



A Formative Evaluation of a Video Game to Educate on Gender-Based Violence in Low- and Middle-Income Countries

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A Formative Evaluation of a Video Game to Educate
on Gender-Based Violence in Low- and Middle-Income Countries

Ailsa Welch Gilliam

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Abstract

Gender-based violence (GBV) impacts one in three women in the world. GBV encompasses physical, psychological, economic, emotional and other abuses within the home, on the street, at work, and in other social structures. Traditional GBV prevention programs in low- and middle-income countries can be heavily reliant on in-person contact, which may cause limitations in both scalability and reach, particularly during the global COVID-19 pandemic. This thesis examines the requirements, development, and formative evaluation of an experiential video game-based learning tool for GBV prevention for adults in low- and middle-income countries.

Video games are often maligned as negative influences. However, their use as educational technology for experiential learning and for inspiring social change has seen success in numerous studies. While a number of children's video games relevant to GBV prevention have been studied in the first world context directed at children, there is a dearth of the same for adults in low- and middle-income countries. The literature review examines the requirements for creation of a preventative tool to challenge social norms that justify GBV. Considerations include an empathic, trauma-informed response, cultural relevance, and scalability challenges. While video game prototypes have been created by the author for many different cultures, a Haitian Creole version was developed, and it forms the basis of this evaluation. As a low-income country, Haiti's recent growth in technology adoption suggests that a video game solution may be timely. In this patriarchal society, cultural acceptance of GBV is high, with 17% of women believing physical abuse is justified in events such as them burning the dinner.

A formative evaluation using a prototype video game, designed purposely for Haitian garment factory workers, was conducted over a number of phased test cycles. Initially tested by Haitian college interns, then pedagogy professionals, GBV experts, garment factory workers, and a larger randomized group of Haitian university students, four hypotheses were explored:

- H-1: Using a narrative-based video game to learn about the scope of GBV and available resources will be effective for the audience, despite literacy challenges.

- H-2: Cultural relevance in the video game is important.
- H-3: Role-playing stories of a domestic violence victim in a video game is an effective way to arouse community empathy for victims.
- H-4: Scalability: Recent technology progress and social media uptake in Haiti will facilitate scalable access to the video game.

Based on a comprehensive keyword search for peer-reviewed studies, this study is believed to be the first formative evaluation of video game-based technology for GBV prevention in Haiti. In addition, based on a wide search of peer-reviewed literature, this study is the first to use the Interpersonal Reactivity Index (IRI) and the Domestic Violence Myth Acceptance Scale (DVMAS) in Haitian Creole as part of the evaluation process.

Results suggest a video game that uses narrative to educate on GBV could be effective in Haiti, given the technology adoption rate. Study participants supported the method as well, and evidence implied that the hypotheses are valid based on this formative evaluation. Evaluation methodology using curated survey questions, in addition to the IRI and DVMAS, showed challenges and merits, and this exercise was useful for refining this procedure of evaluating the game prototype. Additional exploration and evaluation with other professionals are advisable as the prototype is further refined and developed in further formative evaluation phases.



A Haitian market scene with women selling items, as featured in the video game prototype.

© 2020 Sherohub LLC, by artist Jayda Murray.

Author's Biographical Sketch

Ailsa Gilliam is a social entrepreneur with a passion for leveraging technology to combat domestic violence and foster women's empowerment globally. A long-term technology executive, this Harvard Extension School Master's candidate is a 20-year veteran of commodities and investment banking businesses. Outspoken about the need for societal transformation to support women in their critical role in society, Ailsa considers the technology and management skills learned in her corporate life, as well as the lessons acquired in her personal escape from domestic violence, as the ideal stepping-stones to contribute to GBV prevention through technology solutions.

This study aligns with that same passion for raising awareness of the subtleties of domestic violence through the research of best practice for a video game as a scalable solution, providing players in low-income countries with strategies for safety and freedom from abuse. Inspiration for Ailsa's work comes from seeking to benefit and empower others through everything she learned from her experience with domestic violence.

A British expat, long-time New York resident, and veritable Francophile, Ailsa is grateful to be Mom to four amazing visionaries and step-Grandma to two cherubs. Ailsa's favorite philosophy for life is: "Work wisely, play with zeal, pick your battles, eat quality, and sleep like a log!"

Dedication

I would like to dedicate this thesis to my children, Alan Jr., Zachary, Sebastian, and Ava of whom I am immensely proud. Their inner strength and quality of character warms my heart on a daily basis.

To all those women who, like me, represent the one in three domestic violence victims or survivors, I dedicate this work and my future work in this field. To those of us who made it out alive, I say find your freedom to rebuild yourself and heal your children, and then, if or when we are able, let us all take our knowledge, contribute ways to end this destructive cycle of violence, and transform the world for the better!

“The one who plants trees, knowing that he will never sit in their shade, has started to understand the meaning of life.”

—Rabindranath Tagore

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To my parents, I give thanks for their steady and unwavering love, and to my children, for their patience as I worked my way through the Master's degree process. I am beyond grateful to my brother-in-law, Rodney Gilliam, without whose babysitting support, my whole Harvard experience would have been impossible as a single parent.

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Thanks also to my kind friends, Godha Bapuji, Bertrand Byrne, and Jeff Larsen, and also to Meghan Hardwick, who took the time to comment on my thesis drafts.

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comprehensive work on the character stories, Marie-Benedicte Loze for her content collaboration and input, and Jayda Murray for the amazing artwork on display throughout the prototype. I am appreciative of the support of Christine Coupet Jaques in her voiceover work for the role of Sofi. I thank the Centre de Promotion des Femmes Ouvrières for their support and product feedback. Thanks go to Diderot Musset of Surtab for his patience in performing System Integration Testing on his tablets with me, and for the gracious loan of tablets. To my Sherohub LLC summer interns, Schimide Nevelus, Alex BonHomme, and Jeffnie Jean Louis, from the Haitian Education and Leadership Program, I express my appreciation for their diligent work on testing the Haitian video game prototype (and the French one too!).

I thank Dr. Karen Schrier, who provided much encouragement and pointed me toward her work on empathy; to Susanna Pollack, President, and DJ Moreau, Senior Director of Games for Change, for their interest and encouragement in the Sherohub mission, as well as Kirill Krayushkin, senior game designer at Gameloft Paris, who gave useful and encouraging feedback on the functionality of my prototypes.

Finally, and importantly, my gratitude goes to the garment factory workers and other participants who gave of their limited free time to play the prototype and provide valuable (and very encouraging) input.

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Table of Contents

Frontispiece.....	v
Author’s Biographical Sketch.....	vi
Dedication.....	vii
Acknowledgments.....	viii
List of Tables.....	xiv
List of Figures.....	xv
Glossary of Acronyms.....	xvi
Definition of Terms.....	xviii
Preface.....	1
“The Room”.....	1
Chapter I. Gender-Based Violence: An Introduction and Review of Literature.....	6
Consequences of Abuse.....	7
Consequences for Families and Future Generations.....	9
Consequences for Society.....	10
Variations in Applications of Legislation Adds Vulnerability.....	11
Attitudes that Contribute to the Impact of Abuse.....	13
Patriarchal Thinking.....	13
Justification Theory.....	15
Victim Shaming.....	15
Challenging Abusive Thinking and Justification.....	16
Summary.....	18
Chapter II. Exploring Video Games as a Preventive Tool.....	19
Intervention Limitations.....	19
Technology: A Potential Solution.....	21
The Ethics of Using Video Games for GBV Prevention.....	24
Using Video Games for Behavioral Change.....	26

	Narrative Communication and Video Games	27
	The Effectiveness of Video Games for Learning	29
	The Power of Narrative in Visual Novel-Format Video Games.....	30
Chapter III.	Constructing a Video Game Focused on Preventing GBV	32
	GBV Prevention Programs as a Guideline.....	32
	Trauma-Informed Content Considerations	35
	Learning from Existing Video Games That Address GBV Prevention..	38
Chapter IV	GBV in Haiti: Cultural Relevance	41
	Creating a Video Game for Haitian Garment Factory Workers	45
	The Psychological Importance of Cultural Relevance.....	49
	Scalability in Low-Income Countries	54
Chapter V.	Methodology	58
	Video Game Prototype Development Description	60
	Sample Dialogue (Translated from Creole).....	65
	Screenshots from the Video Game	66
	Formative Evaluation Phases.....	69
	Evaluation of the Game and Hypotheses	70
	Use of Established Surveys.....	73
	Translation Methodology.....	77
	System Integration Testing	78
	Proxies: Sherohub LLC’s Haitian Summer Interns	78
	Share Hope Pedagogy Experts Weigh In.....	78
	CPFO Professional Agency Support-Specific Feedback.....	79
	Recruitment and Activity of Sample Participants.....	79
	Survey Adjustments and Data Treatment Considerations	82
	Evaluation of the Hypotheses via Survey	84
Chapter VI.	Pre-Target Population Rounds of Feedback Collection.....	87
	System Integration Testing Results	87
	UAT Phase 1: Sherohub LLC’s Haitian Summer Interns.....	87
	UAT Phase 2: Share Hope Professional Feedback	89
	Survey Responses from Share Hope.....	90

	Summary of Responses to Questions on Likelihood of Hypotheses Being Validated	91
	UAT Phase 3: Video Game Feedback from CPFO	94
Chapter VII.	Results From Sample Population Testing.....	96
	Demographic Data of the Garment Factory Workers.....	96
	Evaluating the Hypotheses Against the Results.....	97
	Hypothesis 1: Video-Game Roleplay is Effective for GBV Prevention.....	98
	Participants with Prior Exposure to GBV Training	101
	Hypothesis 2: Cultural Relevance in the Video Game is Important.....	102
	Hypothesis 3: A Video Game Will Be an Effective Tool for the Audience.....	103
	Reflections on Participant Character Selection Behavior.....	104
	Hypothesis 4: Technology and Social Media Progress in Haiti Will Facilitate Video Game Adoption	106
	Summary	108
	IRI and DVMAS Data Analysis Results.....	110
	Interviews with Garment Factory Workers.....	115
	Recommendations from Interviewees.....	116
Chapter VIII.	Discussion and Recommendations	118
	Recommendations for Future Research	122
	Research Limitations	123
Appendix 1.	Sample of Defect Tracking Spreadsheet.....	125
Appendix 2.	Garment Factory Worker Participants Data Tables	126
	Demographics	126
	Technology	127
	Linguistic Skills	128
	Knowledge of DV Prior to Playing Game	128
Appendix 3.	Creole Versions: Links to Prototype, Instructional Video, Consent Form, and Surveys	129
Appendix 4.	Oral Script for Recruitment (in English)	130

Appendix 5. Dokiman oral pou rekrite patisipan yo (Oral Script for Recruitment in Creole).....	131
Appendix 6. Interpersonal Reactivity Index (in English).....	132
Appendix 7. Indis Reaktivite Intèpèsònèl (IRI in Haitian Creole).....	134
Appendix 8. Domestic Violence Myth Acceptance Scale (DVMAS) in English	137
Appendix 9. Domestic Violence Myth Acceptance Scale (Haitian Creole).....	139
Appendix 10. Share Hope Letter of Cooperation	140
Appendix 11. Haitian Education and Leadership Program (HELP) Letter Agreeing to Participation	141
Appendix 12. Interview Transcripts	142
Appendix 13. Video Release Form (in English).....	145
Appendix 14. Video Release Form (in Creole)	146
References.....	147

List of Tables

Table 1.	Characters in the Video Game Prototype.....	63
Table 2.	Themes and Representation of Abuse Scenarios in the Game	66
Table 3.	Number of Survey Questions to Support Hypotheses	71
Table 4.	Testing the Hypotheses Using the Pre- and Post-Game Survey Questions	72
Table 5.	Garment Factory Workers Survey Summary.....	81
Table 6.	Pre-Survey Questions Mapped to the Hypotheses.....	85
Table 7.	Post-Survey Questions Mapped to the Hypotheses	86
Table 8.	Defects Found in Test Phase 1	87
Table 9.	Hypothesis Validation: Phase 2 UAT	89
Table 10.	Responses to Questions on Relevance of the Game to Haitian Life.....	103
Table 11.	Character Stories Played.....	106
Table 12.	Communication Methods For Game Sharing	107
Table 13.	Number of Questions Addressing Each Hypothesis.....	108
Table 14.	Analysis and Summary of Hypotheses	109
Table 15.	DVMAS Difference Scores By Group	110
Table 16.	IRI Average By Group.....	112
Table 17.	DVMAS Difference By Age Group	113

List of Figures

Figure 1.	Design Research Study Process	59
Figure 2.	Home Page/Start Screen Showing All 8 Characters Minus Sofi	66
Figure 3.	Introduction of Mariwòz on the Main Street of the Factory Complex	67
Figure 4.	Introduction of Emilyya, Another Character	67
Figure 5.	Screen for Selection of Characters' Stories	68
Figure 6.	A Scene in One of the Stories	68
Figure 7.	Selection Choices, With Buttons to Access Voiceover for Each Option. ...	68
Figure 8.	Formative Evaluation Process Participants.....	70
Figure 9.	UAT Phase 2 Share Hope Survey.....	90
Figure 10.	Perception of Victim Shame	100
Figure 11.	Likelihood of Reporting GBV	100
Figure 12.	IRI to DVMAS Difference for Prior Participants of GBV Training	101
Figure 13.	Characters' Stories Played First.....	104
Figure 14.	Group IRI Results	112
Figure 15.	Age vs. DVMAS Difference.....	113
Figure 16.	Group DVMAS Results	114
Figure 17.	IRI to DVMAS Difference.....	115

Glossary of Acronyms

ACES	Adverse Childhood Experiences (report)
CEDAW	The Convention on the Elimination of All Forms of Discrimination Against Women
CPFO	Centre de Promotion des Femmes Ouvrières
DHS	Demographic Health Survey Program
DV	Domestic Violence
DVMAS	Domestic Violence Myth Acceptance Scale
EBP	Evidence Based Practices
GBV	Gender-Based Violence
HNP	Haiti National Police
ICT	Information Communications Technology
ICT4D	Information Communications Technology for Development
IHE	Institut Haïtien de l'Enfance
IPV	Intimate Partner Violence
IRI	Interpersonal Reactivity Index
IRB	Institutional Review Board
NGO	Non-Governmental Organization
Ni3	None in Three
PSA	Public Service Announcement
PSN	Sony PlayStation
PTSD	Post-Traumatic Stress Disorder
SASA	Start Awareness Support Action (a community mobilization intervention to prevent violence against women)
SDG	Sustainable Development Goals
SGBV	Sexual and Gender Based Violence
SONAPI	Société Nationale des Parcs Industriels

TIC	Trauma-Informed Care
UK	United Kingdom
UN	United Nations
USD	United States Dollar
VAW	Violence Against Women

Definition of Terms

This section provides definitions of terms, and highlights terms that the reader can expect to see referenced. Terms related to abuse are also used in this paper.

Abuse is a manifestation of the imbalance of power and the control that one person may hold over another person, and this occurs no matter which genders are involved in the relationship. Every individual deserves equality, the right to live a life free of abuse, and to have a sense of self-empowerment. Abuse can occur regardless of gender or age. Given the disproportionate amount of abuse experienced globally by women and girls, this thesis specifically focuses on abuse experienced by women. Parallel projects include gender-diverse responses to abuse. The focus of this thesis does not negate the abuse or pain experienced by others on the gender spectrum.

Domestic Violence (DV): A term used largely to define violence occurring within a home.

Intimate partner violence (IPV) is a non-gender-specific term, defined as “any behavior within an intimate relationship (married, unmarried, and live-in) that causes physical, psychological, or sexual harm to those in that relationship.”¹

Gender-Based Violence (GBV): The European Commission defines GBV as “violence directed against a person because of that person’s gender or violence that affects persons of a

¹ P. Patra, J. Prakash, B. Patra, & P. Khanna, “Intimate partner violence: Wounds are deeper,” *Indian Journal of Psychiatry* 60, no. 4 (2018): 494–498. Available from: https://doi.org/10.4103/psychiatry.IndianJPsychiatry_74_17.

particular gender disproportionately.”² It further states that GBV “affects mostly women and girls.” GBV includes domestic violence, rape, harassment, and female genital mutilation. The European Commission states that it also includes forced marriage and online abuse, such as cyber harassment.

Violence Against Women (VAW): The United Nation’s Declaration on the Elimination of Violence against Women provides a broad definition of Violence Against Women (VAW), stating that it is “any act of Gender-Based Violence (GBV) that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life.”³ In their 2019 study, Rempel et al. embellish further to include other abuse types. They stated, “in addition to physical, sexual, and psychological violence, women may experience emotional; verbal; financial; spiritual or cultural; and criminal harassment/stalking”.⁴

Terminology on abuse, as defined by international bodies, is used widely in this thesis, and studies referencing it are also used. The terms GBV and VAW are sometimes used interchangeably in the literature.

² “What is Gender-Based Violence?” Available from: https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/gender-based-violence/what-gender-based-violence_en. Accessed 8/10/2020.

³ UN General Assembly, “Declaration on the Elimination of Violence against Women,” 1994. Retrieved on 10/01/2020 from <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N94/095/05/PDF/N9409505.pdf?OpenElement>.

⁴ E. Rempel, L. Donelle, J. Hall, & S. Rodger, “Intimate Partner Violence: A Review of Online Interventions,” *Informatics for Health and Social Care* 44, no. 2 (2019): 204-219, DOI: 10.1080/17538157.2018.1433675.

Preface

Academic interests can sometimes be driven by personal experience. Such is the case in this instance. I consider myself very fortunate that my children and I survived domestic violence. The experience brought forth a passion in me to help others avoid its plight, or if they are unlucky enough to find themselves in an abusive situation, to exit safely and with support.

I have shared my personal encounter with domestic violence while speaking on many stages and panels about the potential for video games as a scalable, educational tool of domestic violence prevention. Given that domestic violence perpetuates under ignorance, I am comfortable to shed some light on my own experience of domestic violence—the inspiration for my work in this thesis.

“The Room”

“Birds chirping, leaves rustling, the heat rose, but the breeze was so delicious. With eyes closed, the room was a tranquil delight; a place to savor with a blissfully comfortable couch and the sense of being out in nature. With your eyes open, the sunroom was a less inviting prospect. The perfect place for a summer afternoon nap was cluttered with toys, with a dusty log pile left over from a mild winter. There was barely room to navigate past stacks of stored beach chairs and a messy table, to be able to reach the oasis; the sofa.

The sofa, an old dilapidated three-seater from the ‘70s, covered with hideous tartan, was a much-loved friend and comfort. Opening one’s eyes whilst reclined on the sofa, if you were at the correct angle, gave a view of the peaceful green walls and the verdant yard outside; the grapevine taking command of the rhubarb patch and engulfing the poorly tended tomato plants. Indeed, the sunroom was a bit of paradise in the wild, inside and out; ripe for the best of the best summer afternoon naps on the sagging, slightly dusty sofa.

Was the sunroom perhaps the only sanctuary in a house of war? Elsewhere, memories, flashbacks, rich with fear and confusion, were in the walls, the furniture, and the air of every other room, even the laundry room.

The house would be a home, she had thought, on the day it became theirs; a place to be filled with joy, the laughter of children, happy moments and peace. Instead, in one corner of the bedroom was the memory of feet dangling, being raised high and choked for daring to ask for the volume of the TV to be turned down, a dressing room where an iPhone was smashed when she tried to call 911 as his hands were wrapped around her neck. The sofa, behind which he purposefully hid the double stroller so she would struggle through the airport on a business trip with two young boys, was old now. The leather was scuffed. The shower door that he shattered when he broke down the bathroom door to put her in a chokehold; now fixed but never would close properly afterward, so that every time she bathed her daughter, she had a reminder of that day. So many memories in so many rooms!

But fear and confusion can be chased away with knowledge, and she felt herself very blessed and fortunate to have stumbled across some books; covert aggression, the author called it. Covert aggression: everything was intentional! Night after night, quietly reading under the covers once the monster had fallen asleep, she awoke to her truth. The good times were not real. The bad times were the reality, and the good times were the method of gathering ammunition in preparation for the next explosion.

One day, an innocuous lie woke her up fully; he was literally trying to change her memories and perception of reality. The fog of cognitive dissonance suddenly cleared. The children didn't know that in their innocent remarks, they had proven him a liar. Worse, he spent two days trying to convince her how awful she was, resorting to stonewalling, aggression, threats to her life when her reaction didn't suit, and a smear campaign with her friends and church. She woke up! Once awake, that 17-year-long fog dissipated; she was back!

The kitchen, with the fridge that still evidenced his punch mark, became the room of revelation. The family computer had been syncing up with his phone. iMessage told all; so many messages evidencing his lies, his intentions to kill her, his intentions to "destroy her spiritually and mentally," they were all there. The stonewalling and intermittent threats continued. Daily she went to work, and daily she returned home, fearful, heart racing, with a can of pepper spray in

one hand and a panic alarm in the other; rushing to the bedroom to lock the door and push a heavy armoire against it.

The house was cleansed one day, with the help of a domestic violence support agency and the local police. The path to freedom was strewn with perils; landmines even: the tire slashing, the day he accused her of adultery, threatening to kill her, and she fled to the Connecticut hotel with the children. There was the mind manipulation of the children; brutal, blatant in the goal of turning them against her. She plodded through it all.

Then one day, she awoke in the sunroom, her sanctuary, the one room innocent of challenging memories. The birds were chirping; the wind was rustling through the leaves. The sun was dancing on the ceiling. The room was a mess, but her children were calm, she was at peace and he was gone; banished to a monitored messaging service, with four orders of protection to keep the distance.

The passage of time opened the windows of the house to fresh air, and fresh laughter. It washed the walls of their ugly memories, painting new ones instead; the joy of children able to run in and out freely with friends, cuddles and affection allowed, no longer constrained. Little by little, their souls healed, and their hearts forgave the predator for being a predator...forgave from a distance...while she persistently worked toward final legal liberation.”

To read more, watch for my upcoming book!⁵

⁵ Look for updates at www.sherohub.com.

My personal experiences, which encompass physical and psychological abuse, with gaslighting, smear campaigns, and the mortal danger of exit, is not so different than the experiences of many domestic violence survivors. My entanglement with an abuser was traumatic in many ways, but it occurred in a relatively supportive state in the United States, where I experienced helpful police officers, extensive agency assistance, and mostly effective legal processes. It was an occurrence in which education level counted in the fight to protect oneself, as I represented myself, *pro se*, for a large share of my prolonged six-year journey to total liberation from his control. It caused me to reflect on how such an experience might translate in a less-developed country where an abuse victim may not have the benefit of an education to know how to navigate a legal system, where legal reporting and support structures may be less evident or nonexistent, and where patriarchal thinking may be even more entrenched than in my own Western culture.

As a response to my experiences, I intend to leverage technology to create a scalable way to educate women on their rights and resources for their empowerment, and to engender understanding in the community to support abuse victims, rather than to engage in victim-shaming. My vision for this concept is global, and its purpose is to create widespread social impact. It is a labor of love to do this formative evaluation of my Haitian video game prototype.

I spent time in Haiti with Cynthia Petterson at her organization, Share Hope, which works tirelessly to enrich garment factory workers' lives through academic and health programs. The organization's work was universally appreciated by the workers. In 2018, I observed one of their classes in collaboration with the organization Centre de Protection des Femmes Ouvrières (CPFO). The class taught GBV awareness at the Port-au-Prince SONAPI Industrial Park to 25 garment factory workers. Witnessing the profound effect of women awakening to the definition

of healthy versus unhealthy relationships was particularly touching. In a strongly patriarchal environment where family financial responsibility is shouldered by women as primary wage earners, abuse stories are numerous, and the empowerment the participants received from attending the class was palpable. But with resource limitations, how could one empower more?

The idea of creating a scalable, easily disseminated, and culturally appropriate video game was embraced by those running the class; as it turned out, attending that class became the inspiration for my first non-anglophone video game prototype. From there, this experience only became reality when my young neighbor, a talented artist, offered artwork to facilitate creation of the video game. I also had the good fortune to meet with a notable Haitian author who was willing to adventure through a different style of writing with me.

I am earnestly hopeful that the fire to generate social impact, which was ignited within me through the exit from my abuser, lights a candle of hope for those still in an abusive situation, and that the earnestness with which I pursue this work is an inspiration for whomever needs it.

