REPRODUCTIVE COERCION: A GAMING INTERVENTION FOR ADOLESCENT FEMALES

by

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Introduction

One in three adolescent females experience relationship abuse at least once in their lifetime (McCauley et al., 2014). As a result, these women are more likely to engage in risky sexual behaviors including having multiple sex partners, inconsistent condom use, having unintended pregnancies, and developing sexually transmitted diseases (STDs). One way to combat this issue is to teach the youth about reproductive coercion (RC).

Many might initially think of RC as synonymous with rape or sexual abuse, however, it is a much broader concept and needs to be a topic of discussion with all adolescents. RC is a form of relationship abuse that can increase the risk of unintended pregnancies (Hill et al., 2019). More specifically, RC is related to behavior that interferes with contraception use and pregnancy coercion. Examples of RC include hiding, withholding, or destroying a partner's oral contraceptives; breaking or poking a hole in a condom or removing a condom during sex in an attempt to promote pregnancy; not withdrawing when that was agreed upon beforehand; and removing vaginal rings, contraceptive patches, or intrauterine devices (IUDs) (Hill et al., 2019). Furthermore, RC can contribute to health disparities including high unintended pregnancy rates and sexually transmitted infections (STIs). Being able to understand and address RC is essential to equip adolescents with the resources needed to protect their reproductive rights.

The term RC was formally introduced in 2010 when the director of adolescent and young adult medicine at UPMC Children's Hospital of Pittsburgh, Elizabeth Miller, identified and studied this form of abuse (Casastpete, 2021). Miller found that one-third of women who have reported experiencing RC have also experienced physical abuse from that same partner. Furthermore, her team also discovered that homicide is a leading cause of death for pregnant

women in abusive relationships and physical abuse increases when a woman becomes pregnant (Casastpete, 2021).

However, RC can occur to anyone regardless of their background. A study done in Northern California found that 12% of sexually active high school females surveyed reported recent RC. Of these women, results showed that 14.9% were African American, 14.8% were Hispanic, and 3.7% were White women (Hill et al., 2019). Another study found that the prevalence of physical intimate partner violence was higher among bisexual women (61%) and lesbian women (44%) compared with their heterosexual counterparts (35%) (McCauley et al., 2014). It was also found that lesbian adolescents (ages 15-20) are six times more likely and bisexual adolescent females are three times more likely than heterosexual adolescents to be forced by a man to have sexual intercourse (McCauley et al., 2014). This is an alarming trend showing that there is a vulnerability among sexual minority women. A study conducted by Kraft et al (2021) found that the most common forms of RC adolescent females reported were their partner telling them not to use birth control, threatening to leave if they did not get pregnant, and taking off or breaking a condom so they would get pregnant. These reported behaviors from their partners show various ways RC can occur in a relationship. Lastly, a study conducted by Northridge et al (2017) found that one in five women reported having been coerced into having sex without a condom. This same study also found that girls who had reported RC are five times more likely also to report intimate partner violence. All of these studies highlight the unfortunate effects that RC can have on adolescent females and prove that there needs to be a system in place to educate young women about safe sex, pregnancy risks, STIs, coercion, etc.

Gamification can enhance and provide awareness of RC among adolescent females. In doing so, there can be a creation of interactive learning experiences using interactive scenarios,

quizzes, etc. based on elements that were positive in other gamification apps. The use of gamification can empower young adolescent females ages 14-19 years to be able to recognize signs of RC, advocate themselves for their reproductive rights, and gain knowledge from access to resources within the application. This approach can not only make learning fun and engaging but also ensure that adolescents are gaining real-life scenarios and retaining the information given. There is a need to create more gaming applications for creating learning more achievable in adolescents. Only nine apps were deemed to have adequate grading of recommendations assessment, development, and evaluation (GRADE) framework (Muehlmann & Tomczyk, 2023). This highlights the gap in the availability of high-quality educational application tools to be able to equip adolescents to navigate issues like RC.

Purpose Statement

This paper aims to provide an overview of RC focusing on adolescent females and the best method of providing pregnancy prevention education through increased knowledge and understanding of RC with created modules that will be used in the spring to create a gaming intervention.

