more generally.

A big part of the positive feedback included meeting new people and working and discussing the material in the group together, which was not only enjoyed the most by half of the Youth Board, but also one of the reasons why they would recommend the project. Hence, the selection process for the group and teambuilding is important. Although one participant would have shortened the time of teambuilding in the beginning, it is an important part to establish trust in the group and give space to the group to get to know each other. This is also important to promote Connection as part of the 5 Cs. Furthermore, a big part of the project is to impact knowledge about health-related research and public health. The learning aspect of the project was part of what the participants enjoyed the most and part of why they would recommend the project to peers.

The highest need of change in the project regarded logistics such as place of meetings and food. The initial idea was to change the meeting places from time to time. This was not possible because of logistical challenges in doing so. Also, the regular meeting location did prove to be centrally located given the dispersed residences of the group. For special occasion like doing an observational study at Piedmont Park or meeting Stephanie R. Addison-Holt, MD, an African-American Adolescent Medicine Physician at CHOA the meeting place was changed. This involved additional coordination with the young people to ensure they have transportation and remembering the different meeting place, but the participation rate during these meetings did not drop. Thus, future projects could revisit this idea. The positive side of it would be that the meeting would sometimes be closer to a participant's home and that the Youth Board would see other research places.

Changing the provided food is possible in limited framework. The requirements for ordering food are: it has to be tasteful, vegetarian options have to be available, easy to order or to pick up, and staying inside of a budget. Therefore, the possibilities are limited. Nevertheless, the employed strategy for the rest of the project was to avoid the same food two weeks in a row.

A minority of the youth would have changed the project to be more intense through either adding more meetings or implementing home work. During the process of the project, homework and additional, optional events could not be implemented successfully as the schedules of the young people would not allow for increased participation, and the lack of transportation was a big barrier for some youth. Throughout the project we offered additional activities. These included visiting the David J. Sencer CDC Museum, attending the Population, Reproductive and Sexual Health (PRSH) Adolescent Task Force Social reception during the annual APHA

meeting, getting a tour at the newly build @Promise Center before opening and other community events like VOX-a-palooza. Only a few young people utilized these opportunities. Lack of transportation and a busy schedule were the main barriers. Nevertheless, participating young people enjoyed the activities very much.

5.1.7 Semi-structured, qualitative Interviews

Contrary to the results of the PYD scale, the qualitative interviews showed promotion through the project of the 5 Cs Character, Competence, Caring, Connection, and Confidence and occurrence of the 6th C Contribution. It is important to note that not every young person reported thriving in each of the 5 Cs. For example, some young people reported being very confident in general.

The topic chosen by the Youth Board, sex education among Fulton County high school students, promoted Character and Caring. This could also have happened working on other topics. Nevertheless, as reported from young people, they felt a sense of inequality, because high school students cannot choose for themselves if they get taught comprehensive sex education. This could be different with other health related topics.

The Youth-Adult Partnership was crucial for promotion in Confidence and Connection. Young people reported feeling more confident when talking to adults after the project and feeling comfortable working with the Adult Advisory Board. Few young people reported that it helped them through their college applications.

Through conducting their own community assessment, young people gained valuable skills and knowledge. Some young people reported using their knowledge in school. Hence, Competence was supported through AYRC.

Being part of the AYRC also widened the perspective of Youth Board members about health-related research. Some participants never had heard about

public health before joining the project and now some of them are thinking about careers in public health. This is also part of Competence.

Young people felt comfortable working with their peers, the Adult Advisory Board and the AYRC Support Team. Hence, Connection was promoted through the project. This was facilitated through teambuilding at the beginning and having consistent participation of the young people and Adult Advisory Board. Some young people reported to meet the Adult Advisory Board more regularly and having more time to prepare for the joint meetings. Hence, the Youth-Adult Partnership was important for young people. This is part of Connection and thus, Connection was promoted through the Youth-Adult Partnership.

Youth reported how they liked learning from each other and working in a group together. Some young people reported how they see now value of teamwork and engage now more in teamwork than before the project. Teamwork is a valuable skill and useful for nearly all occupations.

An important finding of the qualitative interviews were how role models shaped the project. The project was designed for African-American high school students from the Atlanta Metro area. Some participants mentioned that they felt empowered by working together with other African-American adolescents, because they are normally a minority. Furthermore, women being a majority on the Youth Board, Adult Advisory Board and AYRC Support Team empowered some of the participants. On the other side, some participants mentioned that it did not influence them. Male participants mentioned that there was a lack of African-American male role models and that it put pressure on themselves to represent all males. Hence, it is important not only to look at race/ethnicity and gender while selecting the Youth Board, but also in selecting the Adult Advisory Board and AYRC Support Team.

Furthermore, it is important to select a group of people who commit to the project over the whole time. AYRC could achieve this with the Youth Board. The Adult Advisory Board had originally recruited two male members, of which one only attended the first meeting and the other one never attended a meeting. Thus, the Adult Advisory Board had unintentionally no male members. Additionally, over the course of the project two female Adult Advisory Board members left the project. This reflects the high demands of this support and emphasizes that recruiting the Adult AYRC Support Team is an important task.