—Ailsa Gilliam

Chapter I
Gender-Based Violence:
An Introduction and Review of Literature

For many women and girls, the threat [of violence] looms largest where they should be safest—in their own homes.
—UN Secretary-General António Guterres, 2020⁶

Gender-based violence (GBV) was described by U.N. Secretary-General António Guterres as a “global pandemic” in his 2018 statement to mark the International Day for the Elimination of Violence Against Women.⁷ The issue is so pervasive that recent data show that one in three women in the world experience physical or sexual violence by a partner or non-partner.⁸

Abuse has a multidimensional nature; physical harm and visible health impact is only part of the picture. GBV can take numerous forms. It is not limited solely to physical abuse;

⁶ António Guterres, UN Secretary General, in his 2020 Covid-19 Response address. Available from <https://www.un.org/en/un-coronavirus-communications-team/make-prevention-and-redress-violence-against-women-key-part>. Accessed 10/27/2020 .

⁷ António Guterres, UN Secretary General, from 2018 speech on International Day for the Elimination of Violence against Women. Available from: <https://www.un.org/sg/en/content/sg/statement/2018-11-19/secretary-generals-remarks-international-day-elimination-violence>. Accessed 10/27/2020 .

⁸ World Bank, “Violence Against Women and Girls.” 2018. Available from <http://www.worldbank.org/en/topic/socialdevelopment/brief/violence-against-women-and-girls>. Accessed 08/10/2020.

GBV can be physical, emotional, sexual, or psychological.⁹ It can appear as financial control or even technology-based abuse.

The prevalence of GBV increases in times of crisis. With the financial, emotional, and health-related tensions caused by the 2020 coronavirus pandemic, GBV has shown signs of escalation. Mandated lockdowns have further isolated and trapped women in already abusive homes.¹⁰ In a number of countries, domestic violence reports and emergency calls surged 25% after social distancing measures were enacted.¹¹ The consequences of this crisis make the increase of an already serious problem all the more concerning.

Consequences of Abuse

The consequences of GBV are far-reaching. GBV directed toward women, whether overt or covert, at home, on the street, or at work, has a pervasive impact on their livelihood and well-being, with short- and long-term effects on the victim's mental and physical health.¹² The impacts can be serious: "Psychological abuse and stalking contribute uniquely to the prediction of [Post Traumatic Stress Disorder (PTSD)] and depression symptoms, even after controlling for the effects of physical violence, injuries, and sexual coercion."¹³

⁹ S. G. Smith, X. Zhang, K. C. Basile, et al., "The National Intimate Partner and Sexual Violence Survey (NISVS) 2015 data brief." Atlanta: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2018.

¹⁰ Guterres, 2020 Covid-19 Response.

¹¹ UN Women. "Explainer. How Covid-19 Impacts Women and Girls." 2020. Available from <https://interactive.unwomen.org/multimedia/explainer/covid19/en/index.html>. Accessed 11/1/2020.

¹² M. Devries, et al. "Global health. The global prevalence of intimate partner violence against women," *Science*, 340 (2013): 1527-1528.

¹³ M. B. Mechanic, T. L. Weaver, and P. A. Resick, Mental health consequences of intimate partner abuse: a multidimensional assessment of four different forms of abuse. *Violence Against Women*, 14, no. 6 (2008): 634–654. <https://doi.org/10.1177/1077801208319283>.

The psychological trauma experienced from the mistreatment associated with GBV can affect the victim in ways such as having feelings of shame. From impoverished refugees to the wives of well-paid executives, shame is a factor that can prevent a victim from seeking or receiving the help they need to exit the danger in their lives. In their study called *Shame in the Narratives of Women Affected by Intimate Partner Violence* (IPV), Thaggard and Montayre refer to the impact of feelings of shame on mental health post-IPV, often leading to PTSD and shame that becomes a barrier to seeking help while in the abusive situation.¹⁴ Other mental health implications with lasting consequences may also occur as the repeated trauma of abuse occurs.

Studies in developing countries conclude that “the health impact of GBV on women can be as high as some of the leading causes of injury.”¹⁵ The physical impact of GBV on the victim can be dire.¹⁶ Elevated risk of death is a key factor of abuse. According to a 2018 report by the United Nations Office on Drugs and Crime, 58% of the 87,000 women intentionally killed in 2017 were killed by an intimate partner or family member.¹⁷ That is 137 women globally, every day of 2017, whose lives were ended at the hands of a current or former intimate partner; someone they should have been able to trust. The risk varies regionally; data shows women in Africa run the greatest GBV-related risk of mortality.¹⁸

¹⁴ S. Thaggard, and J. Montayre, “There was no-one I could turn to because I was ashamed”: Shame in the narratives of women affected by IPV. *Women’s Studies International Forum*, 74,(2019): 218–223. <https://doi.org/10.1016/j.wsif.2019.05.005>.

¹⁵ Devries, “Global health,” 1527-1528.

¹⁶ S. G. Smith, “National Intimate Partner and Sexual Violence Survey.”

¹⁷ UNODC, “Global study on homicide: Gender-related killing of women and girls.” 2018. Available from: https://www.unodc.org/documents/data-and-analysis/GSH2018/GSH18_Gender-related_killing_of_women_and_girls.pdf. Accessed 10/27/2020 .

¹⁸ UNODC, “Global Study, 2018.”

Consequences for Families and Future Generations

GBV can have a wide-reaching impact, not just on the immediate victim of the abuse, but also on others in the family. In *The Overlap Between Child Maltreatment and Women Battering*, Edleson noted that 25 studies that examined families with known spousal abuse also identified child maltreatment. “[The studies] found the overlap to be in the range of 30 percent to 60 percent of families with children.”¹⁹ Contemporaneous trauma to children in domestic violence situations does not end the impact to the family; lasting and intergenerational impacts can occur.

The physical and psychological trauma from abuse can perpetuate for generations. The Adverse Childhood Experiences (ACES) report, which investigated the relationship between various childhood abuses and adult health risk factors and diseases, evidences the physical ramifications that children raised in abusive homes may experience throughout their lives in the form of poor health and illnesses.²⁰ There is also a high risk that children who are raised in an abusive home or observe abuse may become abusers or victims later in life. Theories about this vary; a study by Forke et al. discusses the likelihood that children who witness IPV may later model the abusive behavior they see. They concluded that “Social Learning Theory is commonly applied to explain the cycle of intergenerational violence, suggesting that children typically model the aggressive behaviors of same-gender role models.”²¹

¹⁹ J. L. Edleson, “The overlap between child maltreatment and woman battering,” *Violence Against Women*, 5, no. 2 (2016): 134-154.

²⁰ V. J. Felitti, et al., “The Adverse Childhood Experiences (ACE) Study,” *American Journal of Preventative Medicine*, 2018. Available from <https://www.ajpmonline.org/action/showPdf?pii=S0749-3797%2898%2900017-8>.

²¹ C. Forke, et al., “Witnessing intimate partner violence as a child: How boys and girls model their parents’ behaviors in adolescence,” *Child Abuse & Neglect*, 84 (2018): 241-252.

In addition, a genetic transfer of stress occurs that can subsequently affect future generations. Research by Rachel Yehuda on epigenetics and the transgenerational transfer of stress through DNA supports evidence that stress experienced by GBV victims may pass down in the same way that those who suffered in the Holocaust passed traces of stress in their DNA to their next generations.²² Similarly, another study on pregnant women who were present near the World Trade Center incident in 2001 (a study in which the author of this thesis participated) showed a transgenerational impact of stress transmitted from mother to child.²³ The impact of abuse is not restricted to the immediate victim, but it touches those around them.

Consequences for Society

GBV also has a sizable impact on society, and has been analyzed in various ways. The effect on the victim and those around them is wide-ranging. Morrison and Orlando stated:

Previous studies estimating the socioeconomic costs of GBV have documented the impact of GBV on earnings due to death and lost productivity, job loss, lost productivity of the abuser due to incarceration, and loss of tax revenues due to death and incarceration.²⁴

While it is difficult to attribute a definite number to the impact, the World Bank suggests that the “economic costs of lost productivity due to domestic violence conservatively range from 1.2 to 2 percent of GDP—about most governments’ spending on primary education in

²² R. Yehuda, “Are Different Biological Mechanisms Involved in the Transmission of Maternal Versus Paternal Stress-Induced Vulnerability to Offspring?” New York: Mount Sinai School of Medicine, 2011. Available from <https://doi-org.ezp-prod1.hul.harvard.edu/10.1016/j.biopsych.2011.07.001>. Accessed 5/6/2017.

²³ R. Yehuda, et al., Transgenerational effects of PTSD in babies of mothers exposed to the World Trade Center attacks during pregnancy, *Journal of Clinical Endocrinology & Metabolism* 90 (2005): 4115–4118.

²⁴ A. R. Morrison, and M. B. Orlando, “The costs and impacts of gender-based violence in developing countries: Methodological considerations and new evidence.” 2005. Available from http://gender.careinternationalwikis.org/_media/morrisonorlandogenderbasedviolence.pdf. Accessed 08/20/2020.

developing countries.”²⁵ On an individual level, GBV’s impact touches some who may be unaware of the abuse, such as employers ignorant of the rationale for an employee’s poor attendance.

GBV has a global impact; it impacts whole communities; it inflicts lasting trauma and mental and physical damage, not only to the victim but to bystanders as well. Baron-Cohen asserted in his book *The Science of Evil* that “we should be mindful that unempathetic acts can have long-term consequences.”²⁶ Such acts include demeaning behavior, sexual abuse, and DV. GBV influences generations, insidiously propagating from one generation to the next through learned behavior and genetics. Given the fact that one in three women globally is currently touched by some form of this abuse,²⁷ and her children, her community, and future generations are also impacted, it is no exaggeration to state that the problem is vast and multidimensional. Leaving so many in such a vulnerable state means GBV must be considered a crisis.

Variations in Application of Legislation Adds Vulnerability

The vulnerability of a GBV victim can be further exacerbated by legalities, depending on their home state. Legal protection may not be easy to access. While global laws to protect women from GBV exist, ratification and application vary. Protection from DV and abuse is detailed in various international laws, including the Convention on the Elimination of All Forms

²⁵ World Bank, “enGENDER IMPACT: Addressing Gender-Based Violence.” Available from <https://www.worldbank.org/en/topic/gender/publication/engender-impact-addressing-gender-based-violence>. Accessed 11/1/2020.

²⁶ S. Baron-Cohen, *The Science of Evil: On Empathy and the Origins of Cruelty*. (New York: Basic Books, 2012), 165.

²⁷ UNIFEM, “Not a minute More. Ending Violence Against Women.” 2003. Available from <https://www.un.org/ruleoflaw/blog/document/not-a-minute-more-ending-violence-against-women/>. Accessed 07/10/2020.

of Discrimination Against Women (CEDAW), the International Covenant on Civil and Political Rights, and the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women. CEDAW is the most notable of the international laws in this domain; 189 countries have ratified the law.²⁸ International laws have not been ratified in every country in the world. Differences also exist in the levels of commitment and enactment between participating countries.

DV and abuse are also defined in country-specific laws, which vary in content, implementation, and effectiveness. The World Bank states:

Based on an analysis of 141 countries, the share of countries with laws to protect women against domestic violence increased from 71 percent to 76 percent between 2013 and 2017. But legal protection remains much weaker for specific types of domestic violence. For sexual violence experienced at home at the hand of an intimate partner or family member, laws are lacking in more than one in three countries. For domestic economic violence, half of the countries do not have specific legislation. For two in three countries, unmarried intimate partners are not protected under the laws.²⁹

Domestic law addressing DV is absent in more than 40 countries in the world and social norms may permit physical or verbal abuse.³⁰ Enactment of legal statutes against abuse of women varies and has nuances, often influenced by social norms and religion. Even in countries that are considered high income, application of the law protecting a person from GBV can be dependent on the judge of the day and their interpretation of the law determined by “individual

²⁸ UN Treaty Collection, “Convention on the Elimination of All Forms of Discrimination against Women.” Status as of 12/08/2020. Available from https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-8&chapter=4&lang=en. Accessed 12/08/2020.

²⁹ World Bank, “More than 1 billion women lack legal protection against domestic sexual violence, finds World Bank study,” 2018. Available from <https://www.worldbank.org/en/news/press-release/2018/02/01/more-than-1-billion-women-lack-legal-protection-against-domestic-sexual-violence-finds-world-bank-study>. Accessed 08/08/2020.

³⁰ World Bank, *SDG Atlas 2017*. Available from: <https://datatopics.worldbank.org/sdgateatlas/archive/2017/SDG-05-gender-equality.html>. Accessed 11/1/2020

temperament, personal experiences and lifelong experiences.³¹ To be without the support of international and domestic legal protection is to be even more vulnerable to the many consequences of abuse.

Attitudes That Contribute to the Impact of Abuse

GBV is not a manifestation of a loss of self-control on the part of the aggressor.

Filemoni-Tofaeono and Johnson assert:

[It] is therefore necessary to dispel the myth that acts of violence against women are simply unfortunate instances of individual men momentarily losing control. On the contrary, such acts are most often the end of a mindset congruent with the rules of patriarchal power, in which the perpetrator views the woman not as a person...but as an 'object to be manipulated'.³²

This manipulation is at the core of abuse.

Patriarchal Thinking

The GBV crisis is entrenched in society, and the roots of abusive thinking run deep. According to Namy et al., in their work on understanding the intersection of violence against women and children in the family, it is patriarchal thinking in society that leads to significant devaluation of women. Patriarchal thinking provides a fertile setting for abusive and controlling behavior toward the victim. "The patriarchal family structure creates an environment that

³¹ T. J. Capurso, "How judges judge: Theories on judicial decision-making," *University of Baltimore Law Forum*, 29, no. 1 (1998). Available from: <https://scholarworks.law.ubalt.edu/cgi/viewcontent.cgi?article=1909&context=lf>. Accessed 12/10/2020.

³² J. A. Filemoni-Tofaeono, and L. Johnson, *Reweaving the Relational Mat: A Christian Response to Violence Against Women from Oceania*, *Reference and Research Book News*, 22, no. 3 (2006). Available from <http://search.proquest.com.ezp-prod1.hul.harvard.edu/docview/199710866?accountid=11311>.

normalizes many forms of violence, simultaneously infantilizing women and reinforcing their subordination (alongside children).”³³

The effects of patriarchal thinking are seen globally, and justification and acceptance of it may be considered more or less normal depending on the local culture. More than 35 studies on low- and middle-income countries evidenced that developing nations’ attitudes condoning DV and discriminatory gender norms around male authority and control are highly predictive of rates of perpetration and victimization.³⁴

Justification of abuse is explained by Kandiyoti’s theory of patriarchal bargaining. Kandiyoti calls this behavior a coping mechanism used to mitigate the challenges of living in a patriarchal system.³⁵ This justification behavior exacerbates the impact of abuse on victims. Widespread patriarchal sentiment can form the basis of third parties’ justification for abuse and cause a victim to be re-victimized by her community in the form of being shamed when seeking help. Shame can prevent a victim from exposing the abuse, leaving the victim suffering in silence in an abusive relationship. This revictimization invariably contributes to the anxieties and vulnerabilities felt by a victim.

³³ S. Namy, et al., “Toward a feminist understanding of intersecting violence against women and children in the family,” *Social Science and Medicine*, 184 (2017): 40–48. Available from: <https://doi.org/10.1016/j.socscimed.2017.04.042>.

³⁴ L. Sardinha, and H. E. Nájera Catalán, “Attitudes toward domestic violence in 49 low- and middle-income countries: A gendered analysis of prevalence and country-level correlates,” *PloS one*, 13, no. 10 (2018): e0206101. <https://doi.org/10.1371/journal.pone.0206101>.

³⁵ D. Kandiyoti, “Bargaining with patriarchy,” *Gender & Society*, 2, no. 3 (1988): 274-290.

Justification Theory

Another concept that discusses secondary victimization is justification theory.³⁶ Lerner's "just world" theory argues that rather than sympathize with a victim, it is more comfortable for a person to believe that an incident a victim experienced was a just and fair outcome of this just world, as a consequence of something they did.³⁷ In his review of Lerner's writing, V. Lee Hamilton highlighted the crux of the theory. He stated: "When a fate seems undeserved, the observer makes cognitive distortions or takes actual steps to restore balance."³⁸ This reaction indicates that devaluation of a victim occurs in order to support the listener's perception that the social environment is generally fair. This response could be described as a coping mechanism and a rationalization to remove a cognitive dissonance. Scholarly writing suggests how globally widespread the "just world" belief may be. Bénabou and Tirol reference it as a near-universal tendency.³⁹

Victim Shaming

The phenomenon of victim shaming is endemic in society and common to many cultures. When your wallet is stolen from your pocket while walking the streets of a big city, you may encounter the response, "Well, why did you carry it in such a vulnerable place?" Some rape

³⁶ T. Ståhl, D. Eek, and A. Kazemi, "Rape victim blaming as system justification: The role of gender and activation of complementary stereotypes," *Soc Just Res* 23 (2010): 239–258. Available from: <https://doi.org/10.1007/s11211-010-0117-0>.

³⁷ M. J. Lerner, *The Belief in a Just World: A Fundamental Delusion* (New York: Plenum, 1980).

³⁸ V. Hamilton, *Contemporary Sociology*, 11, no. 2 (1982): 236-237. Available from www.jstor.org/stable/2067083/. Accessed June 5, 2020.

³⁹ R. Benabou, and J. Tirole, "Belief in a just world and redistributive politics." By the President and Fellows of Harvard College and the Massachusetts Institute of Technology. *Quarterly Journal of Economics*, May 2006. Available from https://scholar.princeton.edu/sites/default/files/rbenabou/files/beliefs_qje_1_web.pdf.

victims find themselves being asked, “What were you wearing?”, the inference being that the clothes worn by the victim so tempted the aggressor that they were helpless to avoid committing the rape. Shifting the blame to the victim and shaming them is a phenomenon seen in the personal and professional environments.

Delving into victim shaming within DV, S. Meyer’s 2016 study on reactions to victims of IPV revealed:

Experiences of victim-blaming attitudes when seeking help from informal and general formal support sources suggest that victims of IPV do not meet the criteria of the “ideal” innocent victim worthy of ongoing formal and informal support.⁴⁰

Blaming the GBV victim occurs in a broad range of situations and can have serious consequences on the victim in professional settings where they are seeking support.

Secondary victimization, defined by Campbell et al. in a study of community rape victims,⁴¹ discusses how people not only in their community surroundings but even legal, medical, and mental health services, may treat the victims as responsible in some way for what happened to them. Such a reaction has myriad negative consequences for the victim. The study examined the impact of this additional trauma that contributed to post-traumatic stress symptoms. Placing the blame on the victim has its roots in common human behavior.

Challenging Abusive Thinking and Justification

Patriarchal thinking and victim blaming or shaming should be halted by challenging the myths that feed those attitudes, according to a Harvard Assault Law Student Team (HALT)

⁴⁰ S. Meyer, “Still blaming the victim of intimate partner violence? Women’s narratives of victim desistance and redemption when seeking support,” *Theoretical Criminology*, 20, no. 1 (2016): 75-90.

⁴¹ R. Campbell, et al., “Community services for rape survivors: Enhancing psychological well-being or increasing trauma?” *Journal of Consulting and Clinical Psychology*, 67 (1999): 847–858.

website.⁴² A study found on this site, which assessed the effectiveness of a victimology course designed to engineer support for crime victims, determined that it is beneficial to educate the community on its perceptions of victims. In short, knowledge is power. Students who participated in a 2011 victimology course on victim blaming better understood human tendencies to blame the victim and, as a result of the course, “changed their perceptions about the blameworthiness of crime victims.”⁴³

Educational tools, such as the victimology course, can challenge the “just world” belief. An understanding of relevant human rights can dispel the myths of patriarchal thinking, and stimulate empathy to reduce victim blaming. In her 2019 work on identity, bias, empathy, and game design, Karen Schrier, Associate Professor of Games/Interactive Media at Marist College, NY, defined empathy as “Relating to a number of skills that are useful for connecting with others, reducing our negative judgments of others, and helping us better understand each other.”⁴⁴ Gerdes, et al., assert that the full extent of empathy is not simply a feeling. “Empathy culminates with a decision about what to do with one’s aroused empathic feelings and thoughts.”⁴⁵ As a proactive method of GBV prevention, changing people’s perspectives is critical, but stimulating action on the social change is even more desirable.

⁴² Harvard Assault Law Student Team (HALT), “How to avoid victim blaming.” Available from <https://orgs.law.harvard.edu/halt/how-to-avoid-victim-blaming/>. Accessed 06/07/2020.

⁴³ Fox, K., & Cook, C. (2011). Is Knowledge Power? The Effects of a Victimology Course on Victim Blaming. *Journal of Interpersonal Violence*, 26(17), 3407-3427.

⁴⁴ K. Schrier, “Designing ourselves: Identity, bias, empathy, and game design.” 2019. Available from https://www.academia.edu/40016405/Designing_Ourselves_Identity_Bias_Empathy_and_Game_Design:_A_report_from_the_Center_for_Technology_and_Society. Accessed 01/19/21.

⁴⁵ K. Gerdes, et al., “Measuring empathy in the 21st century: Development of an empathy index rooted in social cognitive neuroscience and social justice,” *Social Work Research*, 35, no. 2 (2011): 83–93.

If this generation is taught how to identify violent or manipulative behavior within relationships, and to empathize with and support victims rather than shame them, the dysfunction of patriarchal thinking will be diminished. It is critical that the structural root causes of inequality, such as unfair social norms, are addressed in order to achieve the UN's Sustainable Development Goal #5: Gender Equality and Empowerment of All Women.

Summary

This thesis investigates the development and formative evaluation of an experiential learning, video game-based program for raising awareness of GBV. The video game seeks to educate participants on GBV through narrative-based visual novel-format play. It aims to challenge patriarchal and GBV myths, raise GBV awareness, and provide resources through experiential and empathy-encouraging learning modules that are culturally, visually, and linguistically appropriate for the Haitian participants. Global human rights standards are emphasized. It also explores the importance of cultural relevance and technical characteristics required for the game to be effective and scalable in modifying social and cultural norms in a low-income country, Haiti.

The formative evaluation of game-based learning explores the development of the game prototype through phases of testing with parties who are close to the target audience, and professionals who are able to provide insight on validation of the hypotheses associated with the prototype's potential effectiveness as a future viable GBV prevention tool.

Chapter II

Exploring Video Games as a Preventive Tool

The prior chapter described the many vulnerabilities a GBV victim may have and the underlying attitudes that can exacerbate the challenges they face. There is no single pathway to remedy or prevent GBV. Various intervention theories and programs to help victims of GBV exist globally. Prevention programs, or stopping violence from happening in the first place, may take many forms. They may focus on individual-level change, relationship- or family-level intervention, community-level intervention, or intervention at the institutional level, such as school-based curricula.⁴⁶ Traditional programs may employ a variety of methods to change social norms such as non-governmental organizations (NGO) installing their staff in a country to provide training, or equipping a local peer-educator network or community activists to disseminate GBV awareness education.

Intervention Limitations

Limitations in cost data and gaps in information preclude accurately assessing the cost effectiveness of traditional GBV programs in low- and middle-income countries. After looking at a number of GBV awareness programs, Remme, et al., concluded:

We know very little about the costs and efficiency of [GBV] interventions. . . . A major weakness of the evidence base is that the costing analyses were of varying

⁴⁶ Falu, E., Kerr-Wilson, A. (2015) What Works to prevent violence against women and girls evidence reviews. Paper 2: Interventions to prevent violence against women and girls. Retrieved on 11/01/2020 from <https://www.whatworks.co.za/documents/publications/15-global-evidence-reviews-paper-2-interventions-to-prevent-violence-against-women-and-girls/file>

quality and used a range of intervention outputs, making it difficult to compare the relative efficiency of different interventions.⁴⁷

Furthermore, evaluation of the impact of GBV prevention programs can be complicated by administrators that do not furnish the necessary data. This can occur due to a lack of efficient methods or tools for gathering data. After evaluating the effectiveness of GBV prevention programming funded in Malaysia, the US Department of State Bureau of Population, Refugees, and Migration (DoS/PRM), a staff person commented: “DoS/PRM has been funding these programs for three or four years. There has been a definite impact, but it is hard to say precisely what that impact has been.”⁴⁸ Providing transparency and clarity on the effectiveness of a program can enable decision makers to decide whether to continue, expand, or withdraw a program.

Complexity in assessing cost effectiveness and impact are not the only challenges faced by traditional GBV programs. Sustainability and scalability were also identified by Remme, et al., in their 2014 report in which they highlighted a paucity of evidence on how GBV prevention programs could be replicated or scaled up.⁴⁹ A briefing paper by the Overseas Development Institute (ODI) discussed donors’ concern about the high proportion of their funded projects being financially unsustainable.⁵⁰

⁴⁷ M. Remme, C. Michaels-Igbokwe, and C. Watts, “Approaches to assess value for money and scale up of violence against women and girls prevention: A summary of the evidence,” Medical Research Council, Pretoria, South Africa, 2014: 1.