Literature Review

My literature review consisted of two main searches. My primary one was conducted this past summer and focused primarily on adolescents and the most effective learning styles. This was done simultaneously with my partner who focused her search on gaming interventions. Her search will be useful in the spring for phase two of this whole project implementation. My second literature review consisted of searches regarding reproductive coercion as a whole, digital interventions with sexual behavior, different learning theories, and a program called “COPE: Creating Opportunities for Parent/Personal Empowerment.”

During my first literature review, I read over 15 articles. The first study's main purpose was to assess the level of metacognition among adolescents in a rural community and identify their learning styles. This study focused on 200 adolescents (9^{th} and 10^{th} graders) going to school in a rural community. This study found that students learn well by activity, learning by doing, and with visuals. They also found that they like to learn by notes, charts, maps, graphs, films, videos, etc. (Kaur, Saini, & Vig, 2017). This study highlighted the importance of teens knowing what their learning style is and how to incorporate that into their everyday learning and studying. The next study we looked at had a very similar purpose but was not done in the rural community. This study focused on 85 adolescents (13-18 years old) within both private and public schools in Chennai, India. This study found that the preferred learning style was hands-on/kinesthetic followed by visual learning and then auditory (Kancharla & Gopal, 2020). The next article focused on a peer education approach. The purpose of this study was to determine the impact of the peer education approach on adolescents. This was a narrative literature review within itself, but we discovered that peer education programs mainly focus on harm reduction information, prevention, and early intervention, which is perfect for a topic like RC (PubMed, 2013). The next article discussed how teenagers learn through play and fun. The purpose of this study was to determine if play-based learning is beneficial for adolescents like it is in early childhood education. This was an observational study, and interviews were conducted. There were 175 classroom observations done and 100 interviews conducted within the 25 weeks of school. The study found that teenagers do learn better when there is "fun" and "play" involved. The playful learning discussed consists of creativity, hands-on, exploratory, and fun. These students found that playful learning led to increased motivation to learn and do their work (Johnston, Wildy, & Shand, 2022). The last article related to learning styles focused on how college students learn.

This study focused on 790 sophomores in a blended English learning course. They found that it is feasible to apply learning styles to differentiate various disciplines in students' blending learning processes and that overall, the students learned best with hands-on activities (Hu et al., 2021).

My part of the summer literature review didn't yield as many results as the literature review for phase two of this project, but it played an important role in laying the foundation of our project. Most of the literature research conducted found that adolescents learn best when they are in a hands-on environment. These articles also proved that adolescents learn well in a peer-education approach. This information was helpful to me when planning out the information modules for female adolescents aged 14-19.

During part two of my literature review that I conducted during the fall I reviewed over 15 articles about reproductive coercion, digital interventions, different learning theories, and COPE. The American College of Obstetricians and Gynecologists wrote a research article about RC in 2013 that stated that 25% of adolescent females reported that their abusive male partners were trying to get them pregnant through interference with planned contraception which forced the females to hide their contraceptive methods. This same article found that the majority of pregnancy associated homicides were committed by an intimate partner. Another article I reviewed written by Miller et al. (2023) found that most adolescents already fear retaliation at such a young age and, therefore, don't report any kind of intimate partner violence or inappropriate sexual behavior. They have also found that these kids mistrust adults and school systems or have shame and embarrassment and, therefore, don't come forward when they should.

The next part of this review focused on digital interventions with sexual behavior. One article found a lot of evidence that supports beginning sex education in elementary school that is

longer in duration than most current programs are (Goldfarb and Lieberman, 2020). An article written by Markham et al (2012) found that 15% of seventh graders have experienced sexual intercourse and that the US teen birth rate remains the highest among all developed countries. Both of these articles emphasize the need for a more effective sexual education class for early adolescents. Another study I reviewed discovered that dating often begins in middle school and coincides with puberty onset and when youth may lack cognitive skills for healthy dating (Peskin et al., 2019). Lastly, Tortolero et al (2012) found that almost 40% of US teens who are sexually active reported not using a condom during their last intercourse. All of these articles reinforce this project's idea that there needs to be more focus on sexual education, especially regarding adolescents and even younger kids. The current programs do not emphasize the consequences of having unprotected sex or having sex too early like our modules will.