5.2 Conclusions

Taking all the results together, AYRC promoted the 5 Cs Character, Competence, Caring, Connection, and Confidence of PYD and even supported the 6th C Contribution. This conclusion is based on the qualitative interviews conducted with each one of the Youth Board participants. It is contradictory to the results from the PYD scale scores. Qualitative interviews can give more insights into how young people perceive themselves and their surroundings. The scale showed that some young people scored the maximum of Caring and Confidence during the baseline assessment. Hence, the scale for them was not the ideal tool to assess changes in PYD over time. The interviews showed us how the Youth Board evaluated their gains through the project. It is important to mention that besides acquiring skills and knowledge through conducting a community assessment, young people saw value in working with like-minded peers, having a strong A-YP, and working together with people they see as role models.

The Youth Board assessed the A-YP through both a validated scale and indicating their comfort level with the Adult Advisory Board and AYRC Support Team during mid-point evaluation on a Likert-scale. Furthermore, working together

with the Adult Advisory Board and AYRC Support Team was part of the interviews. Taking all these results together, the youth enjoyed working with adults. They felt comfortable asking questions and reaching out. This is a strong indication that the A-YP was a success and a vital part of AYRC.

Young people changed their view of health-related research through conducting their own research. The results of the validated scales show a mixed picture. Trust in Researchers increased significantly and Medical Mistrust Index nearly did not change. Nevertheless, young people reported gaining confidence in conducting health-related research during the qualitative interviews.

In conclusion, the project was feasible and successful based on the feedback of the Youth Board. The 5 Cs of PYD were promoted, the A-YP was a source for support for the young people and youth participants got more familiar with health-related research. Working together as a team of minority youth and the A-YP was important for the project's success.

5.3 Strengths and Limitations

This work used a mixed methods approach. Thus, influences of the program on the young people were assessed through standardized questionnaires, open-ended questions, and qualitative interviews. Through this approach the combination of the results of the different methods showed a holistic picture about the youth's opinion about AYRC and the impact of the project on them.

The quantitative part of this was mostly based on a Pre- and Post-Test design. The Post-Test was conducted at the Mid-Point of the project before the young people met with the researcher. Therefore, only the first part of the project was evaluated by the quantitative part and not the whole project. This limits this evaluation, because a big part of the project was the community assessment. Conducting a community

assessment promoted the 5 Cs according to the interviews. Furthermore, the time between Pre- and Post-Test would be longer and this could lead to more changes on the PYD scale.

This evaluation is heavily based on 5 Cs of PYD. Over time the 5 Cs get stronger by itself. Nevertheless, the development is not linear over the period of adolescence. The time frame of this evaluation may be too narrow to see improvement of the 5 Cs. Additionally, A-YP influences PYD to a full extent after one year (Grossman & Rhodes, 2002; Lerner et al., 2009). Thus, the exit questionnaire may be more meaningful.

This project used the SHORT PYD from October 2008, short version 1.3 (Lerner, 2008). This version differs slightly from newer versions of PYD scales like the 88-items PYD scale (Lerner et al., 2005b; Phelps et al., 2009) and the PYD Short Form (34 items) and PYD Very Short Form (17 items) (Geldhof et al., 2014a). Since the project used a Pre-Post-Test design the choice of assessment tool does not influence the results. Nevertheless, a shorter version would have saved time and the data would have had the same value. Some youth participants seemed to be fatigued by surveys at the time of the mid-point evaluation. A shorter survey could have motivated them to take more time to answer the questions. Additionally, some participants scored in Caring and Confidence a 4.00 of 4.00 at baseline and mid-point assessment. Therefore, the scale could not measure improvement for these young people. The project omitted all neutral answer options from the PYD scale. Through this step the young people had to choose what applies more to them. Thus, the scores would be different if the original answer options would have been included.

Interviews were recorded and detailed notes of the interview recordings were coded. Hence, there is a possibility that some details were lost. Nevertheless, detailed

notes were deemed appropriate for this project because the goal was to ask about the 5 Cs and feedback. Hence, detailed notes contain the necessary information. Furthermore, no double-coding was used due to time constraints. This leaves the possibilities that some important content of the interviews was overlooked or misinterpreted by the single coder. A recommendation would be to have the detailed notes coded by another coder for the end-evaluation of the project. Additionally, writing the interview guide, conducting most of the interviews, taking detailed notes on all recordings, and the coding and interpretation was all done by the author. Hence, this could lead to oversight of themes. As the author is part of the AYRC Support Team, the author could be biased to emphasize more positive feedback and interpret the data to support the claims.

The semi-structured, qualitative interviews were conducted by team members. Hence, the interviewed Youth Board members knew the interviewers and knew that they were heavily involved in the project. Thus, the possibility exists that the young people did not speak as freely about the project as they would have with a neutral interviewer. On the other hand, the young people were already familiar with the interviewer and this could have also led them to open up more.

The project was designed as a pilot project and was not intended to be generalizable. Hence, the number of participants was low (twelve), only one group in one city was established, and there was no control group. Thus, no control for influences from the outside or of group members existed.