⁴⁸ US Department of State, “Evaluating the Effectiveness of Gender-Based Violence Prevention Programs with Refugees in Malaysia,” 2013. Available from: <https://2009-2017.state.gov/j/prm/policyissues/prmfund/232841.htm>. Accessed 01/19/21.

⁴⁹ Remme, M., et al., “Approaches to assess value for money.”

⁵⁰ Overseas Development Institute. “The Impact of NGO Development Projects,” 1996. Available from <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2636.pdf>.

Sustainability in terms of ongoing change is another concern. Scalability is not limited to width or depth of reach; the feasibility of scaling up existing programs by adding them to other large-scale education or social welfare programs presented challenges. However, community-level mobilization through local NGOs as a “franchise” model could provide scalability, as suggested in Remme et al.⁵¹

Technology: A Potential Solution

While technology is sometimes wielded as a tool by abusers, technology also has the potential to present cost-effective, sustainable, and scalable education solutions to contribute to changing social norms associated with GBV. In their 2015 analysis on how to prevent violence against women and girls, Ellsberg, et al., called for “further investment . . . to expand the evidence base for what interventions are effective in different contexts, assess a broader range of intervention models, and explore issues of intervention cost, sustainability, and scalability.”⁵²

From a 2017 evaluation of educational products provided on technology platforms in India, results suggest that “well-designed technology-aided instruction programs can sharply improve productivity in delivering education.”⁵³ Digital adoption is already gaining ground at a fast pace, and technology is playing an ever-larger role globally in the COVID-19 environment. Pandemic-related ramifications to the NGO sector and other GBV prevention program providers indicate the need to pivot programs to technology solutions. Changes to monitoring and

⁵¹ Remme, “Approaches to assess value.”

⁵² M. Ellsberg, “Prevention of violence against women and girls: What does the evidence say?” *Lancet*, 385, no. 9977 (2015): 1555-1566.

⁵³ K. Muralidharan, A. Singh, and A. J. Ganimian, “Disrupting education? Experimental evidence on technology-aided instruction in India. National Bureau of Economic Research, July 2017. Available from <https://www.nber.org/papers/w22923.pdf> . Accessed 11/1/2020.

evaluation practices have greater reliance on technology, and the programs are experiencing challenges to traditional fundraising models that relied on holding events in-person. In addition, COVID-19 constraints are pushing NGOs to pivot to locally led program delivery as impediments to travel abound: frontiers are closed; confinement restrictions are widespread; social distancing brings complexity to in-person education programs; and organizations are unwilling to risk the health of their employees.

A 2020 report from McKinsey noted that “digital adoption has taken a quantum leap at both the organizational and industry levels.”⁵⁴ Technology has become a useful tool in GBV intervention by helping existing victims, although there has been a lack of technology tools for GBV prevention until now. A 2014 report by STATT Consulting on tackling GBV with technology, which reviewed seven case studies of mobile or internet-based technology interventions in developing contexts, found a lack of emphasis on preventative tools: “It appears that many of the existing [Information Communication Technology (ICT)] interventions are currently focused on responses to violence against women, rather than prevention efforts.”⁵⁵

A study by the International Development Innovation Alliance (IDIA) on prevention methods showcased the scalability of a technology solution for GBV prevention.⁵⁶ Within IDIA’s study, methods included strengthening community-based prevention strategies, mobilizing women, girls, men, and boys at the community level, programming in formal and informal

⁵⁴ McKinsey & Company, “How COVID-19 has pushed companies over the technology tipping point- and transformed business forever,” 2020. Available from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever>. Accessed Retrieved 11/1/2020 .

⁵⁵ C. Hayes, “Tackling gender-based violence with technology,” 2015. Available from: <http://www.gendermatters.co.uk/pdfs/STATT%20Tackling%20GBV%20with%20Technology.pdf>. Accessed Retrieved 11/1/2020 .

⁵⁶ International Development Innovation Alliance (IDIA), “Innovating to address gender-based violence,” 2000. Available from <https://r4d.org/wp-content/uploads/Innovating-to-Address-GBV.pdf>. Accessed 11/01/2020.

education settings, and other means to transform the norms and behavior that underpin GBV. One example reviewed in the study was Caretas, a chatbot programmed for storytelling. Offered on Facebook, it helps young people understand the risks of sexual violence. Caretas reached 1.2 million participants and received over 300,000 responses. “Over 90% thought the initiative was good or very good.”⁵⁷

Due to the COVID-19 pandemic, educational technology solutions have come to the forefront. A report by Credit Suisse Group on the impact of COVID-19 on educational technology highlights the opportunity to further explore ways to address GBV prevention with educational technology tools:

This crisis will rapidly drive the growth of a sector that was already starting to develop, and dramatically increase investment into the space. With the extra resources, and a vast population of educators and students who are now much more open to digital learning, EdTech will transform education as we knew it.⁵⁸

Educational technology is not a panacea. “Sustainability and scalability are challenging and complex phenomena.”⁵⁹ Poorly planned and implemented technology programs will face sustainability and scalability challenges. In addition, in the educational setting, “setting bold performance objectives has clear benefits, but putting too much emphasis on reaching ambitious goals can encourage all sorts of undesirable behaviors.”⁶⁰ Challenges with traditional programs

⁵⁷ IDIA, “Innovating to address GBV.”

⁵⁸ Credit Suisse Group, “Educational technology: Coronavirus and beyond,” 2020. Available from: <https://www.credit-suisse.com/media/assets/microsite/docs/responsibleinvesting/cs-education-technology-spread.pdf>. Accessed 01/19/21.

⁵⁹ D. S. Niederhauser, et al., “Sustainability and scalability in educational technology initiatives: research-informed practice, *Technology, Knowledge and Learning*, 23, no. 3 (2018): 507-523.

⁶⁰ D. Dockterman, and C. Weber, “Does stressing performance goals lead to too much, well, stress?” *Phi Delta Kappan*. 98, no. 6 (March 2017): 31-34.

include assessing cost effectiveness, sustainability, and scalability. There seems to be potential for productivity and scalability of educational technology tools.

This thesis considers the concept of introducing an educational technology tool in the form of a video game. The video game would address GBV prevention, challenge negative social norms regarding GBV, and encourage empathy for a GBV victim. In considering the use of video game technology for adult participants, the thesis explores empowering the participant to question patriarchal presumptions and erroneous “just world” thinking. Second, it encourages community support for an abuse victim and aims to promote empathy in players for those suffering abuse, so they are more likely to be supportive to a victim, and less inclined to victim-shame. Third, it aims to equip the player to understand what support resources and legal protections they may be able to access.

The Ethics of Using Video Games for GBV Prevention

Video games are perceived by some as a negative influence, e.g., the cause of mass shooters’ desensitization to other humans around them, or a source of distraction to children from their studies: “At best, a waste of time, . . . and described as hotbeds of violence, addiction, sexism, racism, homophobia, and laziness.”⁶¹ Many instances exist in the video-game market of games that teach undesirable messages that align with patriarchal thinking. For example, *Leisure Suit Larry*, notorious among a wide age range of men from Europe to America, is a video game series that appears to encourage abusive behavior toward women. According to a 2004 review in *Electronic Gaming Monthly*, it is replete with date-rape jokes and psychological manipulation of

⁶¹ K. Schrier, *Knowledge Games: How Playing Games Can Solve Problems, Create Insight, and Make Change* (Baltimore: Johns Hopkins University Press, 2016), 3.

women.⁶² Many other video games manifest other destructive behaviors, such as *Rapelay*, a video game from 2006 by Illusion Soft in which the main character stalks and rapes women.⁶³

Not all video games are negative, however; there are a host of games termed “serious games” and “knowledge games”⁶⁴ that bring emotional and moral educational benefits, knowledge advances, and therapeutic and psychological benefits. Exploration to further emotional and moral education using video games for teaching empathy is the subject of many publications.

Karen Schrier, in an article titled “Designing games for moral learning and knowledge building,”⁶⁵ discusses how to use games to teach moral skills. She introduces the possibility that games and gaming experiences may be directly designed to help solve real-world problems and contribute knowledge—not just scientific and health-related knowledge but also knowledge more related to humanistic, cultural, social, and psychological questions.

In *Knowledge Games*, Schrier introduced the concept of games:

Gaming experiences are directly designed to help solve real-world problems and contribute knowledge—not only scientific and health-related knowledge but also knowledge more related to humanistic, cultural, social and psychological questions.⁶⁶

⁶² “Leisure Suit Larry: Magna Cum Laude; No happy ending,” *Electronic Gaming Monthly*, 185 (2004): 148.

⁶³ G. Fennelly, “Amazon selling rape simulation game, Rapelay,” *Belfast Telegraph* 02/12/2009. Available from: <https://www.belfasttelegraph.co.uk/business/technology/exclusive-amazon-selling-rape-simulation-game-rapelay-28533501.html>. Accessed 01/19/21.

⁶⁴ Schrier, *Knowledge Games*.

⁶⁵ K. Schrier, “Designing games for moral learning and knowledge building,” *Games and Culture*, 14, no. 4 (2019): 306–343. Available from: <https://doi.org/10.1177/1555412017711514>.

⁶⁶ Schrier, *Knowledge Games*, 34.

Video gaming in the context of *Knowledge Games* shows the possibilities of gathering people to solve problems. In her book, *Designing and Using Games to Teach Ethics and Ethical Thinking*,⁶⁷ she considers several methods within a commercial game, *Fable III*, to teach ethics.

In their analysis *Ethical Considerations When Using Video Games as Therapeutic Tools*, Colman and Gnanayutham stated: “We have seen that video games have the potential to offer therapeutic benefits to many groups of people. Most of the negative effects of playing video games are dependent on the game content.”⁶⁸ Therefore, while video gaming may suffer from negative connotations, the technology also should be viewed as a powerful tool for teaching, learning empathy, and for challenging undesirable social norms.

The use of video games as a force for encouraging empathy is well documented. Greitemeyer, et al., posit that “Exposure to pro-social (relative to neutral and anti-social) video games enhanced interpersonal empathy and diminished reported *schadenfreude* toward a target befalling a misfortune.”⁶⁹ Studies on the use of video games for encouraging behavioral changes support this position.

Using Video Games for Behavioral Change

In their chapter “Storytelling for Social Change” in *The Handbook of Development Communication and Social Change*, Winskell and Enger write that “Literature on the cognitive, emotional, and behavioral effects of narrative alerts us to the potential of narrative to cultivate

⁶⁷ Schrier, *Designing and Using Games*, 141-158.

⁶⁸ J. Colman, and P. Gnanayutham, “Ethical considerations when using video games as therapeutic tools.” 2010. Available from: <https://www.semanticscholar.org/paper/Ethical-considerations-when-using-video-games-as-Colman-Gnanayutham/3080bb3e2d5a90203afda97d5f719855d2bf5428>. Accessed 01/19/21.

⁶⁹ T. Greitemeyer, S. Osswald, and M. Brauer, Playing prosocial video games increases empathy and decreases *schadenfreude*,” *Emotion*, 10, no. 6 (2010): 796-802.

empathy and compassion and to the importance of transportation in achieving these effects.”⁷⁰

The power of the narrative to bring learning alive in a way lacking in the paradigmatic has been the subject of studies in the legal, health, and educational fields.

While in-person training on GBV awareness is labor-intensive, there is increasing relevance to video game technology, which provides a more scalable solution. A movie, a public-service announcement, a newspaper article, or even a billboard could also generate positive outcomes for preventing GBV. A movie can surely invoke an empathetic reaction, but a movie does not utilize interplay and decision making in ways that engender a situation-based learning experience.

Narrative Communication and Video Games

Video games support an immersive narrative method for communication. Jerome Bruner, an American psychologist who specialized in cognition, made distinctions between two approaches in getting a message across: the paradigmatic and the narrative. The paradigmatic approach relies on “empirical and experimental methods to discover, describe, or elucidate facts.”⁷¹ A narrative approach is defined as “any cohesive and coherent story with an identifiable beginning, middle, and end that provides information about scene, characters, and conflict; raises unanswered questions or unresolved conflict; and provides resolution.”⁷² Bruner’s theories detail the benefits of narrative versus paradigmatic approaches, and they support narratives’ more apparent impact on inducing an empathic response. This gives credence to the idea of using a

⁷⁰ K. Winskell, and D. Enger, “Storytelling for social change,” Chapter 12. In K. G. Wilkins, T. Tufte, and R. Obregon, editors, *Handbook of Development Communication and Social Change* (First Edition), 2014: 203.

⁷¹ Jerome Bruner, quoted in L. Hinyard, & M. Kreuter, “Using narrative communication as a tool for health behavior change: A conceptual, theoretical, and empirical overview,” *Health Education & Behavior* 34, no. 5 (2007): 777-792.

⁷² Hinyard & Kreuter, “Using Narrative Communication,” 777-792.

narrative-based video game for teaching GBV awareness, rather than an informational class or data driven pamphlet.

Narrative approaches, as recommended by Bruner, may be especially effective when communicating with populations that already have a strong oral tradition.⁷³ Haiti is a nation with a strong storytelling culture. *Krik? Krak!*, a book by Haitian American author Edwidge Danticat,⁷⁴ illustrates the richness of oral traditions brought to Haitian life dating from its African cultural roots. While studies show that narrative is effective in general for influencing behavioral change, the Haitian culture is already socialized to embrace the narrative delivery of information. Jerome Bruner's cultural psychology provides a framework for conceptualizing the importance of narrative in accommodating sociocultural change and the agency, empowerment, and sense of citizenship that "culture-building" can confer.⁷⁵

Plass et al. commented on structuring the design of a game to ensure beneficial engagement:

All forms of play have the potential to result in all four types of engagement (affective, cognitive, behavioral, sociocultural). However, the actual type of engagement will differ by game and within a game, as different games features elicit different types of engagement in different context and for different learners.⁷⁶

Referencing the power of learning through playing video games, Plass et al. concluded:

One of the distinguishing characteristics of games is the unique concern of game designers for the quality of the learning experience and, in part because of this concern, the fact that digital games are able to engage learners on an affective,

⁷³ Hinyard & Kreuter, "Using Narrative Communication," 777-792.

⁷⁴ E. Danticat, *Krik? Krak!* (New York: Vintage Books, [1790] 1996).

⁷⁵ Winskell and Enger, "Storytelling for Social Change," Chapter 12.

⁷⁶ J. L. Plass, B. D. Homer, and C. K. Kinzer, "Foundations of game-based learning," *Educational Psychologist*, 50 (2015): 260.

behavioral, cognitive, and sociocultural level in ways few other learning environments are able to.⁷⁷

Storytelling has the capacity to change a participant's behavior through immersing him/her in the material. Hinter et al., assert:

When audience members become immersed in a narrative, they are less likely to counter argue against its key messages, and when they connect to characters in the narrative, these characters may have greater influence on the audience members' attitudes and beliefs.⁷⁸

This suggests that connecting with character stories can be a powerful medium for changing beliefs.

The Effectiveness of Video Games for Learning

Numerous formats were contemplated in the creation of a video product for this thesis subject: point and click, virtual reality, visual novel-format, 3D, 2D, etc. In their work on games for people with cognitive difficulties, Torento, et al., elaborated on their theory that choosing the right type of game is important in order to minimize the number of accessibility barriers.⁷⁹ To empathize with victims, accessibility and an immersive experience were determined to be important to the video game prototype based on the literature review of other program material such as "In Her Shoes."⁸⁰

⁷⁷ Plass, et al., "Foundations of game-based learning," 262.

⁷⁸ Hinyard and Kreuter, "Using narrative communication as a tool for health behavior change," 777-792.

⁷⁹ J. Torrente, A. del Blanco, P. Moreno-Ger, and B. Fernández-Manjón. *Designing Serious Games for Adult Students with Cognitive Disabilities*, 2011. Available from https://pubman.e-ucm.es/drafts/e-UCM_draft_208.pdf. Accessed 08/16/2020.

⁸⁰ A. Wootan Merklings, "Dispelling domestic violence myths among graduate social work students." Masters thesis, Colorado State University, Fort Collins, Colorado, 2014. Available from: https://mountainscholar.org/bitstream/handle/10217/89551/WootanMerklings_colostate_0053N_12754.pdf;sequence=1. Accessed 01/19/21.

The Power of Narrative in Visual Novel-Format Video Games

Visual novel-format video games provide opportunity for rich narrative and immersion in stories. Such games are text-driven, which is a concern for a society where literacy may be a challenge. Nevertheless, the power of storytelling through visual novel-style games, if supported by voiceovers, should not be under-estimated even for literacy-challenged populations. An effective story can draw a person in and enable them to empathize with a situation in a way that allows them to envision themselves in the place of the protagonist and other participants. Most importantly, visual novel-format games are attainable, with many tools and plug-ins to facilitate creation of a prototype at low cost, making it a solution for smaller projects. Accessibility of a packaged visual novel game with an easy download to phones, computers, and tablets is a critical consideration.

Razack reminded readers that content must be realistic and relevant to the participant. He stated:

In critical educational and feminist theory, what are being sought, are ways to come to terms with the contradictions of everyday life, contradictions that reveal themselves in the stories of the oppressed and in which are located the seeds for critical consciousness.⁸¹

This supports the need for the video game to be more than just a compilation of stories; rather, a content- and resource-rich reflection of reality.

As a time-tested tool, storytelling has a powerful impact as it engenders empathy for the characters and for the situation. For video games, even a relatively simple visual novel-format prototype has the ability to draw in the attention of the player and is more accessible than other video game formats. Behavioral change encouraged through empathy with a story delivered via a

⁸¹ S. Razack, "Story-telling for social change," *Gender and Education*, 5, no. 1 (1993): 62.

video game requires careful construction and delivery. Social work scholar Elizabeth Segal defines social empathy as “the ability to understand people by perceiving or experiencing their life situations and as a result gain insight into structural inequalities and disparities.”⁸² To illustrate this in a video game, clearly takes some understanding and sensitivity to the subject matter, and the most appropriate story-telling mechanisms in gaming technology.

Rivers and McDonald, in *Beyond Empathy*, discuss the necessary characteristics of a “learning game” that can take the player to an empathic position:

First, a learning game must actually be a game. We ascribe to Salen and Zimmerman’s (2003) definition of a game as, “a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome” (p. 11). System exploration—the cyclical feedback process of learning rules and relationships in the game world (Squire, 2011)—is cited frequently as a core component in well-designed learning games (Bogost, 2008; de Castel & Jensen, 2003; Gee, 2005; Leites, 2015; Rawitsch, 2017; Squire, 2011). Second, players should be both autonomous—able to make informed decisions (Brown, 2016)—and active agents (Gee, 2005)—feeling like their choices matter (Leites, 2015; Rawitsch, 2017). Third, games should present well-ordered problems which feel challenging but solvable (Gee, 2005). Fourth, failure in a game must be presented as a normal part of the experience that offers an opportunity to learn through feedback (Gee, 2008; Leites, 2015).⁸³

A video game is a viable learning tool for social impact when it is structured in a way that accommodates and supports social education. With a rich narrative and purposeful storytelling, a visual novel-format video game can provide an experiential learning experience with resonating cognitive impact, all while being accessible.

⁸² E. Segal, Social empathy: A model built on empathy, contextual understanding, and social responsibility that promotes social justice, *Journal of Social Service Research*, 37, no. 3 (2011): 266-277.

⁸³ S. E. Rivers, and H. McDonald, “Beyond empathy,” in K. N. Dunlap and S. E. Rivers, *Games to Foster Teens’ Social and Emotional Skills*, 2019. Available from: https://www.researchgate.net/profile/Kelli_Dunlap2/publication/334307315_Beyond_Empathy_Games_to_Foster_Teen’s_Social_and_Emotional_Skills/links/5d237d72458515c11c1f2a66/Beyond-Empathy-Games-to-Foster-Teens-Social-and-Emotional-Skills.pdf. Accessed 01/19/21.

Chapter III

Constructing a Video Game Focused on Preventing GBV

This chapter reviews how content can be effectively communicated into a video game format, as well as some existing successful programs that focus on GBV prevention. GBV prevention programs that highlight the use of empathy within the community have been demonstrated to be effective. The ethical assumptions of using a video game to address GBV is also discussed. Then the merits of different video games as a platform for behavioral change are reviewed. Finally, some existing games for GBV prevention targeted toward a different audience are evaluated in relation to their tactics in addressing domestic violence.

GBV Prevention Programs as a Guideline

Existing traditional GBV prevention programs for adults, particularly those applied in low-income and middle-income countries, can inform content considerations for creating an effective video game on this sensitive topic. As part of the literature review, searches were performed on key words such as *gender-based violence prevention program* and *domestic violence prevention program*, and *community medical intervention programs*. The literature underscored the need for programs to support an inclusive cultural transformation by achieving community-level communication. Media was identified as an effective channel. Additionally, the literature indicated that there is a greater level of success with GBV programs when a participant's empathy is stimulated as opposed to when it is not.

Real-life intervention strategies have demonstrated encouraging results when they are community-based and engage participants on multiple levels, particularly through nurturing empathy and challenging societal norms that foster inequality. They can also be effective when incorporating other important ancillary components, such as strengthening the subject's financial prospects through supportive community programs. Ellsberg, et al., wrote this:

Successful programs engage multiple stakeholders with multiple approaches, aim to address underlying risk factors for violence including social norms that condone violence and gender inequality and support the development of non-violence behaviors.⁸⁴

Minckas, et al., in their 2020 analysis of a small number of GBV prevention programs, considered the strength of programs that created space within communities for critical reflection and facilitated consideration of social reality, using stories to reflect on experiences. Their review concluded that communities must be “intrinsically aware and empowered to achieve critical consciousness and to mobilize for sustainable change on [GBV] prevention.”⁸⁵ Community awareness and empowerment is an important factor to the success of a GBV prevention program. Methods of communication are also an important consideration.

Starmann, et al., in their 2018 study, reviewed a GBV prevention program that showcased the success of the diffusion of innovation theory⁸⁶ through the Start Awareness Support Action (SASA) program in a low-income country. SASA is a four-stage program,

⁸⁴ Ellsberg, et al., “Prevention of violence,” 1555-1566.

⁸⁵ Nicole Minckas, Geordan Shannon, and Jenevieve Mannell, “The role of participation and community mobilisation in preventing violence against women and girls: A programme review and critique,” *Global Health Action*, 13, no. 1 (2020). DOI: 10.1080/16549716.2020.1775061.

⁸⁶ The Diffusion of Innovation theory is a social science theory developed in 1962 by E.M. Rogers. It details the phases of momentum a new idea or technology product must go through in order to become diffused and adopted by society. Combining mass media with community-based “change agents” and/or mobilization efforts acting at multiple levels showed great results for progress in preventing GBV.

encompassing local activism, media and advocacy, communication materials, and training. The study asserted:

Mass and mid media channels are most effective in generating awareness, identification and knowledge about new ideas and behaviors, [and] interpersonal communication about the new ideas is, in turn, influential in persuading individuals to adopt or reject new behaviors.⁸⁷

This is evidence that a media approach can work.

The significance of empathy in GBV prevention is underscored by a program called *In Her Shoes* which is used in 10 countries in the Horn and East and Southern Africa. The program employs storytelling through the use of physical story cards to illustrate the various ways in which violence manifests in the daily lives of women. It showcases the challenges faced by victims in seeking help. Using narrative in the form of stories of the circumstances of GBV victims, the program encourages empathy for GBV victims.⁸⁸ The program helps the participant to imagine living the life of a GBV victim, what they may go through, and the impact of the abuse they experience. This method of inspiring empathy on the part of the participants through storytelling, in this instance, is a useful example. Empathy is an important consideration in creating content for a video game, not just in order for a player to learn sensitivity toward victims, but also from the perspective that those playing the game may have their own need for empathy due to their own trauma.

⁸⁷ E. Starmann, et al. "Examining diffusion to understand the how of SASA!, a violence against women and HIV prevention intervention in Uganda." *BMC Public Health*, 18, no. 1 (May 2018): 616. doi:10.1186/s12889-018-5508-4.

⁸⁸ *In Her Shoes* Toolkit. Available from <http://preventgbvafrica.org/in-her-shoes/in-her-shoes-in-action/>. Accessed 05/19/2020.

Trauma-Informed Content Considerations

This section addresses the necessity to incorporate trauma-informed content for a GBV prevention tool. It is possible that someone who encounters the video game may have existing trauma from their own experiences of abuse, or as a bystander, either as an adult or child victim. Events in the game may unintentionally cause them to relive the trauma. Given that a person may participate in a video game intervention delivered in isolation, it is important to use trauma-informed content to reduce the risk of a trauma in game play.