For the last part of my final literature review I spent most of my time looking at different learning theories like theories of reasoned action/theory of planned behavior and the social cognitive theory. I also read four articles about COPE (creating opportunities for personal empowerment). These articles were based on the social cognitive theory and discussed helpful things for young Hispanic pregnant women, NICU parents, depressed and anxious teens, and also discussed healthy lifestyles for high school adolescents. These articles were good examples for me to look through when creating my modules as they taught me about catering to my specific audience and gave me some ideas regarding what to incorporate in my modules or at least how to incorporate them.

From this part of my literature review, it was determined that six modules were needed and that these modules will be guided by social cognitive theory. We aim to make the modules 60 minutes in duration due to supporting evidence from the current literature.

Results-Modules

My results for this project include six modules that are going to be used in phase two of the project. They will be 60 minutes in length and used in the gaming app created by my partner. Module one is titled "Definition of RC." This module will include the definition of RC, the background of RC, the prevalence of RC, the three different types, and an overview of the two central topics of RC: power and control. The definition will be taught to them in words that they can easily comprehend. The background will explain who Elizabeth Miller is and why and how she came up with RC. The types will also be explained along with examples of each. The prevalence section will involve some alarming statistics and also remind adolescents that RC can happen to anyone regardless of age, background, and gender. Lastly, this module will discuss power and control within relationships and how to recognize these traits and be empowered as well.

Module two is titled "Negative Health Sequalae of RC." This module will be the most in-depth due to there being a lot of possible negative effects that can happen if affected by RC. This module will include an overview of STIs, unintended pregnancy, PTSD, and depression. This module discusses chlamydia, genital herpes (HSV), gonorrhea, HIV, HPV, and syphilis. It talks about what each one is, what the symptoms look like, what the treatment is (if any), how to control it, how it is spread, and any other important facts. It also discusses what unintended pregnancy is and how it happens. Lastly, it goes over what PTSD is and what depression is. It talks about how it can occur and how to get help if you need it.

Module three is titled "Pregnancy and Contraception." This module discusses different forms of birth control options and contraception methods as well as an overview of the reproductive system. The first part discusses barrier and non-barrier methods of contraception.

Barrier methods include condoms, diaphragms, cervical caps, contraceptive sponges, and spermicide. These are safe forms of contraception and have no serious side effects. They also help protect against STIs. Non-barrier methods are birth control forms that use hormones to prevent pregnancy. Examples of these include birth control pills, implants, patches, shots, vaginal rings, and intrauterine devices (IUDs). These methods work by preventing ovulation, thickening cervical mucus, or thinning the uterine lining. Later in the module, it discusses methods that she can control. This is important regarding RC because it reminds the girl there are ways she can have control. These methods include IUDs, birth control shots, and the birth control implant within the skin. The guy has no control over these methods because the shot is given once every three months at the doctor's office, the implant can be left in for around three years, and the IUD is completely internal and lasts a while as well. This module also includes a section about methods that are discrete. It then has a reproductive system overview section that describes things like the ovaries, fallopian tubes, uterus, and sperm.

Module four is named "Recognizing Power and Control in Relationships." This module discusses what a healthy relationship looks like and then what an unhealthy relationship looks like. Signs of a healthy relationship discussed include open communication, trust, respect for one another, supporting each other, clear boundaries, compromise, and making time for each other. Signs of an unhealthy relationship discussed included control by one partner over the other, hostility, dishonesty, dependence, intimidation, physical violence, sexual violence, lack of communication, lack of trust, lack of respect, lack of support, lack of boundaries or not obeying mutually set boundaries, and poor conflict resolution.

Module five is called "Sexual Skills to Improve Communication and RC." This is a shorter module so far but will be made bigger during phase two. It will be easier to come up with

more of this module once we know what kind of app or gaming intervention we will be using. So far this module provides examples of communicating in a relationship and avoiding RC by role-playing, performing skits, and participating in creative writing. I think this module will be awkward at first for high school-aged kids, but I think most of them will warm up to the idea and see how it will help them in healthy relationships.