5.4 Implications and Recommendations

In conclusion, based on the feedback of the Youth Board the AYRC was a success. Youth Board members thrived during the project through promotion of the 5 Cs. Although no significant improvement of the PYD score between baseline and

mid-point evaluation was observed, the interviews indicated that the Youth Board enhanced their 5 Cs and even showed traits that can be attributed to the 6th C Contribution.

Furthermore, the evaluation shows that it was feasible and acceptable to include African-American high school students from the Atlanta Metro area in research through a CBPR project. Until the end, youth stayed engaged in the project. Hence, this project shows that African-American adolescents can be partners in CBPR with the right support structure.

Recommendations for future projects would be to consider how to make it more sustainable. Young people mentioned that they would recommend the project to friends and additional topics like mental health should be targeted. Hence, expanding the project would be necessary to accomplish this. One solution would be to have a permanent home of the project. The pilot was conducted at Emory Rollins School of Public Health. A transition to an institution or organization which works with adolescents would secure its future. Furthermore, shortening the project to one year could allow to recruit two cohorts of people over two years. Each year new cohorts would join and hence, experienced young people would teach newcomers. This way a peer education component would be established. Senior participants could take on more responsible and the 5 Cs could be even more promoted.

Additionally, if the project could be transferred to a permanent place it would be a resource for researchers. Researchers could reach out to them to propose research and get feedback and partner with the young people. A prerequisite for a successful transmission would be sufficient funds and personnel support. Adolescents need guidance. A trained worker is necessary to oversee the project and keep in touch with the young people. It is important that young people are reminded of upcoming

meetings and tasks. Furthermore, to ensure a trustworthy youth-adult partnership this person should not change too often. Building trust is important for a successful A-YP.

New project cycles could also recruit different participants, for example, to work with a mixed group of different races and ethnicities and recruit a gender balanced group. Nevertheless, it should be considered how working together with people of the same race/ethnicity or gender can have an empowering effect.

In summary, this evaluation shows that AYRC is acceptable and feasible and young people benefit from participating in it. Furthermore, it shows that African-American high-school students can be research partners and it may be a new approach to tackle health disparities among minority youth.

6 References

Acevedo-Garcia, D., Osypuk, T. L., McArdle, N., & Williams, D. R. (2008). Toward a policy-relevant analysis of geographic and racial/ethnic disparities in child health. *Health Aff (Millwood), 27*(2), 321-333. doi:10.1377/hlthaff.27.2.321

Akiva, T., Cortina, K. S., & Smith, C. (2014). Involving youth in program decision-making: how common and what might it do for youth? *J Youth Adolesc, 43*(11), 1844-1860. doi:10.1007/s10964-014-0183-y

Alberga, A. S., Sigal, R. J., Goldfield, G., Prud'homme, D., & Kenny, G. P. (2012). Overweight and obese teenagers: why is adolescence a critical period? *Pediatr Obes, 7*(4), 261-273. doi:10.1111/j.2047-6310.2011.00046.x

Bogart, L. M., Wagner, G. J., Green, H. D., Jr., Mutchler, M. G., Klein, D. J., McDavitt, B., . . . Hilliard, C. L. (2016). Medical mistrust among social network members may contribute to antiretroviral treatment nonadherence in African Americans living with HIV. *Soc Sci Med, 164*, 133-140. doi:10.1016/j.socscimed.2016.03.028

Bowers, E. P., Li, Y., Kiely, M. K., Brittian, A., Lerner, J. V., & Lerner, R. M. (2010). The Five Cs model of positive youth development: a longitudinal analysis of confirmatory factor structure and measurement invariance. *J Youth Adolesc, 39*(7), 720-735. doi:10.1007/s10964-010-9530-9

Brekke, I. (2015). Health and educational success in adolescents: a longitudinal study. *BMC Public Health, 15*, 619. doi:10.1186/s12889-015-1966-0

Brody, G. H., Yu, T., Miller, G. E., & Chen, E. (2015). Discrimination, racial identity, and cytokine levels among African-American adolescents. *J Adolesc Health, 56*(5), 496-501. doi:10.1016/j.jadohealth.2015.01.017

Brown, L. D., Redelfs, A. H., Taylor, T. J., & Messer, R. L. (2015). Comparing the Functioning of Youth and Adult Partnerships for Health Promotion. *Am J Community Psychol, 56*(1-2), 25-35. doi:10.1007/s10464-015-9730-2

Callander, E. J. (2016). Pathways between health, education and income in adolescence and adulthood. *Arch Dis Child, 101*(9), 825-831. doi:10.1136/archdischild-2015-309721

Camino, L., & Zeldin, S. (2002). From Periphery to Center: Pathways for Youth Civic Engagement in the Day-To-Day Life of Communities. *Appl Dev Sci, 6*(4), 213-220. doi:10.1207/S1532480XADS0604_8

Catalano, R. F., Gavin, L. E., & Markham, C. M. (2010). Future directions for positive youth development as a strategy to promote adolescent sexual and reproductive health. *J Adolesc Health, 46*(3 Suppl), S92-96. doi:10.1016/j.jadohealth.2009.12.026

CDC. (2011). Disparities in diagnoses of HIV infection between blacks/African Americans and other racial/ethnic populations--37 states, 2005-2008. *MMWR Morb Mortal Wkly Rep, 60*(4), 93-98.