Trauma is inherent in the psychology of a GBV survivor. Because of the prevalence of GBV, it is critical to provide an approach that is sensitive to and derived from an understanding of trauma and its effects. Trauma-informed care (TIC) is defined by Hopper, et al., as:

A strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment.⁸⁹

It is important to construct content for the game with an emphasis on physical, psychological, and emotional safety for the player, conscious that they may have some underlying trauma that may be triggered by game content on a theme such as GBV.

Drawing the player in to empathize with the theme of GBV without triggering traumatization is often done with the use of fictional stories. Highlighting the challenges in the lives of fictional characters has proven powerful in the In Her Shoes program. It allows the program participant to appreciate what someone else's life may be like, while remaining in a psychological safety. "If the activities revolve around other people's fictional stories of violence,

⁸⁹ E. Hopper, E. Bassuk, J. Olivet, "Shelter from the storm: Trauma-informed care in homelessness services settings," *Open Health Services and Policy Journal*, 3, no. 2 (2010): 80-100.

they might encourage participants to reflect and analyze the complexity of the problem and its risk factors, while remaining an outsider.”⁹⁰ Empathy is experienced in safety through fiction.

Building in a means of stimulating empathy as part of the content of the game is a way to do this. “[Digital] education should help students develop soft skills such as creativity and empathy,”⁹¹ as Credit Suisse notes. Nurturing empathy and encouraging a positive cultural perspective are powerful agents to create a safe space for a player who may have a history of trauma. Ezzenwa-Ohaeto argues that nurturing is a solution for restructuring a society away from the most negative manifestations of patriarchy.⁹² De Jonghe et al., found that significant medical research supports the importance of addressing PTSD induced by domestic violence experiences: “Factors that enhance and reduce the risk for PTSD, [include] social support and coping styles.”⁹³

Psychological research provides insight into the impulses of violence and its patriarchal underpinnings and has made clear the short and long-term benefits of nurturing as a corrective agent. Nurturing can have a progressive, aggregate effect on further generations through the communication and socialization processes occurring within a social group and from one

⁹⁰ Minckas, et al., “The role of participation and community mobilisation,” 2020. DOI: 10.1080/16549716.2020.1775061.

⁹¹ Credit Suisse, “The growing demand for EdTech during coronavirus lockdown,” 2020. Available from <https://www.credit-suisse.com/about-us-news/en/articles/news-and-expertise/education-technology-and-coronavirus-pandemic-202004.html>. Accessed 11/1/2020.

⁹² E. Ezzenwa-Ohaeto, “Fighting patriarchy in Nigerian cultures through children’s literature,” *Studies in Literature and Language* 10, no. 6 (2015): 59.

⁹³ E. DeJonghe, G. Bogat, A. Levandosky, and E. Eye, “Women survivors of intimate partner violence and post traumatic stress disorder: Prediction and prevention,” *J Postgrad Med* 54 (2008):294-300.

generation to the next, as studies in epigenetics show.⁹⁴ Without empathy, community nurturing would be impossible.

Equally, it is important on a practical level to provide resources through the medium of a game that address the traumatic aspects of gender-based violence. In her article, Kerzner commented, “Wouldn’t it be cool if someone could access the National Suicide Prevention Lifeline, or similar crisis lines through the PSN, Xbox Live, or Steam? Even a Slate during a load screen publicizing a support service is something.”⁹⁵ A 2019 study in Canada, reviewing online resources for IPV victims, highlighted a dearth of resources other than those that provided exit plans:

Findings suggest that online interventions focused on the act of leaving with less emphasis on the experiences that occur after a woman has left the relationship. In addition, the online interventions concentrated on the individual capacity of the survivor to leave an abusive relationship and demonstrated limited understanding of IPV in relation to the broader social-contextual factors. Findings from this research highlight information gaps for women who require significant support after leaving an abusive relationship.⁹⁶

Encouraging empathy is essential; trauma’s impact on that capacity must be taken into account. A trauma-informed approach to any instructional learning tool is important. The creation of a preventative tool must also take into account the sensitivities of the participant from potential exposure to GBV. One cannot fairly assume that no users have been exposed GBV, either directly or indirectly. As one in three women have experienced GBV directly, the tool must necessarily be considerate to their personal histories.

⁹⁴ Yehuda, “Different Biological Mechanisms.”

⁹⁵ Kerzner, L., (2015). Trauma, Healing and Gaming Part 4: 10 Ways the Community can help with PTSD. Retrieved from <https://v1.escapistmagazine.com/articles/view/video-games/13950-10-Ways-The-Video-Game-Community-Can-Help-People-With-PTSD.2>

⁹⁶ Rempel, et al., “Intimate partner violence,” 204-219.

Learning from Existing Video Games That Address GBV Prevention

Video games focused on GBV prevention, which are directed at children, do currently exist. However, based on searches by the thesis author, there is an obvious absence of serious educational games for adults on the topic of GBV prevention, whether for low-, middle-, or high-income countries. To understand the milieu, an analysis of children's video games for method and efficacy is valuable.

Some video games geared toward teens in high-income countries, such as the US and Portugal, have run interesting trials on GBV prevention. For example, *Unlove*,⁹⁷ a video game created in Portugal in 2018 was studied. The study reflects general interest in using gaming for effecting preventive measures in gender-based violence.

Jennifer Ann's Group⁹⁸ holds competitions for development of video games that address abusive relationships in the U.S. The group also published their primary findings on the effectiveness of their games in the US market. Their findings revealed that "the majority of participants showed a change in attitude about negative relationship beliefs in only 20 to 45 minutes."⁹⁹ A controlled experiment using two games from the same competition created awareness of relationship violence, how to identify it, how to keep safe, and to seek help.¹⁰⁰

Crecente's 2014 study on Gaming Against Violence found that the video games produced as part

⁹⁷ A. Almeida, J. Lima, M. Pereira, and M. Silva, "UNLOVE: A Digital Game for Gender-Based Violence Prevention and Awareness," *International Conference on Gender Research*, 342, 2018.

⁹⁸ Jennifer Ann's Group is a Code Section 501(c)(3) public charity based in Atlanta, Georgia, whose aims are to educate young people about the prevalence of teen dating violence, how to identify these relationships, and how to extricate themselves safely from such relationships.

⁹⁹ Almeida, et al., UNLOVE, 342.

¹⁰⁰ D. Crecente, "Gaming against violence: A grassroots approach to teen dating violence," *Games For Health: Research, Development, and Clinical Applications*, 3, no. 4 (2014): 198-201.

of the Life.Love Game Design Challenge were “able to increase awareness on teen dating violence and provided educational information to assist adolescents, parents, and teachers in identifying abusive relationships.”¹⁰¹ The existing evidence suggests that similar efforts targeting adults may have the potential to be successful.

There is also some evidence of success with this video-game genre as it targets children in a few low- and middle-income countries. NoneInThree (Ni3), an organization at the University of Huddersfield (UK), has conducted formal studies of the rollout of their games aimed at GBV awareness for children in Barbados and Grenada, a version on child sexual abuse in Jamaica, and variants in India and Uganda.¹⁰² Their approach focuses on characters’ stories, and brings the child or teen user to an understanding of gender-based violence among young people from each character’s perspective.

The aforementioned examples were all designed for youth. Evidence that video game-based learning not only benefits adolescents, but also adults, can be found in *Night Shift*, which has produced excellent results while training physicians as to how to triage patients for trauma decisions in an emergency-room environment of a non-trauma center. The study concluded that “compared with apps based on traditional didactic education, exposure of physicians to a theoretically grounded video game improved triage decision- making in a validated virtual simulation.”¹⁰³

Other examples in the professional arena show that video gaming for adult learning is a valuable tool for a directed-learning experience across multiple subject matters. Traci Sitzmann

¹⁰¹ Crecente, “Gaming against violence,” 198-201.

¹⁰² <http://www.noneinthree.org>.

¹⁰³ D. Mohan, et al., “Efficacy of educational video game versus traditional educational apps at improving physician decision making in trauma triage: A randomized controlled trial,” *BMJ*, (2017): 359.

reviewed the effectiveness of simulation training video games in her 2011 study on using computer games for teaching.¹⁰⁴ Quoting Tennyson and Jorczak (2008), she wrote: “Interactive cognitive complexity theory suggests that simulation games are more effective than other instructional methods because they simultaneously engage trainees’ affective and cognitive processes.”¹⁰⁵ Her findings revealed that simulation games were more successful if they conveyed course material actively rather than passively; if trainees could access the simulation game as many times as desired, and if the simulation game was a supplement to other instructional methods rather than stand-alone instruction.

Existing video games that address the prevention of GBV are largely directed toward young people. Currently, there is a dearth of video game-based learning resources for adults in low- and middle-income countries on the theme. Research shows that game-based learning has become an essential tool for enhancing learning retention and is relevant for adults.¹⁰⁶ Furthermore, studies highlight the need for culturally congruent games¹⁰⁷ to effectively reach multiple levels of community audiences. Substantiation of the benefits of video games for adults in healthcare and other fields does suggest that a video game on GBV targeted at adults in low to middle-income countries would be a viable proposition.

¹⁰⁴ T. Sitzmann, A meta-analytic examination of the instructional effectiveness of computer-based simulation games, *Personnel Psychology*, 64 (2011): 489–528

¹⁰⁵ Sitzmann, A meta-analytic examination,” 489-528.

¹⁰⁶ Sitzmann, “A Meta-Analytic Examination,” 489–528

¹⁰⁷ J. Misurell, and C. Springer, “developing culturally responsive evidence-based practice: a game-based group therapy program for child sexual abuse,” *J Child Fam Stud* 22 (2011): 137–149. DOI 10.1007/s10826-011-9560-2.

Chapter IV

GBV in Haiti: Cultural Relevance

This chapter discusses why Haiti is the subject of this study. It also discusses cultural relevance and why it is critical—no matter which country may be selected—for both meeting the specifics of abuse and the capacity for scalability.

Haiti is no exception to the global phenomenon of violence against women.¹⁰⁸ GBV is particularly widespread in Haiti's metropolitan areas.¹⁰⁹ Influenced by conservative and rural traditions, Haitian society is strongly patriarchal,¹¹⁰ and Haiti shows high acceptance of domestic violence myths. In comparison, societal acceptance of domestic violence appears more widespread in Sub-Saharan Africa and Asia than in Latin America, the Caribbean, Central/West Asia, or Europe. In this respect, Haiti is an outlier. Haitian acceptance of domestic violence myths sits at the top of the scale within the Caribbean region with 16.74% of Haitian women justifying domestic violence as acceptable for one reason or another—in stark comparison to 2.35% for the neighboring Dominican Republic. Runner-up Guyana places at 16.29% of women

¹⁰⁸ International Finance Corp.(IFC), “Understanding gender-based violence.” Available from https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/gender+at+ifc/resources/understanding-gender-based-violence. Accessed 10/11/2019.

¹⁰⁹ Institut Haïtien de l’Enfance (IHE) et ICF, *Enquête Mortalité, Morbidité et Utilisation des Services* (EMMUS-VI 2016-2017) Pétiion-Ville, Haïti, et Rockville, Maryland, USA: IHE et ICF, 2018.

¹¹⁰ N. Phillips, *The Vital Role of Grassroots Movements in Combating Sexual Violence and Intimate Partner Abuse in Haiti* (UK: Oxford University Press, 2015). DOI:10.1093/acprof:oso/9780199346578.003.0004 .

justifying DV.¹¹¹ In Haiti, women's justification of abuse is notable, although not as widely seen as in some other low- or middle-income cultures, such as Timor-Leste or Afghanistan.¹¹²

Discrimination against women can be found in all tiers of Haitian society: at home, in the workplace, on the street, and in the legal system. According to the most recent country study (2017) conducted by the Institut Haïtien de l'Enfance (in collaboration with USAID's DHS program), 29% of Haitian women (ages 15-49) have experienced some physical violence and one in eight has experienced sexual violence.¹¹³ The same study cites 45% of respondents who are married or in a relationship who reported being victimized by a husband or partner.¹¹⁴

Disaster conditions exacerbate GBV. Following the 2010 earthquake in Haiti, and subsequent reports in 2013, suggested that domestic violence touched as much as 70% of Haitian women.¹¹⁵ Tension and strife within the country, even beyond natural disasters, contribute to elevated GBV. Rioting, demonstrations, and other violent occurrences related to the socio-political climate are experienced frequently, particularly in the Port-au-Prince area. Verbal reports from personal contacts indicate great fear of abuse and violence on the streets, and kidnappings and murders are rife.¹¹⁶ Accurate data on violence against women in Haiti is reportedly difficult to obtain. "Country Reports 2012 notes that, according to some women's

¹¹¹ Sardinha, and Nájera Catalán, "Attitudes toward domestic violence," e0206101.

¹¹² Sardinha, and Nájera Catalán, "Attitudes toward domestic violence," e0206101.

¹¹³ Institut Haïtien de l'Enfance (IHE) et ICF., "Enquête Mortalité."

¹¹⁴ Institut Haïtien de l'Enfance (IHE) et ICF., "Enquête Mortalité."

¹¹⁵ Immigration and Refugee Board of Canada, "Haiti: Domestic violence, especially in rural areas; protection and services available for victims," 13 June 2013. Available from <https://www.refworld.org/docid/51dd24534.html>. Accessed 10/31/2020 .

¹¹⁶ J. Charles, "Anatomy of Haiti's kidnapping epidemic: No One seems immune," *Miami Herald*, 2020. Available from <https://www.miamiherald.com/news/nation-world/world/americas/haiti/article240941336.html>.

rights and human rights NGOs, domestic violence against women in Haiti ‘remained commonplace and underreported.’”¹¹⁷

Haiti has ratified numerous GBV-related international laws including CEDAW,¹¹⁸ the International Covenant on Civil and Political Rights, and the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women. Haiti has ratified international human rights laws that even other Western countries, such as the US, have failed to move ahead.¹¹⁹ However, Haiti and 81 other countries, among a total of 189 countries that have ratified CEDAW, have failed to sign off on CEDAW’s acceptance of individual complaint procedures, nor has it accepted the inquiry procedure for CEDAW, thereby undermining its intent and effect. Haiti lacks a legal framework to address domestic violence, and it does not have legislation in place to criminalize sexual harassment.¹²⁰ The US Department of State states: “The law does not classify domestic violence against adults as a distinct crime. Judges often release suspects arrested for domestic violence and rape.”¹²¹

At the same time, complementary actions by agencies such as the police, which should support the enactment of these international laws, are limited. In 2018, the Haiti National Police (HNP) unit on Sexual and Gender-Based Violence (SGBV) remained under-resourced and under-staffed. However, there were efforts initiated in 2017 with the UN Mission for Justice Support in Haiti (MINUJUSTH) to work with the Haitian government to develop the HNP,

¹¹⁷ Immigration and Refugee Board of Canada, “Haiti: Domestic Violence.”

¹¹⁸ CEDAW: Convention on the Elimination of All Forms of Discrimination Against Women

¹¹⁹ UN Treaty Collection.

¹²⁰ Human Rights Watch, Country Chapter: Haiti, 2019. Available from <https://www.hrw.org/world-report/2019/country-chapters/haiti>. Accessed 09/12/2019.

¹²¹ US Department of State, “Country Reports on Human Rights Practices, 2018,” Bureau of Democracy, Human Rights and Labor. Available from <https://www.justice.gov/eoir/page/file/1159756/download>, 19.

strengthen the rule of law, and promote human rights.¹²² Both domestic and international actors, such as the Canadian government, have also focused more strongly on combating violence against women, seeking justice for victims, with the result that more cases of sexual and GBV are making their way to court.¹²³

In Haiti recourse on GBV is still limited; 76% of victims state they never sought help, and only 11% of those that did seek aid approached the police.¹²⁴ Shame is a big factor in not reporting incidents, as is low expectation of results or change.¹²⁵ A larger factor is the woman's dependence on a man—a factor that greatly increases their vulnerability to domestic violence.¹²⁶ Capacity to follow through on legal processes is challenging, and knowing that dissuades many from reporting incidents. Most alarmingly, inaction is also due to pervasive patriarchal perceptions of GBV as being acceptable (by males and females alike), with 17% of women and 10% of men believing wife-beating is acceptable for one reason or another, including burning the dinner.¹²⁷ Often, the perception is that controlling or abusive behavior is an indication of love. With these misperceptions widespread, the reaction to a victim seeking support is often dismissive.

Numerous NGOs and other entities have sought to address GBV over the years in Haiti, using various tactics of prevention or intervention. Especially after the 2010 earthquake, there

¹²² US Department of State, Country Reports on Human Rights Practices, 2018: 7.

¹²³ M. Toraasen, "The long fight against impunity for gender-based violence in Haiti," 2019. Available from <https://www.cmi.no/publications/6875-the-long-fight-against-impunity-for-gender-based-violence-in-haiti>.

¹²⁴ Institut Haïtien de l'Enfance (IHE) et ICF., "Enquête Mortalité."

¹²⁵ Ibid.

¹²⁶ Immigration and Refugee Board of Canada, "Haiti: Domestic Violence, especially in rural areas; protection and services available for victims" 20.

¹²⁷ Institut Haïtien de l'Enfance (IHE) et ICF., "Enquête Mortalité."

was a marked uptick in interest by many groups, including NGOs, in working to reduce GBV in Haiti, since there was a notable increase in abuse following the earthquake.

Still today, Haiti experiences widespread GBV. Despite participating in international laws on GBV, Haiti's legal framework to provide support to abuse victims is weak. Recourse for victims in the event of abuse is not guaranteed to be supportive, depending on the source.

Scalable social impact in the area of GBV, to support a reduction in GBV, would be meaningful.

Creating a Video Game for Haitian Garment Factory Workers

The rationale for studying the possibility of creating an educational video game for Haitian garment factory workers rests on four key points:

1. A recent study of the Haitian population indicates that GBV appears to disproportionately impact women garment factory workers.¹²⁸
2. Studies of the GBV experiences of garment factory workers in other parts of the world suggest this is a particularly vulnerable demographic.¹²⁹
3. There is support in place through existing organizations.
4. Participants of a prior study verbally requested further resources to empower and inform them.

Until 2018, there was no documentation of GBV's impact on the work and home lives of Haiti's 53,000 garment factory workers. In 2018, Share Hope, a non-profit organization based in New York and Haiti and supported by the IFC, spearheaded a groundbreaking research study¹³⁰

¹²⁸ International Finance Corporation (IFC), "Understanding Gender-Based Violence."

¹²⁹ R. Naved, et al., "Female garment workers' experience of violence in their homes and workplaces in Bangladesh: A qualitative study," *Social Science & Medicine* 196 (2017): 150-157.

¹³⁰ International Finance Corporation (IFC), "Understanding Gender-Based Violence."

which revealed that GBV appears to disproportionately impact women garment factory workers. At least 53% of the female workers surveyed had experienced some type of GBV in their lifetimes, much higher than the global average of 35%, or the 29% country average cited in the 2017 study by the IHE.¹³¹ In addition, 85% of the women surveyed in the study indicated they believed sexual harassment was a factor in factory workers' daily lives.¹³²

This thesis does not explore or question the comparatively lower numbers on GBV cited in the recent IHE report on Haiti. However, it is noted that an average lower than the global average is unexpected given that the prevalence of GBV is usually elevated in societies characterized by high conflict, such as Haiti. According to the US Department of State's 2012 Country Report on Haiti, the country has a history of inaccuracies in data collection and reporting on this theme.¹³³

The group of garment factory workers across Haiti merits deeper research on the presence of GBV. In many cases, women workers are viewed as transgressing social norms because they are the primary wage earner. Women who work outside the home represent a threat to male supremacy and consequently may be more at risk of GBV. Research shows that "violence in the workplace and the home is overlapping and has similar drivers, with women framed as transgressing social norms; moreover, the use of violence in both settings is about maintaining existing gender relationships."¹³⁴

¹³¹ Institut Haïtien de l'Enfance (IHE) et ICF, "Enquête Mortalité, Morbidité et Utilisation des Services."

¹³² International Finance Corporation (IFC), "Understanding Gender-Based Violence."

¹³³ Immigration and Refugee Board of Canada, "Haiti: Domestic Violence."

¹³⁴ Naved, et al., "Female garment workers' experience of violence," 150-157.

Garment factory workers GBV experiences are documented in other parts of the world as well. In studies of Bangladesh factory workers and GBV, working women are challenging gender norms, which in turn threatens their male partners' status or exercise of power over the women. Naved et al. found:

First, how women's work changed the nature of relationships within the household, positioning women who worked with more power; and second, how working women transgressed gender norms, and the men's violence thus became a means by which to control women's sexuality.¹³⁵

The women factory workers in Haiti would likely concur. In results from the 2018 study, they indicated significant abuse and reactive behavior at home to their bread-winner status.¹³⁶ Women of the Haitian garment factories also cited instances of abuse experienced at the workplace in the 2018 study. While women in the garment sector are among the higher-paid women of Haiti's working poor, they suffer many issues of gender inequality at home and at work, including a wage gap and a large disparity in technical skills when compared with men.

Thanks to relationships within the Haitian garment factory world, organizational support exists in what would otherwise be a difficult environment to penetrate, and the network of participants is already in place as a result of the 2018 study. The organization Share Hope and the Centre Professionnelle des Femmes Ouvrieres (CPFO), a center established by USAID to provide care and training for the women of the garment factories, provide willing support for studying the technologization of GBV training through a video game.

¹³⁵ R. Naved, et al., "Magnitude and correlates of intimate partner violence against female garment workers from selected factories in Bangladesh," *PLoS one*, 13, no. 11 (2018): e0204725. doi:10.1371/journal.pone.0204725.

¹³⁶ C. Petterson, "Understanding Gender-Based Violence Through the Lens of Haitian Garment Workers: Situational Analysis," January 15, 2019. Unpublished manuscript that formed the basis of IFC report, "Understanding Gender-Based Violence," 2020.

The women who took part in the prior study at SONAPI spoke of their vulnerability to GBV in the workplace and exposure to it at home and on the streets, which represented considerable stress for them. Observing garment factory workers participating in GBV awareness classes highlighted this population's urgent need and their vocal demand for more of their peers to receive education about the different types of GBV and an enhanced awareness on healthy relationship dynamics. Informing this population on the supportive resources potentially available to them was of particular interest to the Haitian garment factory workers.

One may ask how the Haitian garment factory worker population of 53,000 sits within the socioeconomic landscape of Haitians, even though they are only 0.47% of the population. Haiti has a population of 11.1 million people, according to data from the World Bank in 2020.¹³⁷ The richest 20% of its population holds more than 64% of its total wealth, while the poorest 20% hold barely 1%. In 2012, six million Haitians lived below the poverty line of US\$2.41 per day, and more than 2.5 million fell below the extreme poverty line of US\$1.12 per day.¹³⁸

Factory work is one of the few sources of formal employment in Haiti. Workers earn around US\$5.00 per day. While this income is higher than the poverty line, it is not enough to cover costs of basic living, particularly after a 74% increase in living costs since 2014. Finances are especially strained for these workers. A living wage in Haiti would now be closer to US\$16.00 per day.¹³⁹ This income is critical to these individuals, many of whom are the sole

¹³⁷ World Bank. (2020). "Haiti." Available from <https://data.worldbank.org/country/haiti>. Accessed 06/07/2020.

¹³⁸ World Bank, "Haiti," 2020.

¹³⁹ C. Butler, "The High Cost of Low Wages in Haiti." <https://www.solidaritycenter.org/the-high-cost-of-low-wages-in-haiti-new-report/> on 08/16/2020. Note: Solidarity Center is an organization that empowers garment factory workers seeking global workplace justice and equality.

formal wage earner in a household of numerous extended family members. Participants who live with six or more people comprised 75% of the study group.¹⁴⁰

Globally, there are many opportunities to study the impact of a video game informing on GBV at any number of garment factory sites. However, Haiti's garment factory workers represent an accessible group and a unique opportunity to compare and contrast against the GBV experiences of similar global garment factory workers, as well as provide a valid participant group to represent their country. It does not mean that the final product would be restricted only to being useful for garment factory workers. Rather, the prototype would reflect universal GBV themes and be relevant to all while showing scenarios of garment factory workers' daily lives, which is expected to evoke recognition and familiarity.