Module six is the last one and we titled it "You Are in Control of Your Body." This module discusses ways that girls can improve their self-esteem, set long and short term goals for themselves, and have healthy adolescent relationships. Some ways that are discussed in this module for girls to increase their self-esteem include mirror exercises, which involve looking at yourself in the mirror every morning and picking out at least two to three things you like or love about yourself that day, being confident, choosing friends wisely because good friends lift you up, be open to trying new things (hairstyles, makeup, clothes), complimenting others, and possibly keeping a journal. The second part is about goal building. The girls can make a list of goals for themselves, a set of goals/wants/desires/needs for a potential relationship, or if they are already in a relationship they can make a mutual goal list with their partner. The next part discusses healthy relationships again, but this time primarily focused on adolescent-aged relationships. This section discusses mutual respect, trust, CONSENT, individuality, safe boundaries, anger control, and good communication. Lastly, this module ends with a wrap-up activity which might be a quiz, writing activity, or some other form of comprehensive game that will conclude the entirety of the class.

Discussion

This project has taught me so much in just the past six months; I have learned all about reproductive coercion and all the different types. I went into this project not having a clue what

RC was or how it impacted people. I am proud to say that I am now somewhat of an expert when it comes to RC and that I feel confident enough to teach adolescents or even adults who need to know about it. I am so glad that this topic and my mentor found me because I believe I will be a better labor and delivery nurse and overall women's health care worker because of this project. I will now look for signs of relationship abuse during patient care, know when and how to ask the tough but necessary questions, and educate my patients when needed. If I decide to go back to school in the future, I will plan to obtain my nurse-midwifery degree and I know my knowledge of RC will help me get there and better care for each and every patient I have the privilege to care for.

It is hard to discuss everything that this project has taught me, but here are some statistics that I learned through my literature search that stuck with me and that I hope stick with everyone who reads my paper or learns about RC. I learned that one in five women have been coerced into having sex without a condom by their partner. I learned that adolescent females who have experienced RC are five times more likely to report intimate partner violence (IPV). I learned that there is an undeniable association between RC and the risk of STIs, depression, substance abuse, and IPV later in adulthood. Lastly, I learned that bisexual and lesbian adolescent females are at a much greater risk of RC than their heterosexual peers.

I believe that this project has made me a more competent nurse and a more empowered woman. I used to think of topics like sexual education classes, contraception, condoms, etc. as embarrassing and would avoid talking about them with anyone, especially men; I believe this is how most of the population is and I am proud to now be on the opposite side and freely discuss these much-needed topics openly. From here on out I will try my best to fight the stigma that surrounds RC and topics like it and I will educate anyone I can. My hope is that RC eventually

becomes a nonexistent topic because it so rarely happens in the future. I hope that everyone who participates in our game with these modules that I have made feels empowered as a woman and takes control of her sex life and knows that there is always someone out there willing to help them get out of a bad situation. I hope that these women know it is not their fault and there are healthy relationships out there. I already consider this project one of my greatest accomplishments, but I will truly call it a success when it is officially implemented and helps at least one woman either get out of an unhealthy situation or make her feel more empowered or confident within her relationship.

Conclusion

In conclusion, reproductive coercion is a topic that I now have a depth of knowledge about and am very interested in. RC needs to be talked about more and eventually in every sexual education curriculum in either middle schools and or high schools in the United States and even worldwide. I believe this project takes that first big step. My modules put together with my partner's gaming intervention is a big breakthrough within the RC world and will reach hundreds of adolescents. RC affects so many people worldwide and this number needs to be significantly decreased. I hope that by the time I have a daughter she will never face RC, but if she does, everything I have learned from this project will get through to her and she will feel empowered and in control and be in a safe space to get help. I hope this same thing for all women living in our world. I am forever grateful to my mentor Dr. Kovar for showing me how important knowing about reproductive coercion is and for helping me every step of the way. I cannot wait to see where this project lands after my partner does her part in the spring. I look forward to witnessing all of the headway we make in this specific area of study.