Ciocanel, O., Power, K., Eriksen, A., & Gillings, K. (2017). Effectiveness of Positive Youth Development Interventions: A Meta-Analysis of Randomized Controlled Trials. *J Youth Adolesc, 46*(3), 483-504. doi:10.1007/s10964-016-0555-6

Coughlin, S. S., & Smith, S. A. (2016). A review of community-based participatory research studies to promote physical activity among African Americans. *J Ga Public Health Assoc, 5*(3), 220-227.

Cuevas, A. G., O'Brien, K., & Saha, S. (2016). African American experiences in healthcare: "I always feel like I'm getting skipped over". *Health Psychol, 35*(9), 987-995. doi:10.1037/hea0000368

Dumontheil, I. (2016). Adolescent brain development. *Current Opinion in Behavioral Sciences, 10*, 39-44. doi:https://doi.org/10.1016/j.cobeha.2016.04.012

Eibich, P., Krekel, C., Demuth, I., & Wagner, G. G. (2016). Associations between Neighborhood Characteristics, Well-Being and Health Vary over the Life Course. *Gerontology, 62*(3), 362-370. doi:10.1159/000438700

English, D., Lambert, S. F., Evans, M. K., & Zonderman, A. B. (2014). Neighborhood racial composition, racial discrimination, and depressive symptoms in African Americans. *Am J Community Psychol, 54*(3-4), 219-228. doi:10.1007/s10464-014-9666-y

Evans-Agnew, R. (2016). Asthma Management Disparities: A Photovoice Investigation with African American Youth. *J Sch Nurs, 32*(2), 99-111. doi:10.1177/1059840515588192

Fuhrmann, D., Knoll, L. J., & Blakemore, S. J. (2015). Adolescence as a Sensitive Period of Brain Development. *Trends Cogn Sci, 19*(10), 558-566. doi:10.1016/j.tics.2015.07.008

Geldhof, G. J., Bowers, E. P., Boyd, M. J., Mueller, M. K., Napolitano, C. M., Schmid, K. L., . . . Lerner, R. M. (2014a). Creation of Short and Very Short Measures of the Five Cs of Positive Youth Development. *Journal of Research on Adolescence, 24*(1), 163-176. doi:doi:10.1111/jora.12039

Geldhof, G. J., Bowers, E. P., Mueller, M. K., Napolitano, C. M., Callina, K. S., & Lerner, R. M. (2014b). Longitudinal analysis of a very short measure of positive youth development. *J Youth Adolesc, 43*(6), 933-949. doi:10.1007/s10964-014-0093-z

Gestsdottir, S., & Lerner, R. M. (2007). Intentional self-regulation and positive youth development in early adolescence: findings from the 4-h study of positive youth development. *Dev Psychol, 43*(2), 508-521. doi:10.1037/0012-1649.43.2.508

Gluckman, P. D., & Hanson, M. A. (2006). Evolution, development and timing of puberty. *Trends in Endocrinology & Metabolism, 17*(1), 7-12. doi:https://doi.org/10.1016/j.tem.2005.11.006

Griesler, P. C., Hu, M. C., & Kandel, D. B. (2016). Nicotine Dependence in Adolescence and Physical Health Symptoms in Early Adulthood. *Nicotine Tob Res, 18*(5), 950-958. doi:10.1093/ntr/ntv149

Grossman, J. B., & Rhodes, J. E. (2002). The test of time: predictors and effects of duration in youth mentoring relationships. *Am J Community Psychol, 30*(2), 199-219. doi:10.1023/a:1014680827552

Hammond, W. P. (2010). Psychosocial correlates of medical mistrust among African American men. *Am J Community Psychol, 45*(1-2), 87-106. doi:10.1007/s10464-009-9280-6

Heck, K. E., & Subramaniam, A. (2009). *Youth Development Frameworks. [Monograph]*. 4-H Center for Youth Development. Davis, CA.

Hendricks, P. A. (1996). *Targeting Life Skills Model*. Ames: Iowa State University Cooperative Extension.

Hershberg, R. M., DeSouza, L. M., Warren, A. E., Lerner, J. V., & Lerner, R. M. (2014). Illuminating trajectories of adolescent thriving and contribution through the words of youth: qualitative findings from the 4-H Study of Positive Youth Development. *J Youth Adolesc, 43*(6), 950-970. doi:10.1007/s10964-014-0102-2

Hofferth, S. L., Reid, L., & Mott, F. L. (2001). The effects of early childbearing on schooling over time. *Fam Plann Perspect, 33*(6), 259-267.