As was obvious from the camaraderie, empathy, and thoughtful participation of the garment factory workers in the traditional GBV awareness class I observed in 2018, if empowered these women have the potential to be a dynamic, collective agent for change. Advancing gender equality is more than a goal in itself for the women in these factories. These workers can be a representative demographic for Haitian society as a whole, empowering people to become active participants in the design and planning of positive outcomes for themselves and their families, potentially providing benefits for future generations.¹⁴¹

The Psychological Importance of Cultural Relevance

Misurell and Springer's 2015 analysis of game-based cognitive behavioral therapy to treat child sexual abuse victims received notable support for its cultural relevance in

¹⁴⁰ Petterson, "Understanding Gender-Based Violence."

¹⁴¹ Yehuda, "Different Biological Mechanisms."

interventions. The authors stated: “Mental health researchers have highlighted the need to deliver evidence-based practices (EBPs) that are culturally relevant and responsive to the needs of diverse client populations.”¹⁴² Bernal et al. elaborated the importance of cultural relevance to a psychological intervention, stating that “there is considerable evidence that culture and context influence almost every aspect of the diagnostic and treatment process.”¹⁴³

It is important to guard against systemic bias and the imposition of Western norms, while ensuring that human rights norms are upheld. The best way to do that is to ensure stories are culturally relevant and reflect the global human rights laws as elaborated by the UN, specifically those detailed in the UN’s Sustainable Development Goal (SDG) #5.¹⁴⁴ At its foundation, a socially transformative resource is a psychological tool, and it must be implicitly culturally sensitive to its audience. Cultural sensitivity, manifested in the form of providing an indigenous solution, is all the more important when discussing a video game that attempts to realign perceptions of issues pertaining to domestic violence and gender-based abuse.

Humans are more likely to identify with and consider deserving of assistance those who resemble themselves. To cultivate social empathy, educators are encouraged to “enhance students’ skills through experiential learning activities designed to cultivate or increase affective and cognitive empathy.”¹⁴⁵ Gerdes et al. suggested that at a minimum, the experiential learning

¹⁴² Misurell and Springer, “Developing Culturally Responsive Evidence-Based Practice,” 137-149.

¹⁴³ G. Bernal, M. Jiménez-Chafey, and M. Domenech Rodriguez, “Cultural adaptation of treatments: A resource for considering culture in evidence-based practice,” *Professional Psychology: Research and Practice*, 40, no. 4 (2009): 361-368. <https://doi-org.ezp-prod1.hul.harvard.edu/10.1037/a0016401>.

¹⁴⁴ Sustainable Development Goal #5 is about gender equality and is one of the 17 Sustainable Development Goals established by the United Nations in 2015. The official wording of SDG 5 is “Achieve gender equality and empower all women and girls.”

¹⁴⁵ M. Adelman, K. Rosenberg, and M. Hobart, M. (2016). “Simulations and social empathy: Domestic violence education in the new millennium,” *Violence Against Women*. 22: 1453. 10.1177/1077801215625850.

activity should require students to have “intense cognitive, emotional, and behavioral experiences in order to develop new ‘tracks’ in their brains.”¹⁴⁶ These new tracks signify the engagement of mirror neurons on the visual, auditory, and somatic levels, allowing participants to relate to scenarios never personally experienced. In order to facilitate the richness of experience, Gerdes suggested it is essential to remove roadblocks to encouraging social empathy by making the tool visually, linguistically, and culturally appropriate for the user.

Haiti has experienced significant trauma as a nation. From its history of slavery to the travails of its revolution, subsequent economic crises and intermittent natural disasters, Haitians have endured trauma throughout their lives. It is classified as a country in Alert status, with a total Fragile State Index score just above Iraq on the Fragile States Index of 2019.¹⁴⁷ Today political strife consistently causes daily violent demonstrations, with kidnappings and murders of both Haitians and foreigners.¹⁴⁸ The effect of trauma and adrenaline-inducing fear cannot be underestimated when developing a video game that seeks to inform on GBV. An understanding of culturally relevant trauma and its impact on empathy by video game players is an important part of the training for such a game.

The concept of training and equipping the garment factory workers and their micro-society to provide a nurturing culture and an aligned form of education to the next generation are critical components to recovery. To achieve effective community support and nurturing, it is

¹⁴⁶ K. Gerdes, E. A. Segal, K. Jackson, and J. L. Mullins, “Teaching empathy: A frame- work rooted in social cognitive neuroscience and social justice,” *Journal of Social Work Education*, 47 (2011): 118-119.

¹⁴⁷ Fund for Peace. “Fragile States Index: Annual Report 2019.” Available from: <https://fragilestatesindex.org/wp-content/uploads/2019/03/9511904-fragilestatesindex.pdf>. Accessed 10/01/2020.

¹⁴⁸ *France 24*. “Outrage in Haiti over Kidnappings,” 11/30/2020. Available from: <https://www.france24.com/en/live-news/20201130-outrage-in-haiti-over-spike-in-kidnappings>. Accessed 11/30/2020.

important to disrupt the destructive presumptions that feed patriarchal thinking and to enforce the idea of empathy for GBV victims. For those who consider it normal to be beaten for burning the dinner, it is unreasonable to expect them to anticipate any other consequence for another committing the same transgression.

Haiti and other Caribbean nations that have been victimized by imperialism and oppression from outsiders understandably retain sentiments of disenfranchisement and mistrust of perceived or prior oppressors. To wit, Haiti was locked into payment for more than 156 years of an independence debt with France, which Thomas Craemer, in his study of reparations, called *immoral*; “Descendants of slaves were forced to pay reparations to descendants of their former owners.”¹⁴⁹ This repayment, equivalent to \$21 billion today, forced extensive borrowing to meet those payments and reinforced Haiti’s poverty—an egregious example of Haiti’s history of exploitation by colonial nations.

Furthermore, there is sensitivity to the perceived elitism of the French language, accompanied by patriotic assertions of Haitian Creole. While attempting to craft a culturally responsible tool, it is important that one considers such incidents of oppression that could undermine the message and make participants resist the information. Cultural sensitivity, in this instance means communicating in the mother tongue, not the language of the colonial oppressor.

Linguistic factors weigh heavily in a population with limited access to education. “Mother Tongue Matters: Local Language as a Key to Effective Learning” is the title of the introduction to a UNESCO study of four countries. It shows that indigenous populations are more comfortable with their native language than the officially endorsed language of the country. Not surprisingly, “research evidence today clearly shows that using the learners’ mother tongue

¹⁴⁹ T. Craemer, “Estimating Slavery Reparations: Present Value Comparisons of Historical Multigenerational Reparations Policies,” *Social Science Quarterly*, 96, no. 2 (2015): 639-655.

is crucial to effective learning.”¹⁵⁰ In the case of Haiti, not only is mistrust of prior colonial oppressors a factor, but also cultural and education circumstances mean that a large percentage of the population is likely to speak only Creole, with only 5% thought to have been educated in French, the official language.¹⁵¹ According to Haiti’s Constitution of 1983, French is the official language, and Creole and French are the national languages.¹⁵²

Nelson Mandela famously said: “Because when you speak a language, English, well, many people understand you, including Afrikaners, but when you speak Afrikaans, you know you go straight to their hearts.”¹⁵³ In other words, if you talk to someone in a language that person understands, they will understand you on an intellectual level. But if you talk to them in their own language, your message is far more likely to touch their heart and make an emotional impact. With a subject so emotionally charged as domestic violence, it is important to touch hearts, or (scientifically speaking) reach the affective centers in the brain, in order to maximize comprehension and encourage empathy. Unquestionably, by acknowledging Creole as the real mother tongue in Haiti, it would be most effective to present the video game in Creole.

Another example of the importance of using culturally relevant materials within a visual medium is a video employed by African Americans in cancer clinical trials at an urban cancer institute in the U.S. By displaying sensitivity to its audience, many participants’ concerns

¹⁵⁰ UNESCO, “Mother Tongue Matters: Local Language as a Key to Effective Learning,” 2007. Available from: <https://unesdoc.unesco.org/ark:/48223/pf0000161121>.

¹⁵¹ J. Chepkemai, “What languages are spoken in Haiti? 2019. Available from <https://www.worldatlas.com/articles/what-languages-are-spoken-in-haiti.html>. Accessed 06/05/2020.

¹⁵² N. Dutcher, “The use of first and second languages in education,” 1995: 7. Available from <http://documents1.worldbank.org/curated/en/131161468770987263/pdf/multi-page.pdf>. Accessed 7/10/2020.

¹⁵³ Nelson Mandela, *Nelson Mandela by Himself: The Authorised Book of Quotations*. New York: MacMillan, 2011. Note: quote from a conversation with Richard Stengel, December 1992.

regarding the program's motives were alleviated. The culturally relevant presentation "impacted attitudes associated with a concern about the ethical conduct of investigators; the fear of loss of autonomy after signing an informed consent form; worry about being treated poorly as a poor or minority patient; loss of privacy; and the lack of knowledge and awareness of clinical trials."¹⁵⁴ Evidence suggests that rolling out a video game with white faces in a country where the audience has brown faces risks inflaming resentment.

From a cultural perspective, consideration of content is critical. Ensuring comfort with the content can be key to achieving buy-in by the target audience. Cultural relevance of content, and cultural sensitivity to the targeted audience, is essential if the video game is to be a supportive tool to them. Most importantly, to appeal to a target audience, the users must be able to fully understand the content. For that reason, it should be in the language that is most comfortable and emotionally supportive to them.

Scalability in Low-Income Countries

Adoption of technology in Haiti is growing. A game-based tool could now be a useful vehicle for a GBV prevention program in Haiti. In years past, Haiti's technology challenges and limitations would have precluded a video game study, but new data suggest that the country is rapidly adopting new technologies, with a 3.15% year-over-year increase in mobile subscriptions that now encompass 63% of the population.¹⁵⁵

¹⁵⁴ D. R. Banda, M. Mete, and S. M. Swain, "A clinical trial with culturally appropriate video to increase participation of African Americans in cancer clinical trials," *Journal of Clinical Oncology* 29, no. 27_suppl (2011): 159.

¹⁵⁵ S. Kemp, "Digital 2020: Haiti," 2020. Available from <https://datareportal.com/reports/digital-2020-haiti>. Accessed 08/10/2020.

Further, 2017 data compiled by Ding, a mobile provider in Haiti, determined that 93% of survey participants owned a smart phone.¹⁵⁶ Data shows the widespread use of smart phones, and that most internet access and social media use is through mobile devices. There were 3.68 million internet users and 2 million social media users in Haiti in January 2020.¹⁵⁷ In July 2019, Facebook accounted for approximately 97% of social media site visits in Haiti, followed by Twitter and Pinterest.¹⁵⁸ It is estimated that social media use is significantly higher among factory workers than these nationwide numbers, based on cell phone ownership and observation of behaviors. These statistics suggest that a video game hosted on Facebook could achieve ready access with its targeted audience.

The social messaging application, WhatsApp, is touching every aspect of life there, even channeling fake news to the extent that a Haitian fact-checking company has been set up to debunk falsehoods. “Every group, every category, (and) any class in Haiti uses WhatsApp as a means of communication,” said Jean-Junior Joseph, a Haitian media blogger. “WhatsApp is implicated in politics, business, love, romance, friendship, entertainment. You name it.”¹⁵⁹ Clearly, for a successful game to go viral, a strategy using WhatsApp exposure is required to most effectively reach the largest potential audience in Haiti.

¹⁵⁶ Ding.com, “Calling Haiti: How Haitians use their smartphones,” 2017. Available from <https://www.ding.com/countries/caribbean/haiti/recharge-digicel/blog/calling-haiti-how-haitians-use-their-smartphones-infographic>. Accessed 07/14/2020.

¹⁵⁷ Kemp, “Digital 2020: Haiti.”

¹⁵⁸ Statista Research Department, “Haiti: social media visit share 2019,” 2020. Available from <https://www.statista.com/statistics/1034630/haiti-share-visits-social-media-websites/>. Accessed 07/23/2020.

¹⁵⁹ Bojarski, S. (2019). Social Messaging Apps Disrupt Telecoms Industry in Haiti. Retrieved from https://haitiantimes.com/2019/10/16/social-messaging-apps-disrupt-telecoms-industry-in-haiti/?relatedposts_hit=1&relatedposts_origin=24300&relatedposts_position=1 on 07/10/2020

Despite this growth in technology adoption, there remain significant challenges. Hardware provision is critical to information and communications technology (ICT) adoption; also an ICT ecosystem to support it. In their 2016 study on *The Centrality of Electricity to ICT Use in Low-Income Countries*, Arney et al. posited that access to electricity is fundamental to the success of any program which deploys ICT. They stated, “Overlooking the centrality of electricity to any ICT for development (ICT4D) initiative has enormous consequences; countless initiatives have failed to consider the (in)ability to power the technology that is central to such development efforts.”¹⁶⁰ Reliable access to electricity is largely experienced by the elite in Haiti, while corruption in the power sector is rife. Only about 25% of the population has access to electricity,¹⁶¹ as it is principally restricted to the capital; those who do rarely have it on a consistent basis.¹⁶² In Haiti, it is common for people to have no electricity at home and to be dependent on charging their phones at work, church, or even to pay someone who has electricity in their home to charge their phone for them.¹⁶³

Adoption of smart phones and use of social media shows a sophistication in the adoption of technology in Haiti that may support GBV prevention programs based on a video game. The unreliable access to internet and electricity can be a genuine impediment to deploying any type

¹⁶⁰ L. Arney, and L. Hosman, “The centrality of electricity to ICT use in low-income countries,” *Telecommunications Policy*, 40, no. 7 (2016): 617-627.

¹⁶¹ World Bank, “Haiti: 2013-14 strategy focuses on reconstruction and capacity building for stronger institutions,” 9/27/2012. Available from <https://www.worldbank.org/en/news/press-release/2012/09/27/haiti-strategy-focuses-reconstruction-capacity-building-stronger-institutions>.

¹⁶² G. Beckett, “Routine blackouts in Haiti symbolize a loss of political power for its citizens,” 2019. Available from <http://theconversation.com/routine-blackouts-in-haiti-symbolize-a-loss-of-political-power-for-its-citizens-110950>.

¹⁶³ R. Wilken, G. Goggin, and H. A. Horst, (eds.), *Location Technologies in International Context* (New York: Routledge, 2019). <https://doi.org/10.4324/9781315544823>. Accessed 01/20/2021.

of resource dependent on a reliable technical infrastructure. Cost also precludes video games made for larger systems such as a PlayStation or an Xbox for the majority of the population. However, a video game founded on mobile phone-based infrastructure may flourish.

In the next chapter, this study discusses the methodology for the formative evaluation of a prototype. Its development was informed by the insights gained from the literature review.

Chapter V

Methodology

The format of this study follows the style of a design research study leading to a formative evaluation stage of testing, analysis, and iterative prototyping, as discussed by Nieveen and Folmer in their chapter “Formative Evaluation in Educational Design Research.”¹⁶⁴ A formative evaluation is defined by Stetler et al. as “a rigorous assessment process designed to identify potential and actual influences on the progress and effectiveness of implementation efforts.”¹⁶⁵

The purpose of the design research study process is to shape the deliverable according to need, in order to achieve an enhanced version that meets requirements. This formative evaluation focuses on soliciting feedback that enables timely revisions to enhance the effectiveness of the product. It is anticipated that feedback on this early prototype will inform the validity of the hypotheses guiding the design of the program. As a work in the technology domain, the formative evaluation will be ongoing, as future versions respond to user patterns of use and demand.

¹⁶⁴ N. Nieveen, and E. Folmer, editors, “Formative Evaluation in Educational Design Research,” chapter 6 in Tjeerd Plomp & Nienke Nieveen, *Educational Design Research—Part A: An Introduction* (University of Twente, 2018). Available from: https://research.utwente.nl/files/14472302/Introduction_20to_20education_20design_20research.pdf. Accessed 01/19/21.

¹⁶⁵ C. B. Stetler, et al., “The role of formative evaluation in implementation research and the QUERI experience,” *Journal of General Internal Medicine*, 21 Suppl, no. 2(2006): S1–S8. Available from <https://doi.org/10.1111/j.1525-1497.2006.00355.x>.

Within the preliminary research phase, the five steps discussed by Nieveen and Folmer were followed. The earlier literature review of this thesis provided guidance on theories of action to inform the development of the educational intervention. The conceptual framework was established accordingly, and tentative design guidelines were modeled based on the information gathered. Next, a design proposal was established.

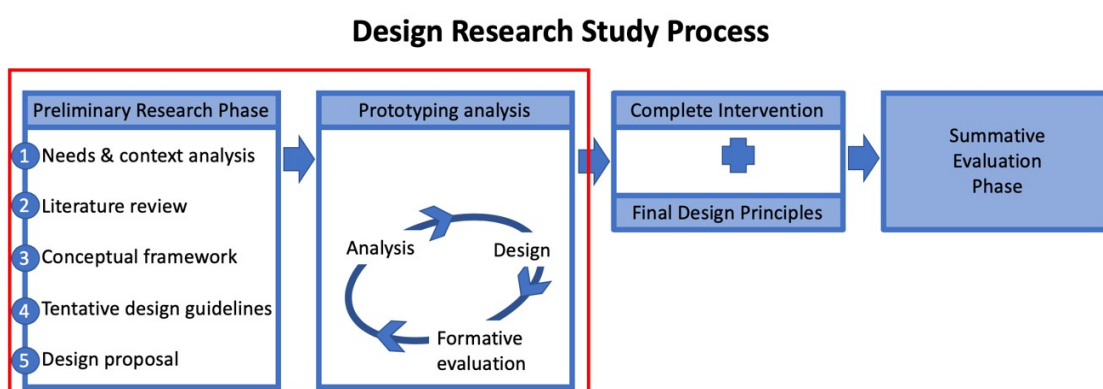


Figure 1. Design Research Study Process.

Source: inspired by the process discussed in Nieveen and Folmer, 2018.

The high-level needs and context analysis were shaped through conversations and feedback with academic experts in the U.S. whose analyses of video games that generate empathy are widely published. After establishing the target audience for the prototype, pre-development feedback was also solicited from Share Hope, which conducted the 2018 research with garment factory workers on GBV, and the Center for the Promotion of Women Workers (CPFO), which provides programs on human rights and gender for garment factory workers in Haiti.

I created the prototype of the video game in Unity 3D using the Fungus plug-in through my business entity, Sherohub LLC. Culturally appropriate artwork was outsourced to a young artist with copyright owned by Sherohub LLC. Prototype storylines were written by award-winning Haitian author Evelyne Trouillot,¹⁶⁶ with scenarios tailored to educate on GBV theory and relevant local resources referenced. Referencing what I learned from the literature review, the visual novel-format game was sculpted to provide experiential learning in a culturally, linguistically, and visually compelling manner. An important development consideration was optimizing the game's technical performance for a market where technical infrastructure is limited and typically low-end Android cell phones are used.

Video Game Prototype Development Description

As a result of the findings in the literature review, the game prototype utilizes aspects of previous preventive programs. Challenging patriarchal myths, the game seeks to provide trauma-informed educational content on GBV and aims to be culturally sensitive and appropriate, while finding a suitable technical platform through which to engage the target audience in a manner that would inspire community interest and dissemination.

The resulting game can be described as a serious game, presented in visual novel-format with a focus on narrative, with the somewhat unusual feature of accompanying audio. This selected medium allows players to choose the direction the stories will take and provides immersive interactive experiences. The game is purposefully designed to be simple to operate and navigate, taking into account the limited digital literacy of the participants, and it employs an intuitive click-based story progression, typical of visual novel-format games.

¹⁶⁶ Biography: https://en.wikipedia.org/wiki/Evelyne_Trouillot.

In their 2018 study on digital inclusion for low-skilled and low-literate people, Zelezny-Green et al. commented on user experience for this kind of user group, stating: “Ensuring the appropriate user interface and resulting positive user experience for low-skilled and low-literate users is essential to successful usage by this group.”¹⁶⁷ Thus, the game design aims to provide an unchallenging operating experience for those of low digital literacy, with a structured progression through character stories, and no barriers or roadblocks to proceeding, like ones that might be incorporated in other video games that could require the user to find an object on the screen before being able to proceed or require the resolution of a puzzle before navigating deeper.

Based on scenarios in the home, at work, and on the street, the stories in the video game engage the player in thought processes that question assumptions that maintain patriarchal thinking, while also portraying elements of different types of abuse, such as illustrated in the “Power and Control Wheel,” a diagram that describes the range of abuse types that may be encountered in an abusive relationship.¹⁶⁸ Through role playing, the player encounters a series of themes to establish foundational knowledge of what abuse is, and the game encourages empathy for those going through domestic violence or other types of abuse, as well as providing ideas on resources or support.

The game is culturally appropriate in that it addresses themes that were raised by content providers as being culturally sensitive and specifically relevant to Haitian lives. It is also visually and linguistically appropriate, in that audio dialog is provided in Haitian Creole, and all the

¹⁶⁷ R. Zelezny-Green, S. Vosloo, and G. Conole, “UNESCO: A landscape review: Digital inclusion for low-skilled and low-literate people,” 2018. Available from <https://unesdoc.unesco.org/ark:/48223/pf0000261791>. Accessed 09/06/2020.

¹⁶⁸ Power and Control Wheel, available from: <https://www.theduluthmodel.org/wheels/>.

embedded artwork reflects Haitian scenery, including scenes in and around the garment factory area.

The game features voiceovers throughout to minimize any literacy challenges experienced by users. To accommodate low-literacy readers (presumed to be the majority of users), the addition of voiceovers for the entire game is a departure from the standard visual novel-format game presentation. It is noted that voiceovers were used extensively in *Eliza*, an educational and experiential visual novel-format game in which the player serves as the human proxy for Eliza, a virtual counseling program named after the real-life ELIZA—an early attempt at artificial intelligence in the 1960s. Van der Geest, in his master’s thesis on visual novels, noted: “Voice acting [in visual novel-format video games] is rare and often limited to common interjections.”¹⁶⁹ Typically, background music files are used for visual novel-format games. The rationale for this being a rarity may be explained by performance concerns since the addition of large audio files increases the size of the video game prototype file, something that affects the performance characteristics of this project. This aspect is addressed in the results section as part of the technology scalability and suitability review.

In the game, the player meets eight different characters and learns about situations they are encountering. The characters are designed to encompass a broad spectrum of Haitian women, reflect different facets of Haitian life, and present different types of abuse. The player is given pre-set questions that define the progress of the game and enhance immersion in the game character’s story. It features a “game master” named Sofi, who provides feedback on choices made by the player, encourages the player to make empathic choices, and references available

¹⁶⁹ D. Van der Geest, “The role of visual novels as a narrative medium,” Masters thesis s0922544, Universiteit Leiden, 2015.

local, national, or legal resources. For someone with adequate literacy skills, the game takes a minimum of one hour to play all of the character's stories.