References

American Colllege of Obstetrics and Gynecologists . (2013, February). *Reproductive and Sexual Coercion*. Www.acog.org. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2013/02/reproductive-and-sexual-coercion

Casastpete. (2021, September 3). *Reproductive Coercion is Abuse*. CASA Pinellas. https://www.casapinellas.org/reproductive-coercion-blog/

Goldfarb, E. S., & Lieberman, L. D. (2021). Three Decades of Research: The Case for Comprehensive Sex Education. *Journal of Adolescent Health*, *68*(1), 13–27. https://doi.org/10.1016/j.jadohealth.2020.07.036

Hill, A., Jones, K., McCauley, H., Tancredi, D., Silverman, J., & Miller, E. (2019). Reproductive Coercion and Relationship Abuse Among Adolescents and Young Women Seeking Care at School Health Centers. *Journal of Pediatric and Adolescent Gynecology*, *134*, 351-359. https://10.1016/j.jpag.2019.07.005

Johnston, O., Wildy, H., & Shand, J. (2022, May). *Teenagers learn through play too: communicating high expectations through a playful learning approach*. ResearchGate. https://www.researchgate.net/publication/360855197_Teenagers_learn_through_play_too_communicating_high_expectations_through_a_playful_learning_approach

Kancharla, K., & Gopal, C. (2020, March). *Learning Style Preference Among Adolescent School Students*. ResearchGate. https://www.researchgate.net/publication/341979851_Learning_style_preference_among_adolescent_school_students

Kaur, G., Saini, S., & Vig, D. (2017). *An appraisal of the Metacognitive skills and learning*

styles of rural adolescents. i-Scholar. https://www.i-scholar.in/index.php/ijhw/article/view/162030

Kraft, J., Snead, M., Brown, J., Sales, J., Kottke, M., Timajchy, K., & Goedken, P. (2021). Reproductive Coercion Among African American Female Adolescents: Associations with Contraception and Sexually Transmitted Diseases. *Journal of Women's Health*, *30*(3), 429-437. https://10.1089/jwh.2020.8627

Markham, C. M., Tortolero, S. R., Peskin, M. F., Shegog, R., Thiel, M., Baumler, E. R., Addy, R. C., Escobar-Chaves, S. L., Reininger, B., & Robin, L. (2012). Sexual Risk Avoidance and Sexual Risk Reduction Interventions for Middle School Youth: A Randomized Controlled Trial. *Journal of Adolescent Health*, *50*(3), 279–288. https://doi.org/10.1016/j.jadohealth.2011.07.010

McCauley, H., Dick, R., Tancredi, D., Goldstein, S., Blackburn, S., Silverman, J., Monasterio, E., James, L., & Miller, E. (2014). Differences by Sexual Minority Status in Relationship Abuse and Sexual and Reproductive Health Among Adolescent Females. *Journal of Adolescent Health*, *55*, 652-658. https://10.1016/j.jadohealth.2014.04.014

Miller, E., Karen Trister Grace, Silverman, J. G., Decker, M. R., & Alexander, K. A. (2023). Preventing reproductive coercion in adolescence. *The Lancet Child & Adolescent Health*, *8*(2). https://doi.org/10.1016/s2352-4642(23)00293-6

Muehlmann, M., & Tomczyk, S. (2023). Mobile Apps for Sexual and Reproductive Health Education: a Systematic Review and Quality Assessment. *Current Sexual Health Reports*, *15*. https://doi.org/10.1007/s11930-023-00359-w

Northridge, J., Silver, E., Talib, H., & Coupey, S. (2017). Reproductive Coercion in High School-Aged Girls: Associations with Reproductive Health Risk and Intimate Partner

Violence. *Journal of Pediatric and Adolescent Gynecololgy*, *30*, 603-608. https://10.1016/j.jpag.2017.07.003

Peskin, M. F., Markham, C. M., Shegog, R., Baumler, E. R., Addy, R. C., Temple, J. R., Hernandez, B., Cuccaro, P. M., Thiel, M. A., Gabay, E. K., & Tortolero Emery, S. R. (2019). Adolescent Dating Violence Prevention Program for Early Adolescents: The Me & You Randomized Controlled Trial, 2014–2015. *American Journal of Public Health*, *109*(10), 1419–1428. https://doi.org/10.2105/ajph.2019.305218

Tortolero, S. R., Markham, C. M., Peskin, M. F., Shegog, R., Addy, R. C., Escobar-Chaves, S. L., & Baumler, E. R. (2010). It's Your Game: Keep It Real: Delaying Sexual Behavior with an Effective Middle School Program. *Journal of Adolescent Health*, *46*(2), 169–179. https://doi.org/10.1016/j.jadohealth.2009.06.008