Holliday, C. E., Wynne, M., Katz, J., Ford, C., & Barbosa-Leiker, C. (2016). A CBPR Approach to Finding Community Strengths and Challenges to Prevent Youth Suicide and Substance Abuse. *J Transcult Nurs*. doi:10.1177/1043659616679234

Holzer, J. K., Ellis, L., & Merritt, M. W. (2014). Why we need community engagement in medical research. *J Investig Med, 62*(6), 851-855. doi:10.1097/jim.0000000000000097

Hoyt, L. T., Chase-Lansdale, P. L., McDade, T. W., & Adam, E. K. (2012). Positive youth, healthy adults: does positive well-being in adolescence predict better perceived health and fewer risky health behaviors in young adulthood? *J Adolesc Health, 50*(1), 66-73. doi:10.1016/j.jadohealth.2011.05.002

Israel, B. A., Krieger, J., Vlahov, D., Ciske, S., Foley, M., Fortin, P., . . . Tang, G. (2006). Challenges and facilitating factors in sustaining community-based participatory research partnerships: lessons learned from the Detroit, New York City and Seattle Urban Research Centers. *J Urban Health, 83*(6), 1022-1040. doi:10.1007/s11524-006-9110-1

Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (1998). Review of community-based research: assessing partnership approaches to improve public health. *Annu Rev Public Health, 19*, 173-202. doi:10.1146/annurev.publhealth.19.1.173

Izumi, B. T., Peden, A. M., Hallman, J. A., Barberis, D., Stott, B., Nimz, S., . . . Capello, A. (2013). A community-based participatory research approach to developing the Harvest for Healthy Kids curriculum. *Prog Community Health Partnersh, 7*(4), 379-384. doi:10.1353/cpr.2013.0047

Jackson, C. J., Mullis, R. M., & Hughes, M. (2010). Development of a theater-based nutrition and physical activity intervention for low-income, urban, African American adolescents. *Prog Community Health Partnersh, 4*(2), 89-98. doi:10.1353/cpr.0.0115

Jacobs, E. A., Mendenhall, E., McAlearney, A. S., Rolle, I., Whitaker, E. E., Warnecke, R., & Ferrans, C. E. (2011). An exploratory study of how trust in health care institutions varies across African American, Hispanic and white populations. *Commun Med, 8*(1), 89-98.

Jacquez, F., Vaughn, L. M., & Wagner, E. (2013a). Youth as partners, participants or passive recipients: a review of children and adolescents in community-based participatory research (CBPR). *Am J Community Psychol, 51*(1-2), 176-189. doi:10.1007/s10464-012-9533-7

Jacquez, F., Vaughn, L. M., & Wagner, E. (2013b). Youth as Partners, Participants or Passive Recipients: A Review of Children and Adolescents in Community-Based Participatory Research (CBPR). *Am J Community Psychol, 51*(1), 176-189. doi:10.1007/s10464-012-9533-7

Jelicic, H., Bobek, D. L., Phelps, E., Lerner, R. M., & Lerner, J. V. (2007). Using positive youth development to predict contribution and risk behaviors in early adolescence: Findings from the first two waves of the 4-H Study of Positive Youth Development. *International Journal of Behavioral Development, 31*(3), 263-273. doi:10.1177/0165025407076439

John-Akinola, Y. O., & Nic-Gabhainn, S. (2014). Children's participation in school: a cross-sectional study of the relationship between school environments, participation and health and well-being outcomes. *BMC Public Health, 14*, 964. doi:10.1186/1471-2458-14-964

Jokela, M. (2015). Does neighbourhood deprivation cause poor health? Within-individual analysis of movers in a prospective cohort study. *J Epidemiol Community Health, 69*(9), 899-904. doi:10.1136/jech-2014-204513

Kara Dukakis, London, R. A., McLaughlin, M., & Williamson, D. (2009). Positive Youth Development: Individual, Setting and System Level Indicators. (Issue Brief: Positive Youth Development Indicators). *John W. Gardner Center for Youth and Their Communities*. Retrieved from

Kershaw, K. N., Diez Roux, A. V., Burgard, S. A., Lisabeth, L. D., Mujahid, M. S., & Schulz, A. J. (2011). Metropolitan-level racial residential segregation and black-white disparities in hypertension. *Am J Epidemiol, 174*(5), 537-545. doi:10.1093/aje/kwr116

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62*(6), 593-602. doi:10.1001/archpsyc.62.6.593

Kia-Keating, M., Santacrose, D. E., Liu, S. R., & Adams, J. (2017). Using Community-Based Participatory Research and Human-Centered Design to Address Violence-Related Health Disparities Among Latino/a Youth. *Fam Community Health, 40*(2), 160-169. doi:10.1097/fch.0000000000000145

Kost, K., Maddow-Zimet, I., & Arpaia, A. (2017). *Pregnancies, Births and Abortions Among Adolescents and Young Women in the United States, 2013: National and State Trends by Age, Race and Ethnicity*. Retrieved from https://www.guttmacher.org/report/us-adolescent-pregnancy-trends-2013

Kraemer Diaz, A. E., Spears Johnson, C. R., & Arcury, T. A. (2015). Perceptions that influence the maintenance of scientific integrity in community-based participatory research. *Health Educ Behav, 42*(3), 393-401. doi:10.1177/1090198114560016

Landstedt, E., Hammarstrom, A., & Winefield, H. (2015). How well do parental and peer relationships in adolescence predict health in adulthood? *Scand J Public Health, 43*(5), 460-468. doi:10.1177/1403494815576360

Lang, R., Kelkar, V. A., Byrd, J. R., Edwards, C. L., Pericak-Vance, M., & Byrd, G. S. (2013). African American participation in health-related research studies: indicators for effective recruitment. *J Public Health Manag Pract, 19*(2), 110-118. doi:10.1097/PHH.0b013e31825717ef