Table 1. Characters in the Video Game Prototype

#	Character	Introduction	Storyline Summary	Age
1	Kawol	Kawol: Left school two years ago; her mother could not afford to continue paying. She really hopes to finish her studies, but in the meantime, she must work to help her mother financially.	Kawol is being harassed by Caleb, and also sometimes by his friends, when walking on the street. Kawol questions whether it is her fault since another girl, who wears revealing clothes, is also harassed. The story encourages Kawol to understand that it is always the aggressor who is to blame. The story encourages her self-esteem and gives ways to bolster it.	Age: 20 Relationship status: Unknown Education status: Incomplete Children: N
2	Emilya	Emilya: Has no children. She is 34 years old and has been in love with Klotè for three years. It has been two years since he left for Martinique. He promised to send for her.	Klotè gaslights Emilya himself and through friends. Emilya really wants to have a baby, but he doesn't. He drags out the relationship with false hope. She feels dependent on his money yet feels that it is a dead-end relationship. The story suggests that she be true to herself and seek a relationship that works for her.	Age: 34 Relationship status: In a relationship Education: Unknown Children: N
3	Franswoz	Franswoz: She is over 50 years old. The work is hard for her, but her husband is dead, so she must do this work. She has three children. The two youngest are still in school.	Her son is abusive to her, wanting to control the household and even prevent her from entering a relationship with another man because the man is hearing disabled. He is critical and dismissive of her because she cannot speak French, only Creole. Even his friends are rude to her. The story encourages her to live her life the way she wants to, without guilt or shame.	Age: 50+ Relationship Status: Widowed Education: Unknown Children: Y
4	Andrèl	Andrèl: She is the baby of the family, just 20 years old. She came to Port-au-Prince two years ago and met a young man from Lascaobas, like her.	Andrèl is in a relationship in which she is being controlled. He wants to know where she is all the time, calls her very frequently, and puts pressure on her. He is also pressuring her by manipulating people around her to put pressure on her. He even tries to control her religious beliefs. The story teaches about subtle emotional manipulation and control and talks about how Andrèl will exit the relationship safely.	Age: 20 Relationship Status: Dating Education: N/A Children: N
5	Jozet	Jozet: She is just 30 years old. She did a workshop to learn to use sewing machines. What she earns allows her to rent a small room. She has been in love with Janmari for three months.	Jozet's story illustrates the financial abuse a garment factory worker may experience by being the breadwinner, thus upsetting the patriarchal norms. Her partner wants to control her financially and uses tactics to show his power and control over the relationship through physical and emotional intimidation to achieve his goals. Jozet is skeptical about banking. The story guides the player toward trust in having a bank account	Age: 30 Relationship status: Dating Education: N/A Children: N

#	Character	Introduction	Storyline Summary	Age
			for financial security.	
6	Anita	Anita: She is 23 years old. Her whole family lives in the countryside. Life is not easy for her. She plans to leave the country and is trying to save up the money to do so.	Anita is in a relationship with Domeng. He is very controlling over her. He tells her what to wear, tries to control who she spends time with, and is even trying to push her into getting pregnant, so she is covertly taking birth control pills. She is encouraged in the story to be true to herself, to consider why she is in the relationship, and to see support of friends.	Age: 23 Relationship Status: In a relationship Education: N/A Children: N
7	Magdala	Magdala: She is 32 years old, but since she was a young girl, she has been struggling with life. She has done all kinds of jobs; commerce, working as a maid, etc. She just recently got this job at the factory.	She has been subjected to repeated sexual abuse from Soval. He breaks into her house and rapes her. She also reveals that he is subjecting her to revenge-porn/cyber-bullying. She has changed the locks and got a new phone number, but he is still harassing her. She is ashamed. The story talks about not needing to be ashamed to go to her friends and family for help and support. It also discusses the issues of reporting to the police in Haiti because of their perceived unhelpful reaction. The story suggests she should consider approaching the police officers who are specially trained to handle cases of rape and assault, so she can get help and collaborate with other victims to present the case.	Age: 32 Relationship Status: Unknown Education: N/A Children: N
8	Mariwoz	Mariwoz: She is 38 years old and has two children. She used to work as a cook, but she wanted a change, so she came to work in the factory.	Mariwoz's husband is controlling. He says he doesn't like her being around so many people working at the factory and wants her to quit. He also tries to isolate her from family and other friends. He is violent with her. He is also psychologically manipulating the children by telling them that she makes him angry and that's why he hits her. The story talks about not being ashamed, not hiding the problem, and about getting help. It also talks about taking care of herself and introduces the concept that it's important to prevent the children from being in such an environment where they learn this abusive behavior.	Age: 38 Relationship Status: Married Education: N/A Children: Y

Sample Dialogue (Translated from Creole)

Scenario: Kawol is being harassed on the street by Caleb. You, the player, are talking with her about it. Sofi, the game master, also opines.

<<Kawol: I'll tell my cousins, they have friends who can walk home with me. We can form a group, so Caleb and his friends don't see me alone.

Player: Yes, it's good for Caleb to see you are not alone. You can also report it to the police. The police can ask him not to approach you.

Kawol: That's good to know. I didn't know I could go to the police for this.

Player: It's harassment. It's abuse. You should be able to walk on the street without getting hurt by someone else. The police can help you to be safe.>>

Later in the story:

<<Player: You say Caleb is also harassing another girl.

Kawol: Yes, and some people say that this girl dresses really inappropriately.

Player: If a girl is exposing too much skin, a man may feel it is an invitation.

Kawol: I don't think that should be the case.

Player: Exactly, I am glad you think that way! The way a woman decides to dress does not entitle unwanted attention.

Kawol: Caleb's harassment is neither my fault nor the other girl's fault.

Sofi (game master): It is good that Kawol realizes this; it is very important. Caleb's harassment is not the other girl's fault, and it is not Kawol's fault. No matter how a girl dresses, stalking her is never ok!>>

Table 2. Themes and Representation of Abuse Scenarios in the Game.

Themes and Representation													
Story	Type of abuse	Abuse location	Themes					Representation Historic/cultural			Strategies		
			Disability	Harasement	Sexting/ Revenge porn	Abuse in family	Inappropriate family relationships	Color discrimin ation	Education (French/ Kreyol)	Female Haitian heroes	Exit strategy	Personal care	Group care
Kawol	Bullying	Street		●							●	●	●
Emilya	Emotional abuse/intimidation	Home				●					●	●	
Franswoz	Male privilege	Home	●	●		●	●		●		●	●	●
Andrel	Emotional abuse	Home		●							●	●	●
Jozet	Financial abuse	Home		●		●					●	●	●
Anita	Emotional abuse	Home		●		●					●	●	●
Magdala	Sexual abuse	Home		●	●						●	●	
Mariwoz	Physical abuse	Home		●		●	●	●		●	●	●	●

Source: thesis author

Screenshots from the Video Game



Figure 2. Home Page/Start Screen Showing All 8 Characters Minus Sofi.



Figure 3. Introduction of Mariwòz, on the Main Street of the Factory Complex.



Figure 4. Introduction of Emilyya, Another Character.

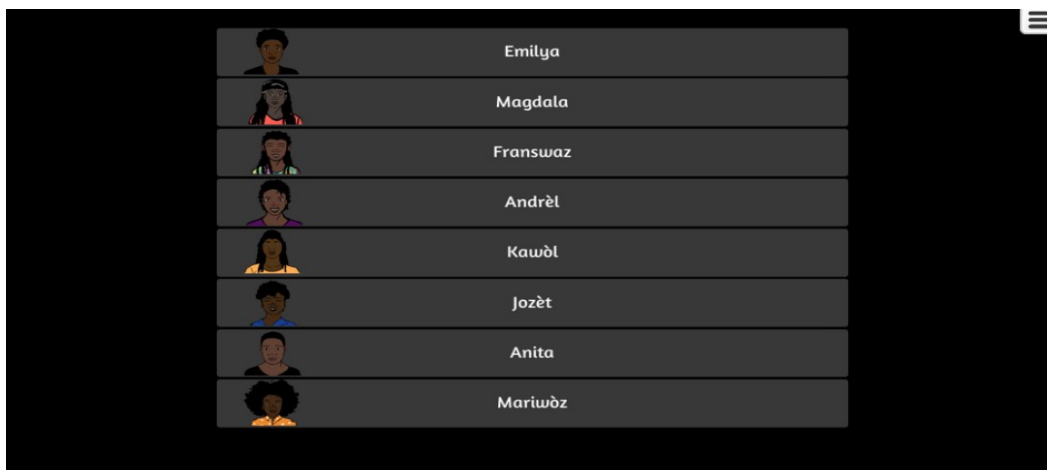


Figure 5. Screen for Selection of Characters' Stories.



Figure 6. A Scene in One of the Stories.



Figure 7. Selection Choices, With Buttons to Access Voiceover for Each Option.

Formative Evaluation Phases

The game's testing strategy was inspired by a quote from Heidi McDonald, an expert in creating empathy-inspiring games, who said in a panel interview: "Test, from very early stages, even concept stages, with two very important groups. One is the group of people who you want to include, and the other is subject matter experts."¹⁷⁰ Jesse Schell, of the video game company Schell Games, concurred, commenting in a keynote speech that "the more iterations, the better the game."¹⁷¹

Therefore, I solicited informal, concept-level feedback from video game experts first, then the formative evaluation progressed, using a preliminary version of the prototype, to what Nieveen and Folmer later referred to as screening and focus groups,¹⁷² which included:

1. Interns from a Haitian university leadership program. Representing multiple regions of Haiti, the interns served as proxies for the destined audience of the product;
2. A local team of experts in pedagogy and who work with garment factory workers; and
3. A local team of experts in domestic violence, well-woman, and other supportive services for garment factory workers.

After numerous development iterations of the prototype in response to feedback from the screening and focus group sessions, a trial was conducted with a sample of the target population; two groups of garment factory workers.

¹⁷⁰ Heidi McDonald, quoted in D. Takahasi, "We're only beginning to make games more accessible," 2018. Available from <https://venturebeat.com/2018/01/28/were-only-beginning-to-make-games-more-accessible/view-all/>. Accessed 09/08/2020.

¹⁷¹ J. Schell, *The Art of Game Design: A Book of Lenses*, third edition (Natick, MA: AK Peters/CRC Press, 2019).

¹⁷² Nieveen and Folmer, "Formative Evaluation in Educational Design Research," Chapter 6.

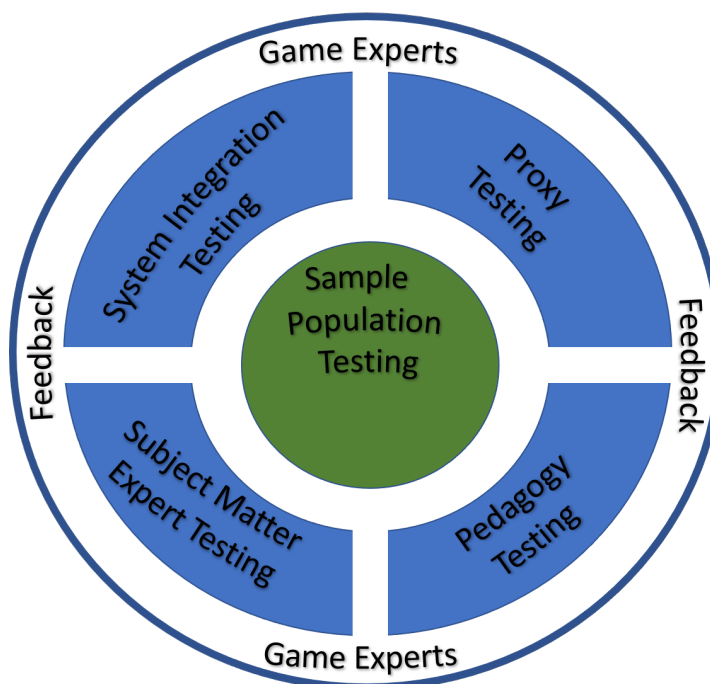


Figure 8. Formative Evaluation Process Participants.

Evaluation of the Game and Hypotheses

The formative evaluation incorporated a series of surveys, video conference interviews, and focus groups sessions to assess the core hypotheses driving the program's design. A distinct survey was created for the interns and professionals to gather their perceptions of the game and to also test the questions that would be presented to the sample garment factory worker population. For the target audience, or the garment factory workers, surveys included questions created by the author, and they also used pre-existing questionnaires and surveys to evaluate empathy capacity and their levels of acceptance of domestic violence myths (see Table 3). The survey content was formed into two surveys for participants of the study, one to be completed

prior to playing the game (Sondaj-1) and the second to be completed after playing the game (Sondaj-2) (see Table 4).

Table 3. Number of Survey Questions to Support Hypotheses.

	Survey	
	Pre-Game	Post-Game
Demographics	8	0
H1	4	16
H2	1	12
H3	5	13
H4	3	4
Game Design Feedback	0	23
Total	21	68

Table 4. Testing the Hypotheses Using the Pre- and Post-Game Survey Questions.

#	Hypothesis	Testing of hypothesis, measured from the pre-game and post-game survey questions.
H1	Role-playing stories (storytelling) of a domestic violence victim in a video game is an effective way to dispel stereotypical thoughts and arouse community empathy for victims	<p>Pre-game survey:</p> <ul style="list-style-type: none"> Establishing the participants prior knowledge of GBV, personal or academic Using the Interpersonal Reactivity Index (IRI) and Domestic Violence Myth Acceptance Scale (DVMAS) to establish the baseline of empathy and GBV myth acceptance Generic feedback about the game <p>Post-game survey:</p> <ul style="list-style-type: none"> Participants perception of the style and presentation of the game and an assessment of how immersed they became in the stories Usefulness of the game for learning about GBV, the advice given, and choices available How the game may have changed their position on helping an abuse victim and why an abuse victim should not feel shame <p>DVMAS, to assess any potential change in GBV myth acceptance</p>
H2	Cultural relevance in the video game is important	<p>Pre-game survey:</p> <ul style="list-style-type: none"> Language skills <p>Post-game survey:</p> <ul style="list-style-type: none"> Assessing how culturally suitable the game was, including the voiceovers, according to the participant and how important that was personally for them
H3	Using a narrative-based video game to learn about the scope of GBV and available resources will be effective for the audience, despite literacy challenges	<p>Pre-game and post-game survey:</p> <ul style="list-style-type: none"> Establishing the participants prior knowledge of GBV, personal or academic Knowledge of supportive resources and laws for an abuse victim <p>Post-game survey only:</p> <ul style="list-style-type: none"> Participants perception of the style and presentation of the game Perceived importance of the voiceovers DVMAS, to assess any potential change in GBV myth acceptance
H4	Scalability: recent technology progress and social media uptake in Haiti will facilitate scalable access to the video game	<p>Pre-game survey:</p> <ul style="list-style-type: none"> Participant's cell phone type, access to internet and social media usage <p>Post-game survey:</p> <ul style="list-style-type: none"> Participant's perception of usability of the game Medium used to play the game and social media most likely to be used to share the game

Use of Established Surveys

The Principal Investigator is not a clinical psychologist. However, using pre-existing (studied and tested) surveys for qualitative, not quantitative, guidance in crafting the final product through a formative evaluation, was determined to be a beneficial segment of the evaluation framework.

The Interpersonal Reactivity Index (IRI) survey, as well as the Domestic Violence Myth Acceptance Scale (DVMAS), were included in the study. Assessment of a participant's capacity for empathy using the IRI, and their degree of acceptance of GBV myths using the DVMAS, were utilized as vehicle through which to comprehensively test the game. To keep the surveys brief, the Illinois Rape Acceptance Scale was not included in the surveys, although it would have provided relevant data and could be considered for future studies, as it would complement some of the content of the game.

Use of existing questionnaires and surveys provides a studied method of evaluating results from the participants on a number of themes. It is helpful to assess attitudes toward GBV in order to see if participants have modified their thinking about patriarchal themes, and to evaluate their capacity for and support for victims.

A participant's level of empathy is a critical factor in evaluating their propensity to digest the contents of a GBV program. While the society may be patriarchal in nature, empathy is a psycho-social vehicle through which the negative presumptions of such a culture can be transcended. As such, the empathy status of the participants was deemed essential to the objectives of the exercise.

In determining relevant scales for evaluation of empathy levels, consideration was given to the older Hogan Empathy Scale and QMEE empathy surveys, as well as the Toronto Empathy

Questionnaire constructed by Spreng, et al.,¹⁷³ and other tools. However, the Interpersonal Reactivity Index¹⁷⁴ (IRI) was determined to provide the best instrument for analyzing the participants based on the style of questions it contained and its succinct nature. This study does not allow for extensive survey-taking due to the busy nature of the participants' lives, so the IRI,¹⁷⁵ with its subscales of Empathic Concern, Personal Distress, Fantasy Scale, and Perspective Taking, allows assessment of the multifaceted nature of empathy through a concise 28 questions.

Using existing methodologies and clinical measurement tools provides validity to a study. Many surveys exist as a result of modifications for situational requirements. Smith Slep, et al., for example, stated that in a test of a dating violence program in Long Island, New York schools, the school board required removal of certain questions from the template survey since they were deemed inappropriate for teens.¹⁷⁶ Modifications for cultural and linguistic nuances may also be necessary depending on the case study.

Use of the scales in the study was applied experimentally in specific test phases, according to methods used in other relevant studies. For example, use of the DVMAS was applied after referencing literature used in a study by Ariel Wootan Merklings¹⁷⁷ to investigate the impact on the domestic violence myth acceptance of participants in the *In Her Shoes* program.

¹⁷³ N. E. Spreng, M. McKinnon, R. A. Mar, and B. Levine, The Toronto Empathy Questionnaire: Scale development and initial validation of a factor-analytic solution to multiple empathy measures, *Journal of Personality Assessment* 91(2009): 62–71.

¹⁷⁴ M. H. Davis, Interpersonal Reactivity Index, 1980, 1983. Available from <https://docs.google.com/document/d/1YCKkyg-OVpT0Qz36qFdHM7yeSGj0DsUYgyx9u7ubnc/edit>.

¹⁷⁵ M. H. Davis, The Interpersonal Reactivity Index, 1983. Available from <https://fetzer.org/sites/default/files/images/stories/pdf/selfmeasures/EMPATHY-InterpersonalReactivityIndex.pdf>.

¹⁷⁶ A. M. Smith Slep, et al., “Two new measures of attitudes about the acceptability of teen dating aggression,” *Psychological Assessment* 13, no. 3 (2001): 306-318.

¹⁷⁷ Wootan Merklings, “Dispelling domestic violence myths among graduate social work students.”

Particularly pertinent to this thesis, the subject program uses storytelling to invoke empathy in the participant and dispel acceptance of DV myths. This study had 18 students participate in an *In Her Shoes* activity and 25 other students participate in an alternative activity for comparative purposes.

As an initial formative evaluation, this study in Haiti will not have a comparative group. The method of administering the DVMAS before the intervention and after the intervention, like the *In Her Shoes* study, will be leveraged for this study. The methodology for calculating the DVMAS score in this study simply reviewed the before and after scores.

Use of the IRI for this study was not intended to be exhaustive, but a means by which to flag potential empathy weaknesses in participants, as well as an indication that the game is being successful in encouraging empathy. Use of the IRI scale in this instance should not be considered as scientific validation of the survey for use within the Haitian Creole culture. Further use and scientific validation with the participation of a clinical psychologist is desirable.

The use of IRI in new cultural contexts has been previously in validated studies like one undertaken by Gilet et al. in 2013.¹⁷⁸ Their work validated a French version of the IRI (F-IRI), albeit for a mixed-gender group.

High-level IRI scoring was done as part of the pre-study survey to validate participants' empathy levels. Methodologies used for the IRI vary. In Gilet et al.'s study, the methodology summed the data for each participant for the four different sub-scale dimensions of dispositional empathy: "Empathic Empathy (emotional empathy), Perspective Taking (cognitive empathy), Fantasy (empathy for fictional characters), and Personal Distress (self-focused responses to

¹⁷⁸ A. Gilet, Assessing dispositional empathy in adults: A French validation of the interpersonal reactivity index (IRI), *Canadian Journal of Behavioural Science*, 45, no. 1 (2013): 42-48. Available from <http://search.proquest.com.ezp-prod1.hul.harvard.edu/docview/1282590063?accountid=11311>

other's suffering"¹⁷⁹) using a 7 to 35 scale. Other uses of IRI data include averaging using 0 to 4 or 1 to 5 endpoints, or summing the data in the subscales, using a 0 to 28 range.

A recent study by Wang et al. on the rationality of the extant ways of scoring the IRI, criticized various unverified IRI scoring and measurement methods using confirmatory factor analysis, suggesting summing only empathic concern (EC) and perspective taking (PT) is a better means through which to assess a participant's empathy. Their results showed that "most of [the] [measurement] models do not fit well, indicating that the scoring approaches of the IRI corresponding to these models may be problematic."¹⁸⁰ Their recommended approach of summing EC and PT for a total IRI score and PT as cognitive empathy will be used in this study.

Use of the surveys in this thesis to assess initial effectiveness of the video game is exploratory. However, as a process for creation of surveys in the formative evaluation process, using established surveys together with customized questions provided a useful hybrid approach for gathering critical information. Evaluating participants' empathy levels provides some insight into how impactful and resilient an empathy-generating exercise, such as storytelling and role-playing, may be. Assessing the participants' acceptance of DV myths, using an established and tested survey, provides an avenue to explore effective ways to assess myth acceptance. Collecting information from these multiple sources to inform the game design contributed to validation of the game's presumptions and protected against misinterpretation of limited data.

¹⁷⁹ S. Konrath, *Critical synthesis package: Interpersonal Reactivity Index (IRI)*, 2013. Available from https://www.mededportal.org/doi/10.15766/mep_2374-8265.9596. Accessed 08/15/2020.

¹⁸⁰ Y. Wang, Y. Li, W. Xiao, and Y. Fu, "Investigation on the rationality of the extant ways of scoring the interpersonal reactivity index based on confirmatory factor analysis," 2020. Available from <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01086/full>. Accessed 08/10/2020.

Translation Methodology

The survey questions created by the author were translated from English into Haitian Creole with the assistance of Google Translate, with validation by both the HELP interns and the Share Hope team.

The IRI, established in English, has been translated into a limited number of other languages (i.e., Swedish, Spanish, French, Chinese, German, and Dutch). No version currently exists in Haitian Creole. To the author's knowledge, after a comprehensive review of the literature and numerous keyword searches, this study represents the creation and use of the first formal translation of the IRI into Haitian Creole. References have been made to the English and French IRI versions¹⁸¹ and associated studies in composing the Haitian Creole translation.

The IRI survey was translated into Haitian Creole from the French version by bilingual Haitian parties of Share Hope. The English version was used for reference by the translators. Subsequently, a Google translator was used to carry out a blind reverse translation (i.e., from Creole to English). Finally, the Creole to English translation was contrasted with the original IRI in English to verify the accuracy of the Creole version. To test the participants' understanding of the items and the overall assessment of the scale, a pre-test was carried out with three subjects. This resulted in modifications to some items to enhance clarity. The Share Hope team tested translated versions of the survey to ensure it was culturally relevant and appropriate, and an independent team of three bilingual external parties validated the final translation.

Similarly, the DVMAS did not exist in Haitian Creole. This translation was performed using Google Translate in a forward- and back-translation procedure. Finally, validation against

¹⁸¹ Gilet, et al., "Assessing dispositional empathy in adults," 42-48.

the English version was carried out by the Share Hope team with numerous corrections applied and some modifications for cultural relevance.

System Integration Testing

Initial System Integration Testing (SIT) was conducted to ensure the game worked on media most applicable to the Haitian audience, i.e., Windows and various Android operating systems, for both phones and tablet devices. Key test points such as confirmation of display size, game launch speed and performance, and functionality were validated.

Proxies: Sherohub LLC's Haitian Summer Interns

As the first Haitians to review the game, the interns initially played the game using the WebGL version on itch.io. However, this presented significant performance issues due to the size of the game and internet connection speeds in Haiti. The performance problems manifested in timing issues with the progression of the game. The interns continued testing by downloading the game to their personal laptops. The interns were asked, via a Zoom video conference session and written instructions, to review the game from the perspective of language correctness, story flow, DV-related content, and potential revisions. Testing results were recorded using the spreadsheet shown in Appendix A for tracking purposes.

Share Hope Pedagogy Experts Weigh In

The next round of testing focused on ensuring the quality of the game's achievement of the theory of action by seeking feedback from professionals of the Share Hope organization. They were provided with access to a version of the game that had been modified since the initial round of testing with the interns. This test phase involved playing the game again, providing

further feedback on necessary improvements via email, and completing a survey delivered by Google Forms.

The survey completed by the Share Hope team provided pertinent feedback since the team had been working with garment factory workers since 2010, in various capacities, primarily academic and medical education. They also provided training on GBV to a number of peer educators in collaboration with CPFO in 2018. In addition, they led a study on the impact of GBV to the garment factory workers along with the IFC, which formed the impetus to investigating the impact of the video game with this same population. The team is very familiar with the garment factory worker population and its characteristics.

The Share Hope team members played the game and responded to questions on a Google Form. The survey they completed included both qualitative and quantitative questions to facilitate evaluation of the theories of action. They also participated in an informal review session post-survey to provide additional feedback on clarifications requested.

CPFO Professional Agency Support-Specific Feedback

A video conference was held with the Share Hope team and the CPFO team to present the video game prototype and to introduce feedback-gathering requirements. The latest version of the video game was provided to the CPFO representatives, and their review was conducted independently before providing feedback via Word document through email.

Recruitment and Activity of Sample Participants

Factory worker participants were recruited for the project through their relationships with Share Hope, a hybrid organization that works in both the commercial and NGO space. It is a

non-profit organization that places large contracts in the garment sector and, using profits from that activity together with donor funding, runs a host of social programs to benefit the garment factory workers. These programs are primarily aimed empowering women, but they also benefit other workers, including the deaf and hard-of-hearing community. Share Hope's program attendees include factory workers from 25 different clothing factories.

Participants are garment factory employees who already participate in the High School Completion program or other programs offered by Share Hope. They were informed of the study by Share Hope and volunteered to participate in the study. Inclusion criteria were as follows: adult (18 years and older); male or female; country of birth and residence is Haiti; and work site is, or is usually, one of the factories at SONAPI business park that has a relationship with the Share Hope Foundation and/or CPFO.

Approximately 24 garment-sector employees from a population of specific factories were invited to participate in the video game study, using a convenience sampling approach, through Share Hope's current program participants. All accepted. Based on sample sizes in related research programs to evaluate the efficacy of video games for adherence to cancer medicine,¹⁸² and research programs on abstinence from sexual activity,¹⁸³ the selected sample size was assessed to be comparable. Participants were garment-factory employees who may have previously participated in training on GBV awareness with Share Hope and CPFO.

Participants used a loaned Android tablet, Android phone, or a Windows computer, and the study was completed remotely and electronically. Participants were provided electronic

¹⁸² P. Kato, S. Cole, A. Bradlyn, and B. Pollock, A video game improves behavioral outcomes in adolescents and young adults with cancer: A randomized trial. *Pediatrics*, 122, no. 2 (2008): E305-e317.

¹⁸³ L. E. Fiellin, et al., "Video game intervention for sexual risk reduction in minority adolescents: Randomized controlled trial," *Journal of Medical Internet Research*, 19, no. 9 (9/18/2017): e314.

access to the prototype video game and the online Google form pre- and post-game surveys. They were asked to play the game prototype for up to one hour.

All garment-factory worker participants in the study provided informed consent after receiving an explanation of the study's purpose and procedure via the consent document provided in their own language, Haitian Creole, which was integrated with the pre-study survey. An audio version of the consent document was also provided through a link in the pre-study survey. Participants consented to participate and completed surveys using a unique identifier. The study was determined to be exempt by the Harvard University's IRB process.

The pre-game survey, which was comprised of questions to gather both quantitative and qualitative data, included the IRI and the DVMAS. The after-game survey included questions seeking further quantitative and qualitative data, as well as the DVMAS, but it did not include the IRI. See the appendices for each of these items.

All participants were informed that their participation would be anonymous, that their results were being used exclusively for academic purposes, and that they may be invited to participate in an interview at a later date.

Participation was done in two phases with 12 subjects participating in both iterations. A number of questions and available responses in the Google survey were revised after the first phase when it became obvious from the Phase 1 responses that confusion could occur.

Table 5. Garment Factory Workers Survey Summary.

Survey Content	Pre-game Survey	Post-game survey
1 General demographics info	Yes	No
2 Future product scope info/product formative evaluation questions: H-1: Role-playing stories (storytelling) of a domestic violence victim in a video game is an effective way to dispel stereotypical thoughts	Yes	Yes

and arouse community empathy for victims.

H-2: Cultural relevance in the video game is important.

H-3: Using a narrative-based video game to learn about the scope of GBV and available resources will be effective for the audience, despite literacy challenges.

H-4: Scalability: Recent technology progress and social media uptake in Haiti will facilitate scalable access to the video game.

3	Interpersonal Reactivity Index	Yes	No
4	Domestic Violence Myth Acceptance Scale	Yes	Yes

Finally, an interview was conducted with two participants over Zoom, and members of Share Hope provided interpretation. Data derived from the interviews was then processed with the survey responses to achieve simple assessment of the hypotheses. Video release forms were signed with interview participants.

Survey Adjustments and Data Treatment Considerations

It became obvious during the testing with Group 1 that some survey questions were confusing to the participants. After Group 1's responses were evaluated, adjustments were made to the survey questions prior to submitting the questions to Group 2. The changes include the following:

- *Birth date* was made freeform, since the field with date requirement validation seemed to cause confusion.
- *Additional job status options*: A job status was added to reflect those who are not currently working at the factories. Quite a large number of Group 1 participants were invited to participate by Share Hope because they are participating in current educational

programs with the organization, but due to the pandemic, they were laid off and are not currently factory workers.

- It was advised by Share Hope to also include an option for “non-management, not supervisor, not operator” to allow for other activities in the factory that were not reflected.
- *A new marital status* was added in the second phase for “civil union.”

Distinct Google surveys reflecting these changes were used for Group 2’s testing phase to ensure the results were kept separate from the first group of participants.

General observations about the efficacy of using Google Forms and associated functions revealed important considerations for any similar methodology. While Haitian Creole displays well on the Google Form online, the service does not handle the written accents of the Haitian Creole language when downloading to .CSV file, so data remediation work was needed to decipher some field values. In addition, some participants accidentally created a duplicate of their entries. These were easily identified because their code identifier was the same for both records and all other data values were also mirrored. A total of three obvious duplicate entries were noted and excluded from consideration.

Analysis of the data from the garment factory workers’ surveys was done in three intervals. The first set of questions in the survey data was designed to stimulate the production of as much qualitative data as possible given the pandemic circumstances. The qualitative survey data was first processed by translating the responses from Haitian Creole into English. Then, responses were coded where appropriate or processed via interpretation before sorting the responses into summarized themes. The detailed responses are available in the links provided in

the addendum. The IRI and the DVMAS data were also analyzed against demographic and other data.

Evaluation of the Hypotheses via Survey

The four thesis hypotheses described in this section were applied in the formative evaluation to determine the extent to which the tablet/cell phone-ready prototype video game containing GBV information may contribute to changing cultural norms about GBV.¹⁸⁴

Qualitative and quantitative data was collected electronically using pre- and post-study survey methods in order to gather feedback for the formative evaluation. Surveys were created using Google Forms. Data management, statistics, and analyses of the feedback data was performed using Excel. The matrices defining which questions address each hypothesis follows the definition of the hypotheses:

H-1: Role-playing stories (storytelling) of a domestic violence victim in a video game is an effective way to dispel stereotypical thoughts and arouse community empathy for victims.

H-2: Cultural relevance in the video game is important.

H-3: Using a narrative-based video game to learn about the scope of GBV and available resources will be effective for the audience, despite literacy challenges.

H-4: Scalability: Recent technology progress and social media uptake in Haiti will facilitate scalable access to the video game.

¹⁸⁴ T. Abramsky, et al., "What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence," *BMC Public Health*, 11 (2011): 109. Available from <http://doi.org/10.1186/1471-2458-11-109>.

See Table 6 for the pre-survey questions mapped to these hypotheses and Table 7 for post-survey questions mapped to these hypotheses.

Table 6. Pre-Survey Questions Mapped to the Hypotheses.

Pre-Game Survey Question	Demographics or other	H1	H2	H3	H4
1. Date of Birth:	X				
2. Gender:	X				
3. Religion:	X				
4. Marital status	X				
5. Neighborhood or City name	X				
6. Who lives at home with you?	X				
7. Highest level of education attained:	X				
8. What is your position in the factory?	X				
9. What kind of cell phone do you have?					X
10. Where can you access Internet/Wifi?					X
11. What social media and communication platforms do you use regularly?					X
12. Do you speak languages other than Creole?			X		
13. Have you done GBV awareness training before with Share Hope/CPFO?		X		X	
14. Do you know a domestic violence or rape victim?		X		X	
15. Do you know what resources are available to help abuse victims at/outside SONAPI?				X	
16. Do you know what laws are available to help and protect abuse victims?				X	
17. Which [resources/agencies] would you recommend to help a friend who is being abused?				X	
Section: IRI ¹⁸⁵ - 28 Questions		X			
Section: DVMAS - 18 Questions		X			

¹⁸⁵ See Appendix 2 for the IRI and the DVMAS in English and in Haitian Creole.

Table 7. Post-Survey Questions Mapped to the Hypotheses.

Post-Survey Question	Game Design	H1	H2	H3	H4
1. Medium used game; Android or Windows					X
2. What did you like about the game?	X	X	X	X	X
3. What did you dislike about the game?	X	X	X	X	
4. Was the audio important to you?	X		X	X	
5. Are the challenges the characters face in the game relevant to the Haitian culture?	X	X	X		
6. Are the character's challenges relevant to Haitian garment factory workers' lives?	X	X	X	X	
7. Was it important for you for the game to relate to Haitian life?	X	X	X	X	
8. I felt that the game was useful for learning about violence against women?	X	X		X	X
9. Which stories in the game did you play?	X				
10. Did you re-play or want to re-play any of the stories in the game?	X				
11. Which character's story did you play first?	X				
12. If you didn't like any story, please explain why.	X	X	X	X	
13. Were there any points that confused you while playing the game?	X		X		
14. Did Sofi give good advice?	X	X	X	X	
15. Did you feel sad for any of the characters?	X	X			
16. Did you feel upset with/frustrated by any of the characters?	X	X			
17. Did the choices reflect options you agreed with?	X	X			
18. Since the game, do you know more about resources available to help abuse victims?	X			X	
19. Would you help those who are suffering from abuse to find resources to help them?	X	X		X	
20. Who would you approach for help in the event of abuse?	X			X	
21. Since the game, has your opinion changed on who should feel shame about abuse?	X	X	X		
22. Did the game impact your likelihood to seek help if GBV happens to you?	X	X	X	X	
23. Over which social media would you be most likely to share the game?	X	X	X	X	X
DVMAS - 18 Questions	X	X			

Chapter VI

Pre-Target Population Rounds of Feedback Collection

System Integration Testing Results

There were some issues with loading and starting the game on devices using older versions of the Android operating system. However, the video game worked on more recent versions. It was noted that the games launch was slow, with an initial wait time of up to a minute for some machines. None of these issues were determined to be a roadblock to engaging in the next stage of testing, User Acceptance Testing (UAT).

UAT Phase 1: Sherohub LLC's Haitian Summer Interns

Defects or suggested enhancements found by the interns' testing were categorized, then prioritized as shown in Table 8.

Table 8. Defects Found in Test Phase 1.

Defect/Enhancement Category	High	Medium	Low
Artwork			1
Content enrichment	18		
Creole correction	93		
Functionality issue	9	1	2
Voiceover missing	28		
Voiceover mismatch	137		

The largest number of identified issues in this testing phase (57%) occurred as a result of correcting either missing or misaligned voiceover files, which required significant recording or re-recording of voiceovers by the Share Hope team and other volunteers. Creole typographical errors accounted for 32% of the issues.

The game then went through a number of revisions in order to incorporate other feedback that was prioritized as necessary changes, including some additions to the storylines to enhance their educational value. Other changes performed after the UAT phase included optimization by segmenting the game up by scenes to reduce game file size and changing the audio file format to support faster loading.

Qualitative feedback received from the interns in this phase revealed the relevance of the prototype's content to the lives of Haitian women, their relationships, work and pay, even in the way they dress:

- Of Franswaz' story: "Very relevant to Haitian women, will help many to change their relationship with the other gender. Many who are unemployed suffer this kind of abuse."
- Of Kawol's story: "Very relevant to daily life in Haiti for women, being afraid because you are a girl, fearing comments on how you may dress yourself, and the restrictions in self-expression. [This and the advice in the other stories in the game] could help many, not only the garment sector."
- Of Jozet's story: "Because we are women, we can't pretend to have the same salary as a man, even if we have more experience. Sometimes we may be underpaid and will never know because salary is secret. Is there an institution that can control gender-based abuse in salary rank?"

- Of Mariwoz’s story: “Discrimination and abuse based on skin color is very prevalent in Haiti for any gender. I like how the game addressed this theme. It would be a good idea for the story to include a way to help Mariwoz and her children through therapy with a psychologist and a focus group to heal from the abuse and express themselves.”

UAT Phase 2: Share Hope Professional Feedback

Feedback from the Share Hope team was positive in terms of content, prospects for personal empowerment, and the myth-dispelling goals of the project. Feedback from the Share Hope team resonated with the hypotheses for this study.

Table 9. Hypothesis Validation: Phase 2 UAT

Hypothesis	Feedback
H-1: Role-playing stories (storytelling) of a domestic violence victim in a video game is an effective way to dispel stereotypical thoughts and arouse community empathy for victims.	They validated the design elements of role-play using multiple stories to challenge GBV myths and encourage empathy for victims (theory of action). They affirmed the empathy generation potential built into the design.
H-2: Cultural relevance in the video game is important.	It was agreed that the visual, narrative, and other aspects of the design resonate with the culture appropriately and would be familiar to the participants.
H-3: Using a narrative-based video game to learn about the scope of GBV and available resources will be effective for the audience, despite literacy challenges.	The Share Hope team agreed that the video game was a suitable tool for the audience to learn about the scope of GBV and resources. Literacy challenges would be mitigated by the voiceover function.
H-4: Scalability: Recent technology progress and social media uptake in Haiti will facilitate scalable access to the video game.	It was agreed that the tool could be suitable for the current technology status of Haiti, although it was thought that challenges would be presented in accessing the game by lower digital literacy and by the limited access to the internet or smartphone technology that could be experienced by some.

Survey Responses from Share Hope

Question: Were all the stories relevant to Haitian life? (mark any that were not)

Response summary: One participant checked all the characters due to misunderstanding the instructions. Otherwise, all stories were considered to be relevant to Haitian life, a point that is also reflected in other responses to the survey. The survey question was clarified for subsequent participants to avoid further confusion.

Question: Which character did you connect the best with? Why?

Response summary: Two responses reflected no preference but a connection with all characters in the story. However, Emilyya, Franswaz, and Magdala stood out to three testers for how their story echoed the experience of people in their lives or just for their strength of character.

The screenshot shows the Sherohub survey interface. At the top is the Sherohub logo, which consists of a pink rose icon and the text 'sherohub' in white on a black background. Below the logo is the title 'Sherohub Sondaj - Share Hope/CPFO' and a subtitle 'Tanpri jwe jwèt la nan moman an epi ranpli sondaj la.' There is a link to the survey: 'Ranpli fòm sa vle di ou bay konsantman ou dapre fòm konsantman ki atache a: <https://bit.ly/2OmQV8G>'. The survey contains five questions:

- 1-Èske tout istwa yo reflekte lavi ayisyen? (make nenpòt ki pa fè sa)
 - Andrel
 - Anita
 - Emilyya
 - Franswaz
 - Mariwoz
 - Jozet
 - Kawol
 - Magdala
- 2-Ak ki karaktè ou santi ou byen konekte? Poukisa?

Your answer _____
- 3-Si ou pa renmen nenpòt ki istwa, tanpri eksplike poukisa.

Your answer _____
- 4-Eske ou te konfi nan nenpòt ki pwen pandan w ap jwe jwèt la? Tanpri ekri yo.

Your answer _____
- 5-Jwèt la ankouraje senpati pou yon viktim abi?

1 2 3 4 5

Pa dakò ditou ○ ○ ○ ○ ○ Dakò a 100%

Fig. 9. UAT Phase 2 Share Hope Survey.

Question: If you didn't like any stories, please explain why.

Response summary: All the stories were appreciated by the testers for their accurate portrayal of Haitian reality, and for their capacity to evoke empathy for someone suffering from abuse. The advice was deemed to be good.

Question: Were you confused at any point while playing the game? Please list them.

Response summary: Most of the comments addressed a misalignment between voiceover files and the game or missing voiceover files. The game also illustrated to one user how legal avenues for protection exist in Haiti; they were surprised rather than being confused, but entered this comment in this section of the survey.

Summary of Responses to Questions on Likelihood of Hypotheses Being Validated

Overwhelmingly, the response team agreed that the game encourages empathy for victims of abuse, helping to dispel the myths that cause some to justify abuse. They also agreed that the game provides empowering content which will help the participants to understand more about GBV, arming them with clarity on the scope of GBV.

A positive response was also received to the question of whether use of the game will help participants become more aware of available resources and organizations that can help them. Asked whether the game will reduce the likelihood of people making the victim feel ashamed and increase support by the community, a similarly supportive response was received, and everyone agreed.

In terms of game accessibility, feedback indicated uncertainty over whether participants would be capable of accessing the video game through Facebook or another social media

platform. However, in a subsequent question on how many clients use Facebook on a smartphone, it was determined that approximately 50% of clients of Share Hope and CPFO have Facebook on their phones. One participant said, “In 2020, almost everyone in the country will have access to a smartphone. From the age of 15 to 60, 80% of people in Haiti have a Facebook page and use it on a smartphone.” Other communication platforms used in Haiti are WhatsApp and Facebook, with regular text and Instagram trailing behind.

Responses (examples shown below) also underscored the importance of the cultural relevance of visual presentation and the alignment of language with the target audience.

Question: List any problems that should be addressed

Response summary: Game load time was noted as a problem for Haiti due to poor internet service and accessibility experienced there. The game is quite a large file because of the voiceover files. As a result of this feedback, some optimization measures were put in place to improve performance.

Animation was requested. Animation to the background images was completed, and animation of artwork was added to the priority list for future work upon receipt of funding.

This phase of feedback saw the discovery of a defect that prevented the ending part of the stories from displaying which caused the tester to be confused about how to proceed.

Question: What improvements should be made so the game can be made public?

Response summary: Technical improvements were suggested, such as adding a back button and increasing the game launch time and performance. Technical issues such as misalignment of voiceover files and further correction of typographical errors were raised. In

addition, the Share Hope team recommended corrections to questions in surveys intended for the garment factory worker audience, to prevent confusion. These updates were made before the next testing phase. Video game usage suggestions were also made via the Google Form survey for sharing the game via WhatsApp or other messaging applications, as well as rolling it out at the factories on a big screen.

Through Zoom conferences, interviews with the Share Hope team provided further useful commentary regarding language in the game prototype. Differences in the Creole language of the game text with standard Creole were noted. These differences may be attributed to generational differences in the writer and reviewer. While attitudinal and linguistic differences from French to Creole were discussed in the literature review, generational variances in use of Creole in Haiti present a new dimension to the somewhat simple linguistic considerations put in place for creation of the video game prototype.

There were some linguistic differences noted due to the age of the participants who had received formal instruction in Haitian Creole. In Haiti, many schools have historically taught in French, as many still do. Creole became the co-official language with French in 1987.¹⁸⁶ However, it was not until 2015 that a greater push to teach in the Creole language started in Haitian schools. Even among the summer interns who reviewed the video game prototype, there was some disagreement on the spelling or use of some words based on their region, which finally led to an agreement that we would adopt the Creole used in the metropolitan area as the benchmark variant in the game.

¹⁸⁶ M. Di Paolo, and A. K Spears, *Languages and Dialects in the US: Focus on Diversity and Linguistics*. Chapter 13, "Haitian Creole" (New York: Routledge, 2014).

While Google Form surveys are efficient for collecting feedback, it is evident that opportunities to interview participants in a conversational manner remain a more effective and revealing means by which to gather feedback.

UAT Phase 3: Video Game Feedback from CPFO

Feedback from CPFO was largely encouraging and positive. As an agency providing support to abuse victims and a well woman clinic, their feedback was critical. They found the game to be innovative, attractive, and a vehicle that encourages interaction and participation. They acknowledged that the content provides a lot of education on the topic of gender-based violence. They also appreciated that it reflected Haitian realities with easily understandable scenarios.

One observation to shape the next version of the video game was to bring more diversity to the voiceovers. Since the budget was limited, the same three people did the voiceover work for all characters. They suggested having different voices. They also recommended bringing more emotion into the voiceovers to express how the characters are feeling, saying that the voices were too monotonous or robotic. In addition, they commented that in some instances, voice tone did not match certain messages, implying that a practice is acceptable/normal when it is not and should be questioned or challenged.

In terms of content, their main observation was that going to police/government is rarely the first resort in Haitian culture. This option was prioritized in references in the game over other resolutions at times, so content of the game where this occurs was recommended to be revised. Because a reaction from the police or government is not often anticipated by Haitians to be favorable or helpful, one is more likely to see people approaching other leaders in the

community/area, i.e., pastors, elders, leader of the area (even a gang leader), community leaders, friends/family, and/or people with influence. The recommendation from the group was that for the game, prioritize other solutions that are more likely to be understood, appreciated, and adopted by garment factory workers.

Commentators also noted that there were some errors in the Creole. A future review prior to a new release will reveal whether these were oversights from the previous round of corrections or whether this is attributable to yet different expectations based on the regional linguistic nuances of Creole.

Functionality comments included the need to include voiceover for the story summary section at the end of the video game and the urgent requirement to include an Exit button to close the game on either an Android or Windows-based device.

On the testing process of the video game for garment factory workers, CPFO representatives commented that the surveys were long, and they would like to see a shorter survey for further testing by participants who may join through their programs in future phases of product evaluation.

As with each round of testing, changes were made to the prototype according to the recommendations from CPFO. Separate, shorter surveys were envisaged for any future testing with other CPFO clients.

Chapter VII

Results from Sample Population Testing

This chapter presents results from the sample population testing. Demographic data is given, followed by an evaluation of the four hypotheses against the testing.

Demographic Data of the Garment Factory Workers

Demographic data was acquired when the garment factory worker completed the survey prior to playing the video game prototype. There were two cohorts.

Cohort 1:

- 12 participants
- Ranged from 21 to 37 years old, with 7 under 30 years old, and 5 who were 30 or older.
- All were female.
- Only one was married, and the other 10 were single.
- All had some kind of schooling; six had gone to university, two had some form of professional training, and the remainder had finished high school.
- All participants' religious affiliation fit within Christianity.
- Their job status reflected current times; 7 were former factory employees who had been laid off due to the pandemic; 2 were supervisors in the factory; 1 was non-management. One declined to answer.

Cohort 2:

- 12 participants,

- majority of participants fit into the 25-34 age group, only two were younger than 25, and none were older than 34.
- Three identified as male, one did not respond to the gender question, and the remaining participants identified as female.
- 75% of participants were single, others were in a civil union, widowed, or other status.
- 83% of this group had a high school education.
- 92% were garment factory machine operators.
- Religious affiliation ranged within Christianity with no dominant affiliation. Two listed no religion.
- 67% lived with family; some lived with children, friends, or other.

Evaluating the Hypotheses Against the Results

Feedback from the garment factory workers' surveys were juxtaposed against the hypotheses which provided the basis for evaluating the prototype. Assessing the four hypotheses through this small sample of the target population provided insight on how well the game would be received with a wider target audience.

While the small sampling size means the results are only indicative of how subsequent versions of the video game may be perceived by garment factory workers, it was heartening to see the reaction was positive and feedback encouraging. In terms of the validation of the hypotheses, the following section reviews the feedback relative to the four hypotheses.

H-1: Video-Game Roleplay is Effective for GBV Prevention

In order to assess whether the video game is an effective vehicle for dispelling stereotypical patriarchal thoughts and awakening community empathy for victims, the pre-game survey was used to take a baseline of knowledge on GBV, as well as patriarchal stereotypes and community empathy factors. For this, both the IRI and DVMAS content was utilized.

While participants were not explicitly asked if they were a victim of GBV due to sensitivity constraints, it was important to gauge their experience and knowledge of the theme to evaluate the hypotheses. Only one of the Group 1 participants had attended prior training sessions with Share Hope or CPFO on Domestic Violence; one participant did not respond to this question. Eighty-three percent (10) of Group 1 participants stated that they knew someone who was a victim of domestic violence or rape. Eighty-three percent (10) said they knew of resources that could help victims of abuse, while only 58% (7) knew of laws that supported abuse victims.

A larger percentage of the second group, 33% (4), had received prior training on GBV. However, in this group, only 42% (5) knew a DV or rape victim, in contrast to the prior group in which 83% (10) knew a victim of either DV or rape. In this second group, only 50% (6) of participants knew of resources to help a DV or rape victim, prior to playing the game, and an even smaller percentage, 25% (3), knew of laws to protect someone suffering abuse, again, a contrast to the claimed knowledge levels of the prior group.

Question: What did you like best about the game?

Response summary: Some participants listed the character name of their preferred story with the most mentioned characters being Jozet, Mariwoz, Kawol, and Emilyya. Other participants listed qualities that they liked about the game, such as its clarity, or the advice that was given by the game master, the moral lessons, the method of exposing the GBV issues

through storytelling, or the courage of the women despite their circumstances. One participant appreciated the many ways in which the game encouraged her to reflect on her own reaction to GBV. Functionality comments included appreciation for being able to make choices in the game. One person listed a key favorite moment in the game from Magdala's story, in which the participant considered her to be smart and funny.

Question: What didn't you like about the game?

Response summary: Most of the participants listed a facet of how GBV manifested in the characters' lives as their dislike of the game, referencing the violence the characters experienced, the way men take precedence over women, or how the men seemed to enjoy committing violence. In reality, this may demonstrate how effective the storytelling was in drawing them in to the narrative. Some participants noted that there was nothing they disliked about the stories because the issues were not surprising, or because the stories were interesting. One participant just stated "Magdala" as something they disliked in the game, with no further detail, so perhaps the participant disliked the entire story, or potentially just something about Magdala's character did not sit well with the participant. Another participant noted that the male character in Emily's story was not convincing enough.

The number of participants in Group 2 who would recommend resources to an abuse victim seeking help was largely similar to the prior group, but with a notable increase in recommendations to seek help from the police at 75% (9) against the 50% (6) of the prior group.