Langhout, R. D., & Thomas, E. (2010). Imagining participatory action research in collaboration with children: an introduction. *Am J Community Psychol, 46*(1-2), 60-66. doi:10.1007/s10464-010-9321-1

Larson, R., & Richards, M. H. (1991). Daily Companionship in Late Childhood and Early Adolescence: Changing Developmental Contexts. *Child Development, 62*(2), 284-300. doi:10.2307/1131003

LaVeist, T. A., Isaac, L. A., & Williams, K. P. (2009). Mistrust of Health Care Organizations Is Associated with Underutilization of Health Services. *Health services research, 44*(6), 2093-2105. doi:10.1111/j.1475-6773.2009.01017.x

Lerner, R. M. (2004). *Liberty: Thriving and civic engagement among America's youth*. Thousand Oaks, CA: Sage.

Lerner, R. M. (2005). *Promoting Positive Youth Development: Theoretical and Empirical Bases.* Paper presented at the Workshop on the Science of Adolescent Health and Development, National Research Council, Washington, DC.

Lerner, R. M. (2008). Positive Youth Development Student Questionnaire Short Version. Retrieved from https://cyfar.org/sites/default/files/PsychometricsFiles/Positive%20youth%20development%20student%20short%20%2810%20yrs%20and%20older%29_0_1.pdf

Lerner, R. M., Abo-Zena, M. M., Bebiroglu, N., Brittian, A., Lynch, A. D., & Issac, S. S. (2009). Positive Youth Development. Contemporary Theoretical Perspectives. In R. J. DiClemente, J. S. Santelli, & R. A. Crosby (Eds.), *Adolescent Health : Understanding and Preventing Risk Behaviors*. Hoboken, UNITED STATES: John Wiley & Sons, Incorporated.

Lerner, R. M., Almerigi, J. B., Theokas, C., & Lerner, J. V. (2005a). Positive Youth Development. A View of the Issues. *Journal of Early Adolescence, 25*(1), 10-16. doi:10.1177/02724316042732

Lerner, R. M., Lerner, J. V., Almerigi, J., Theokas, C., Phelps, E., Gestsdottir, S., . . . von Eye, A. (2005b). Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: Findings from the first wave of the 4-H Study of Positive Youth Development. *Journal of Early Adolescence, 25*(1), 17-71.

Lerner, R. M., Wang, J., Chase, P. A., Gutierrez, A. S., Harris, E. M., Rubin, R. O., & Yalin, C. (2014). Using relational developmental systems theory to link program goals, activities, and outcomes: the sample case of the 4-H Study of Positive Youth Development. *New Dir Youth Dev, 2014*(144), 17-30. doi:10.1002/yd.20110

Leung, M. W., Yen, I. H., & Minkler, M. (2004). Community based participatory research: a promising approach for increasing epidemiology's relevance in the 21st century. *Int J Epidemiol, 33*(3), 499-506. doi:10.1093/ije/dyh010

Lewis, K. M., Vuchinich, S., Ji, P., DuBois, D. L., Acock, A., Bavarian, N., . . . Flay, B. R. (2016). Effects of the Positive Action Program on Indicators of Positive Youth Development Among Urban Youth. *Appl Dev Sci, 20*(1), 16-28. doi:10.1080/10888691.2015.1039123

Lightfoot, A. F., Taggart, T., Woods-Jaeger, B. A., Riggins, L., Jackson, M. R., & Eng, E. (2014). Where is the faith? Using a CBPR approach to propose adaptations to an

evidence-based HIV prevention intervention for adolescents in African American faith settings. *J Relig Health, 53*(4), 1223-1235. doi:10.1007/s10943-014-9846-y

LoIacono Merves, M., Rodgers, C. R., Silver, E. J., Sclafane, J. H., & Bauman, L. J. (2015). Engaging and sustaining adolescents in community-based participatory research: structuring a youth-friendly community-based participatory research environment. *Fam Community Health, 38*(1), 22-32. doi:10.1097/fch.0000000000000057

Luk, A. L., Au, A. M., Leong, K. M., Zhu, M. M., Lau, G. B., Wong, T. C., & Lei, N. W. (2011). Effectiveness of a positive youth development program for secondary 1 students in Macau: a pilot study. *ScientificWorldJournal, 11*, 1089-1100. doi:10.1100/tsw.2011.97

Mainous, A. G., 3rd, Smith, D. W., Geesey, M. E., & Tilley, B. C. (2006). Development of a measure to assess patient trust in medical researchers. *Ann Fam Med, 4*(3), 247-252. doi:10.1370/afm.541

Malone, R. E., Yerger, V. B., McGruder, C., & Froelicher, E. (2006). "It's like Tuskegee in reverse": a case study of ethical tensions in institutional review board review of community-based participatory research. *Am J Public Health, 96*(11), 1914-1919. doi:10.2105/ajph.2005.082172

Martin, J. A., Hamilton, B. E., Osterman, M. J. K., Driscoll, A. K., & Mathews, T. J. (2017). *Births: final data for 2015*. Retrieved from Hyattsville, MD:

Mayer-Davis, E. J., Lawrence, J. M., Dabelea, D., Divers, J., Isom, S., Dolan, L., . . . Wagenknecht, L. (2017). Incidence Trends of Type 1 and Type 2 Diabetes among Youths, 2002-2012. *N Engl J Med, 376*(15), 1419-1429. doi:10.1056/NEJMoa1610187

McDaniel, T. C., Wilson, D. K., Coulon, S. M., Hand, G. A., & Siceloff, E. R. (2015). Neighborhood Social Predictors of Weight-related Measures in Underserved African Americans in the PATH Trial. *Ethn Dis, 25*(4), 405-412. doi:10.18865/ed.25.4.405

McDavitt, B., Bogart, L. M., Mutchler, M. G., Wagner, G. J., Green, H. D., Jr., Lawrence, S. J., . . . Nogg, K. A. (2016). Dissemination as Dialogue: Building Trust and Sharing Research Findings Through Community Engagement. *Prev Chronic Dis, 13*, E38. doi:10.5888/pcd13.150473

Miller, K. S., Fasula, A. M., Poulsen, M. N., Parker, J. T., Zackery, S., Wyckoff, S. C., & Clark, L. F. (2009). Sexual Health Disparities Among African American Youth and the Need for Early Prevention Approaches: Parenting and Youth Development Programs as Strategies for Pre-Risk Prevention. *The Journal of Equity in Health, 2*(1), 19-28.

Minkler, M. (2004). Ethical challenges for the "outside" researcher in community-based participatory research. *Health Educ Behav, 31*(6), 684-697. doi:10.1177/1090198104269566

Monson, K., & Thurley, M. (2011). Consumer participation in a youth mental health service. *Early Interv Psychiatry, 5*(4), 381-388. doi:10.1111/j.1751-7893.2011.00309.x

Mosavel, M., Simon, C., van Stade, D., & Buchbinder, M. (2005). Community-based participatory research (CBPR) in South Africa: engaging multiple constituents to shape the research question. *Soc Sci Med, 61*(12), 2577-2587. doi:10.1016/j.socscimed.2005.04.041

National Academies of Sciences, E., & Medicine. (2017). *Communities in Action: Pathways to Health Equity*. Washington, DC: The National Academies Press.

National Research, C., & Institute of Medicine Committee on Integrating the Science of Early Childhood, D. (2000). In J. P. Shonkoff & D. A. Phillips (Eds.), *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington (DC): National Academies Press (US) Copyright 2000 by the National Academy of Sciences. All rights reserved.

Oman, R. F., Vesely, S., Aspy, C. B., McLeroy, K. R., Rodine, S., & Marshall, L. (2004). The potential protective effect of youth assets on adolescent alcohol and drug use. *Am J Public Health, 94*(8), 1425-1430.

Oman, R. F., Vesely, S. K., Aspy, C. B., Tolma, E. L., Gavin, L., Bensyl, D. M., . . . Fluhr, J. D. (2013). A longitudinal study of youth assets, neighborhood conditions, and youth sexual behaviors. *J Adolesc Health, 52*(6), 779-785. doi:10.1016/j.jadohealth.2012.12.005

Oman, R. F., Vesely, S. K., McLeroy, K. R., Harris-Wyatt, V., Aspy, C. B., Rodine, S., & Marshall, L. (2002). Reliability and validity of the youth asset survey (YAS). *J Adolesc Health, 31*(3), 247-255.

Oman, R. F., Vesely, S. K., Tolma, E. L., Aspy, C. B., & Marshall, L. D. (2010). Reliability and validity of the youth asset survey: an update. *Am J Health Promot, 25*(1), e13-24. doi:10.4278/ajhp.081009-QUAN-242

Oscós-Sánchez, M. Á., Lesser, J., & Oscós-Flores, L. D. (2017). Using Community Based Participatory Action Research to Define Positive Youth Development Program Goal Priorities with a Latino Community. *Issues in Mental Health Nursing, 38*(6), 520-522. doi:10.1080/01612840.2016.1230159

Patton, G. C., & Viner, R. (2007). Pubertal transitions in health. *The Lancet, 369*(9567), 1130-1139. doi:https://doi.org/10.1016/S0140-6736(07)60366-3

Percy-Smith, B. (2007). 'You think you know? ... You have no idea': youth participation in health policy development. *Health Educ Res, 22*(6), 879-894. doi:10.1093/her/cym032

Phelps, E., Zimmerman, S., Warren, A. E. A., Jeličić, H., von Eye, A., & Lerner, R. M. (2009). The structure and developmental course of Positive Youth Development (PYD) in early adolescence: Implications for theory and practice. *Journal of Applied Developmental Psychology, 30*(5), 571-584. doi:https://doi.org/10.1016/j.appdev.2009.06.003

Power to Decide. (2017). Georgia Data. Retrieved from https://powertodecide.org/what-we-do/information/national-state-data/georgia

Price, J. H., Khubchandani, J., McKinney, M., & Braun, R. (2013). Racial/ethnic disparities in chronic diseases of youths and access to health care in the United States. *Biomed Res Int, 2013*, 787616. doi:10.1155/2013/787616

Reagan, P. B., Salsberry, P. J., Fang, M. Z., Gardner, W. P., & Pajer, K. (2012). African-American/white differences in the age of menarche: accounting for the difference. *Soc Sci Med, 75*(7), 1263-1270. doi:10.1016/j.socscimed.2012.05.018

Reboussin, B. A., Green, K. M., Milam, A. J., Furr-Holden, C. D., & Ialongo, N. S. (2014). Neighborhood environment and urban African American marijuana use during high school. *J Urban Health, 91*(6), 1189-1201. doi:10.1007/s11524-014-9909-0

Salimi, Y., Shahandeh, K., Malekafzali, H., Loori, N., Kheiltash, A., Jamshidi, E., . . . Majdzadeh, R. (2012). Is Community-based Participatory Research (CBPR) Useful? A Systematic Review on Papers in a Decade. *Int J Prev Med, 3*(6), 386-393.

Satterwhite, C. L., Torrone, E., Meites, E., Dunne, E. F., Mahajan, R., Ocfemia, M. C., . . . Weinstock, H. (2013). Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sex Transm Dis, 40*(3), 187-193. doi:10.1097/OLQ.0b013e318286bb53

Sawyer, S. M., Afifi, R. A., Bearinger, L. H., Blakemore, S.-J., Dick, B., Ezeh, A. C., & Patton, G. C. (2012). Adolescence: a foundation for future health. *The Lancet, 379*(9826), 1630-1640. doi:https://doi.org/10.1016/S0140-6736(12)60072-5

Search Institute. (1997). The Developmental Assets Framework. Retrieved from https://www.search-institute.org/our-research/development-assets/developmental-assets-framework/

Simovska, V. (2007). The changing meanings of participation in school-based health education and health promotion: the participants' voices. *Health Educ Res, 22*(6), 864-878. doi:10.1093/her/cym023

Skinner, A. C., Ravanbakht, S. N., Skelton, J. A., Perrin, E. M., & Armstrong, S. C. (2018). Prevalence of Obesity and Severe Obesity in US Children, 1999-2016. *Pediatrics*. doi:10.1542/peds.2017-3459

Theokas, C., & Lerner, R. M. (2006). Observed Ecological Assets in Families, Schools, and Neighborhoods: Conceptualization, Measurement, and Relations With Positive and Negative Developmental Outcomes. *Appl Dev Sci, 10*(2), 61-74. doi:10.1207/s1532480xads1002_2

UN General Assembly. (1989). *Convention on the Rights of the Child*. Geneva.

Vaughn, L. M., Wagner, E., & Jacquez, F. (2013). A review of community-based participatory research in child health. *MCN Am J Matern Child Nurs, 38*(1), 48-53. doi:10.1097/NMC.0b013e31826591a3

Veinot, T. C., Campbell, T. R., Kruger, D. J., & Grodzinski, A. (2013). A question of trust: user-centered design requirements for an informatics intervention to promote the sexual health of African-American youth. *J Am Med Inform Assoc, 20*(4), 758-765. doi:10.1136/amiajnl-2012-001361

Villa-Torres, L., & Svanemyr, J. (2015). Ensuring youth's right to participation and promotion of youth leadership in the development of sexual and reproductive health policies and programs. *J Adolesc Health, 56*(1 Suppl), S51-57. doi:10.1016/j.jadohealth.2014.07.022

Viner, R. M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., & Currie, C. (2012). Adolescence and the social determinants of health. *The Lancet, 379*(9826), 1641-1652. doi:https://doi.org/10.1016/S0140-6736(12)60149-4

Wang, L. Y., & Michael, S. L. (2015). Long-term health and medical cost impact of smoking prevention in adolescence. *J Adolesc Health, 56*(2), 160-166. doi:10.1016/j.jadohealth.2014.08.025

Wight, R. G., Aneshensel, C. S., Botticello, A. L., & Sepulveda, J. E. (2005). A multilevel analysis of ethnic variation in depressive symptoms among adolescents in the United States. *Soc Sci Med, 60*(9), 2073-2084. doi:10.1016/j.socscimed.2004.08.065

Wong, N. T., Zimmerman, M. A., & Parker, E. A. (2010). A typology of youth participation and empowerment for child and adolescent health promotion. *Am J Community Psychol, 46*(1-2), 100-114. doi:10.1007/s10464-010-9330-0

Woodgate, R. L., & Sigurdson, C. M. (2015). Building school-based cardiovascular health promotion capacity in youth: a mixed methods study. *BMC Public Health, 15*, 421. doi:10.1186/s12889-015-1759-5

Xia, R., Stone, J. R., Hoffman, J. E., & Klappa, S. G. (2016). Promoting Community Health and Eliminating Health Disparities Through Community-Based Participatory Research. *Phys Ther, 96*(3), 410-417. doi:10.2522/ptj.20140529

Zeldin, S., Christens, B. D., & Powers, J. L. (2013). The psychology and practice of youth-adult partnership: bridging generations for youth development and community change. *Am J Community Psychol, 51*(3-4), 385-397. doi:10.1007/s10464-012-9558-y

Zeldin, S., Krauss, S. E., Collura, J., Lucchesi, M., & Sulaiman, A. H. (2014). Conceptualizing and measuring youth-adult partnership in community programs: a cross national study. *Am J Community Psychol, 54*(3-4), 337-347. doi:10.1007/s10464-014-9676-9