Participants' perception of their behavior change as a result of playing the game:

Response summary: The majority of participants across both Group 1 and Group 2, or 83% (20), believed that their opinion on who should feel shame in abuse cases had changed as a result of playing the video game (see Figure 10). This may indicate that the game facilitates

greater empathy and understanding on the part of participants for the challenges a GBV victim faces.

Has your opinion changed about who should feel ashamed in cases of abuse?

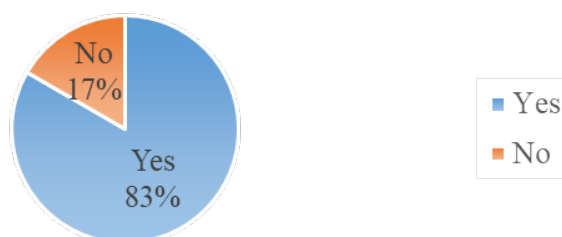


Figure 10. Perception of Victim Shame.

Participants' acceptance of GBV – would they report it?

Response summary: The majority of participants, or 79% (19) (see Figure 11), believed that playing the game positively impacted the likelihood that they would report GBV if it happened to them.

Did playing the game affect whether you would report GBV if it happened to you?

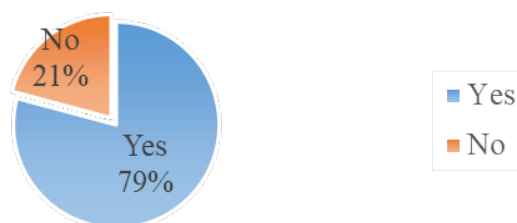


Figure 11. Likelihood of Reporting GBV.

Participants with Prior Exposure to GBV Training

Of the 24 garment factory workers who participated in the study, 5 had previously received training in GBV themes. Of those 5 women, 4 showed progress against prior DVMAS scores, indicating a reduced acceptance of GBV myths and patriarchal stereotypes. One participant had a notable increase in score. Investigating further, the same participant was also an outlier in a group of participants ages 26 and younger, in terms of an increased DVMAS score after playing the video game among others whose scores all reduced (i.e., less accepting of DV). Given that the evaluation was anonymous, follow up is difficult, but it would have been interesting to interview this participant to see if the results were skewed due to lack of comprehension or for some other reason. The participant also was an anomaly in that his/her IRI scores indicated placement at the highest empathy levels among the group of 5 participants who had previously participated in GBV training. This fact underscores an interpretation that they were of compromised empathy levels because of their DVMAS scores.

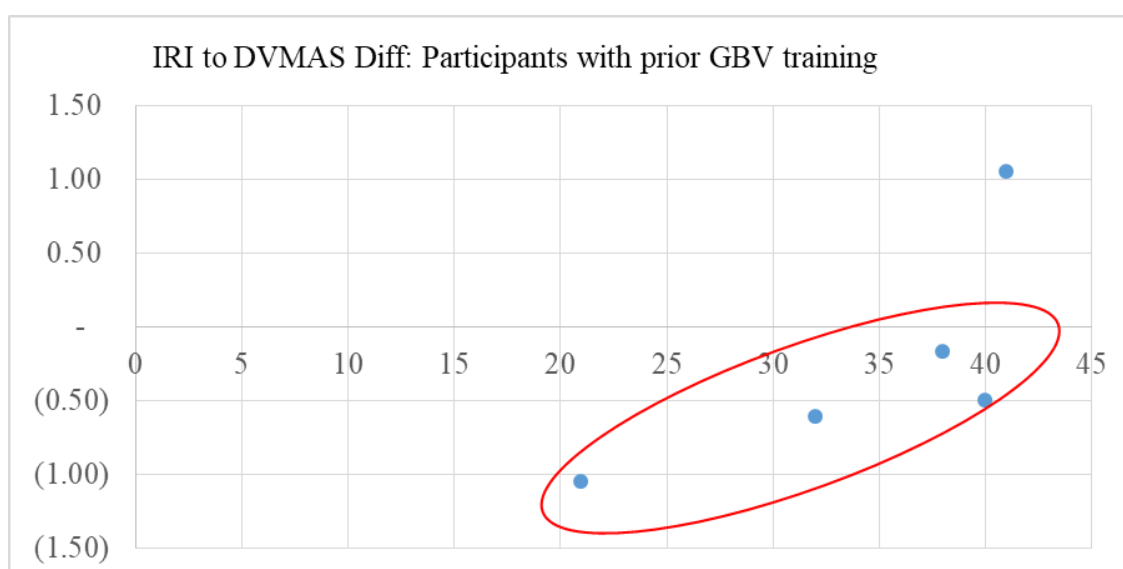


Figure 12. IRI to DVMAS Difference for Prior Participants of GBV Training.

H-2: Cultural Relevance in the Video Game is Important

Numerous studies and authors highlighted in the literature review emphasized the importance of cultural relevance in the game. This impacted design decisions such as visuals, linguistics, attention to content, and even on which technology platform to make the prototype available. The surveys and interviews were quite revealing in support of this hypothesis.

In considering whether it was the right decision to focus on creating the prototype in Haitian Creole instead of French, it was surprising to learn that 86% of participants speak French. The expectation was that few would speak French well enough to appreciate the meaning of the game as intended if it were provided in French. The survey question would have preferably been worded to find out which participants felt as if French was their mother tongue or to discover their level of comfort with it. Fourteen percent speak French or English, with only 7% speaking Spanish.

The interviews were helpful in uncovering just how important the voiceovers are to comprehension of the game. Both interviewees were emphatic about the audio being beneficial. Needing a voiceover for something provided in the mother tongue suggests that the game would have been less effective in another language, given the literacy challenge in the mother tongue.

Responses to questions on the relevance of the game to Haitian life were very insightful. Participants agreed that the game characters' challenges and stories were relevant to Haiti. A large number agreed that it was important to them that the game was relevant to Haitian culture. Table 10 summarizes these findings.

Table 10. Responses to Questions on Relevance of the Game to Haitian Life.

	Didn't agree at all	Didn't agree	Neutral	Agree	Strongly Agree
Are the game characters' challenges relevant to Haiti?	0% (0)	4% (1)	0% (0)	33% (8)	63% (15)
Are stories relevant to Haitian garment factory workers?	4% (1)	8% (2)	0% (0)	33% (8)	54% (13)
Was it important to you that the game was relevant to Haitian life?	0% (0)	8% (2)	8% (2)	29% (7)	54% (13)

H-3: A Video Game Will Be an Effective Tool for the Audience

Considerations when evaluating Hypothesis 3— that a narrative-based video game could be effective for this audience to learn about GBV, despite literacy challenges —included consideration of the importance of the voiceover included in the game. In addition, considerations about how well the participants navigated the game and their game-playing behavior were insightful to this evaluation.

Question: Was it important for you that the game has audio?

Response summary: For the first group of factory worker participants, this question was posted in the survey as “how would you respond if the game didn't have audio?” Responses varied across the range from positive to negative, showing obvious confusion over how to respond to the question, with the largest percentage (40%) of participants sitting on the fence. This question was rephrased to “Was it important for you that the game has audio?”, prior to the second group of participants answering the survey. Of the second group of participants, support was widespread for the importance of the voiceover feature in the game; 50% strongly agreed that audio was important, 37.5% agreed that audio was important, and only 12.5% were undecided.

Reflections on Participant Character Selection Behavior

Analyzing the behavior of the participants was enlightening. They were asked which character they played first (see Figure 13). Emilyya (selected first by 25% of participants) and Magdala (21%) were first and second in the vertical sequencing of characters on the character choice menu. The next two characters who were chosen first were Anita (13%) and Andrel (13%). The next two characters who were chosen first were Anita (13%) and Andrel (13%). This may indicate that some chose characters' stories taking a top-down strategy, while others may have identified with the characters and their stories even from the brief introduction section at the beginning of the game, prior to arriving at the character choice menu in the game prototype. It is also possible that they selected the character's story by their looks, clothing, or for another reason.

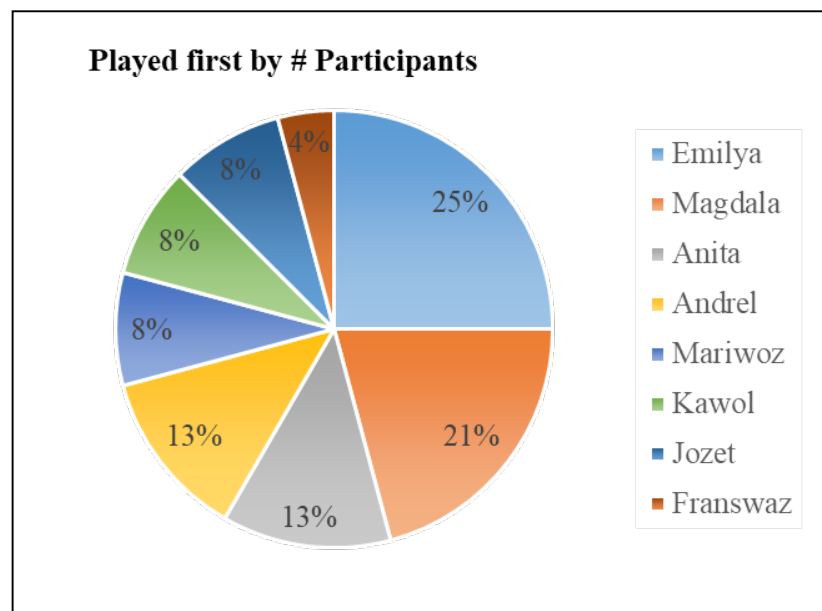


Figure 13. Characters' Stories Played First.

Literacy may have played a part in the amount of time taken to play the game, since participants typically played only one and three stories with an average of 1.7 across all groups (see Figure 13). It is likely that the time was underestimated. Participants were requested to commit to play the game for approximately one hour, with the expectation that playing the entire game was possible in that timeframe. However, it was evident that the length of time it took them to play each character story did not deter the participants from wanting to replay or play other stories. Their responses to the question of which stories they wanted to play or replay indicated they would follow up or revisit as many as five additional stories if given the opportunity. Kawol was the most played story, but Emilyya and Anita's stories were the ones participants most wanted to replay (see Table 11).

There could be several reasons for wanting to replay a game:

- for pure enjoyment of the story
- the participants learned something specific in the game and wanted to solidify their understanding of the information, concept, or way of thinking.
- one participant wanted to return to some dialogue in one of the stories she played but did not realize there was a BACK button.
- it is also possible that some of the rationale for wanting to replay a character's story may be due to the participant progressing too quickly through the game and later realizing that they wanted to revisit some content. While this response was the case with only one participant, it suggests that the functionality of the game should be kept fairly simple.
- better access could be given to the existing video tutorial explaining the features, or even further simplification of the features could be worth consideration for this population.

- Participants were asked if they experienced any confusion while playing the game. Only one participant answered in the affirmative.

Table 11. Character Stories Played.

Character Story	# Played by Participants	# Participants Wanted to Replay
Kawol	7	5
Emilya	6	7
Magdala	6	3
Anita	5	7
Jozet	5	2
Franswaz	4	3
Andrel	3	4
Mariwoz	3	5

H-4: Technology and Social Media Progress in Haiti Will Facilitate Video Game Adoption

Suitability and available of current telephone hardware was an important aspect of assessing the scalability potential and was included in the surveys. Everyone in the Group 1 who participated in the study owned an Android smartphone, which supported the assumptions made in a small data sample that creating the game solely for Android mobile phones would reach the majority of potential users. Most of the participants accessed the internet from their phones, but only 5 had internet access at home, and just one had it at work. Among Group 2, only 58% (7) had a smart phone: most owned an Android, one owned an Apple iPhone. A higher percentage than expected, 42% (5), did not own any smart phone. Only 25% (3) access the internet via a plan at home, with 67% (8) only having internet access from their phone.

In considering scalability of user adoption for the end product, messaging habits were analyzed (see Table 12). Of both groups of participants, 92% (22) of participants reported using WhatsApp, the dominant social media platform in Haiti. Less popular were Facebook, email, and

Instagram. Snapchat was used by only four participants. When asked which social media platform participants would use to communicate about the video game, WhatsApp dominated again. The following social media platforms represent potential avenues for communicating the game upon product release.

Table 12. Communication Methods for Game Sharing.

Communication Method	% of Participants Who Would Share the Game via This Method
WhatsApp	100%
Facebook	54%
Instagram	25%
Snapchat	4%
Email	17%
Skype	8%
Text	17%
Other	4%

Summary

Responses from the participants' surveys were cross-referenced with the hypotheses by a process of evaluation. A total of 63 questions were asked in the pre-game survey and 41 questions were asked in the post-game survey. The questions investigating the hypotheses are reflected in Table 13, below.

Table 13. Number of Questions Addressing Each Hypothesis.

	Survey	
	Pre-Game	Post-Game
Demographics	8	0
H-1	4	16
H-2	1	12
H-3	5	13
H-4	3	4
Game Design Feedback	0	23
Total	21	68

Table 14. Analysis and Summary of Hypotheses.

Hypothesis	Analysis
H-1: Role-playing stories (storytelling) of a domestic violence victim in a video game is an effective way to dispel stereotypical thoughts and arouse community empathy for victims.	The reactions from the participants evidenced a powerful emotional reaction to the stories. The narrative immersed the participants in the characters' experiences so effectively that when asked what they didn't like about the game, the majority of responses were related to objections about the situations of abuse that the characters were experiencing rather than actual complaints about the game or the stories.
H-2: Cultural relevance in the video game is important.	For a vast majority, results indicated they agreed that the game was culturally relevant, and 83% confirmed that it was important to them that it was culturally relevant.
H-3: Using a narrative-based video game to learn about the scope of GBV and available resources will be effective for the audience, despite literacy challenges.	The video game had audio which facilitated the use of the game despite literacy challenges. It was confirmed by the participants that the audio feature was important to them. The interviewees further confirmed how helpful the voiceovers were to their comprehension of the game content. The participants learned more about GBV and available resources. A majority (96%) confirmed they they felt the game was useful in helping them to learn about violence against women.
H-4: Scalability: Recent technology progress and social media uptake in Haiti will facilitate scalable access to the video game.	While a large percentage of participants had Android phones as expected, there was a surprising number who had non-smart phones. Results on cellphone ownership are indicative only; the cell phone ownership of the garment factory workers who participated in the study may not be representative of the general garment factory worker population, nor the general population in Haiti. In their responses to the post-study surveys and the interviews, participants showed a willingness, capability, and interest in sharing the game via various technical methods, with WhatsApp dominating, suggesting that there is potential for scalability of the end product.

IRI and DVMAS Data Analysis Results

The DVMAS was taken by participants before and after playing the game prototype. Average scores were calculated by individual participant and by group, for both the first survey and the second survey, then the difference from one survey to the next was calculated as a percentage change. A lower score, and therefore a negative percentage change in the before and after surveys, reflects less acceptance of myths and stereotypes related to GBV, so it was a positive outcome. Conversely, a higher score in the second survey compared to the first survey indicates greater acceptance of GBV-related myths and stereotypes and was not an expected outcome.

The DVMAS difference mean scores for the group (see Table 15) were elevated in comparison with DVMAS scores experienced in the French study of the DVMAS. In the French study, women scored a mean of 2.62.¹⁸⁷

Table 15. DMVAS Difference Scores by Group.

Group #	DVMAS Diff Total
Group 1	(1.33)
Group 2	(3.73)

The total DVMAS mean calculated for the garment factory workers prior to playing the game was 4.12. After playing the game prototype, the group mean was 3.91, or lower by 5%. Results show that while 16 participants had a lower average DVMAS score after playing the game, 2 were unchanged, and 7 participants had a greater average DVMAS score after playing the game. In brainstorming why an increase in results could have occurred with some

¹⁸⁷ Gilet, et al., "Assessing dispositional empathy in adults," 42-48.

participants, Share Hope team members and HELP interns provided the following culturally relevant insights. Some participants may not have understood the DVMAS questions. Some may not have understood the nuances of the rather similar questions. Thus, they may have responded somewhat randomly.

After the first group of participants provided some feedback, we realized that the garment factory workers may have had little exposure to such surveys and scale-based responses prior to this study and would have been more comfortable with simple binary survey response options. Before the second group of garment factory workers were invited to participate in the surveys and play the game, the Share Hope team assisted with an enhancement of the survey format to include improved descriptions of how to answer using the Likert scale, including a description of each of the five or seven options, depending on whether it was the IRI or the DVMAS. The DVMAS total difference scores for the second group were elevated at 3.73 compared to the first group's total difference across the group at 1.33, suggesting that the second group either benefited more from the game or had a greater understanding of how to take the quantitative, scale sections of the survey for the DMVAS.

Data from the IRI were calculated based on summing EC and PT scores for each participant (see Table 16) and calculating the average for each group. A maximum score of 56 is attainable using this scoring model. In comparing Group 1 against Group 2 for the IRI data, the findings suggest that Group 2 is marginally less empathic overall than Group 1. However, there were some outliers in the data of Group 2 which impacted that result, as seen in the bubble figure below (see Figure 14).

Table 16. IRI Average by Group

Group #	IRI Average
Group 1	38
Group 2	37



Figure 14. Group IRI Results.

Although the survey questions were translated into Creole, no voiceovers were provided for the surveys, so the content or volume of the questions may have presented challenges given the participants' literacy levels. Pandemic-related constraints prevented more interaction in delivering the surveys in order to gain a more balanced view of usage of the surveys. It may be more effective another time to provide enhanced support during the survey-taking process.

There was a contrast in the scores by participant age (see Table 17). The average difference in before and after scores for those 26 and under, except for 2 outliers, was 0.59 for those older than 26, and the average difference between the before and after scores on the

DVMAS was 0.16. Two outliers, ages 22 and 24 years old, had an average DVMAS difference of +0.69.

Table 17. DVMAS Difference by Age Group.

Age	DVMAS Diff
<=26	(0.59)*
>26	(0.16)

*Excludes the two outliers at +0.33 and +1.06.

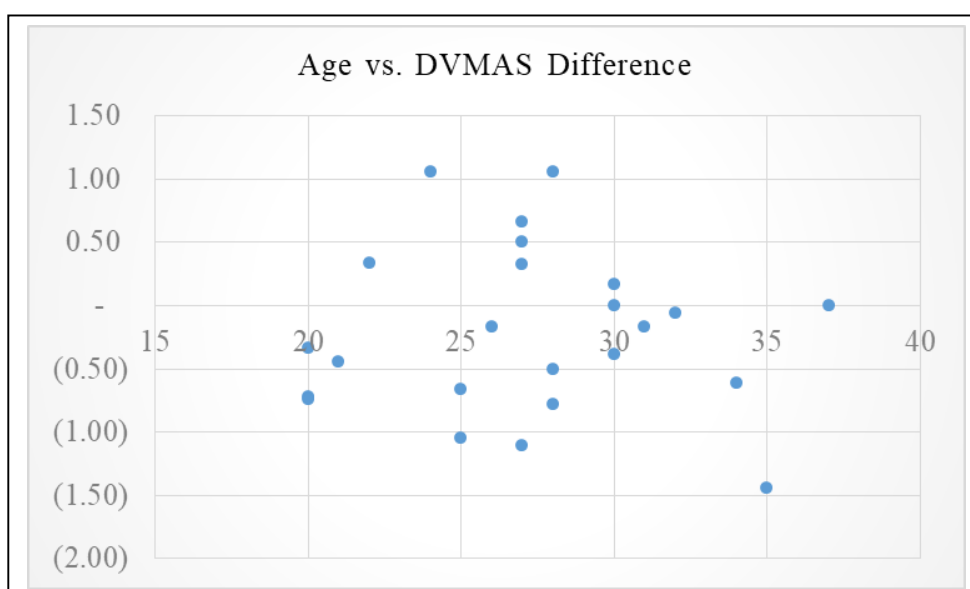


Figure 15. Age vs. DVMAS Difference.

On review of the two outliers, the participant with the larger positive difference showed an increase in DMVAS score for 8 of the 18 questions. The responses to all other questions were lower in the post-game survey for that participant. Although further research into the details of the DVMAS did not fit into the scope of use of this tool for the formative evaluation, it would have been interesting to see if the elevated scores were localized to any particular part of the

DVMAS, which is divided into four factors: minimization of the abuse, exoneration of the perpetrator, behavior blame, and character blame.

Separating the DVMAS data by group with a bubble chart showed some outliers in Group 1, with more concentration seen in results from Group 2 toward a reduction in DVMAS scores (see Figure 16).

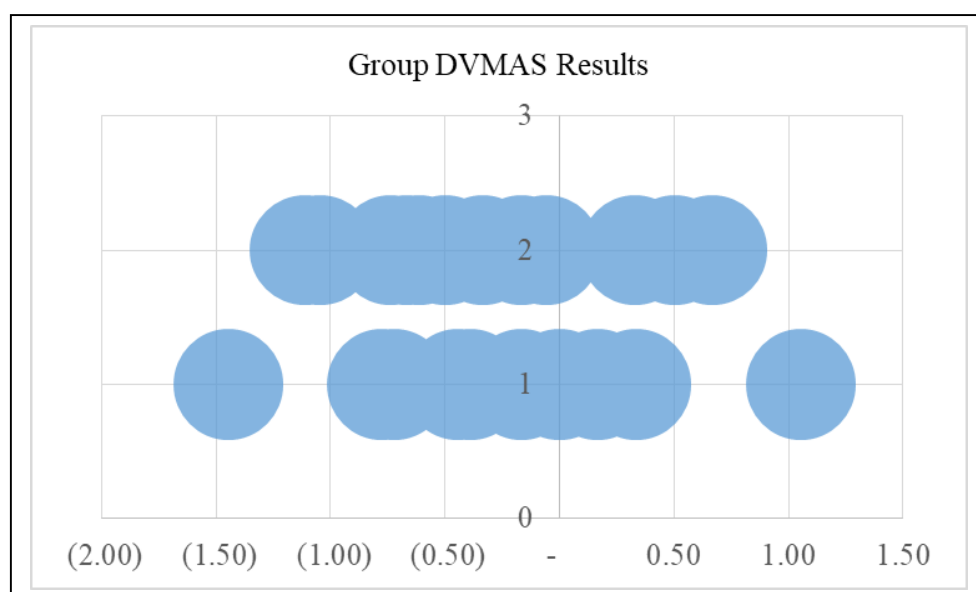


Figure 16. Group DVMAS Results.

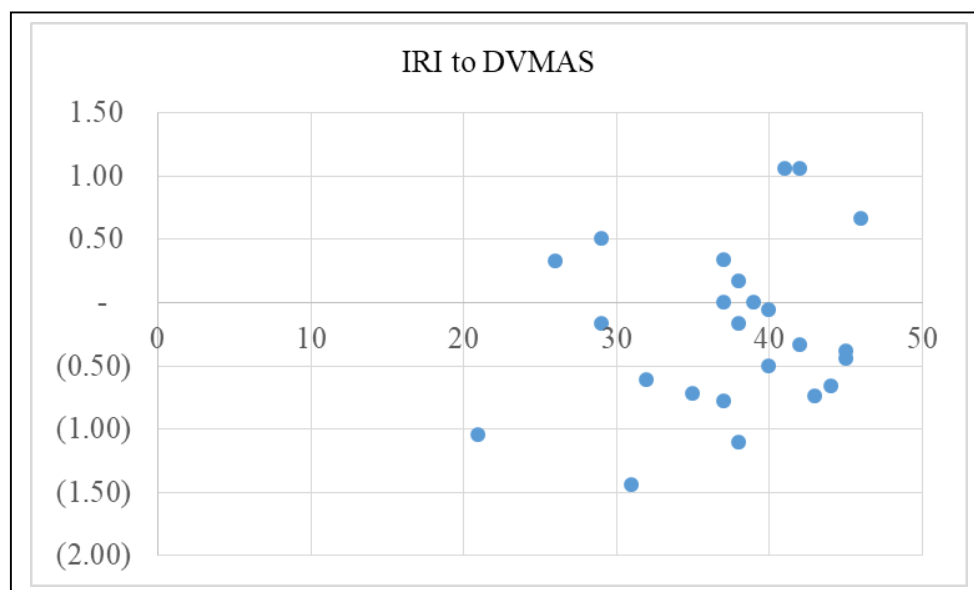


Figure 17. IRI to DVMAS difference

Interviews with Garment Factory Workers

Interviews were held with two garment factory workers approximately one month after they had participated in the activity. These interviews were held via three-way video conferencing with a representative from Share Hope translating between English and Creole. The transcripts of the interviews are in the appendices.

While the data provided through the surveys were useful, insights obtained from the interviews were particularly valuable, not to mention heartwarming. The response from both workers who participated in the interviews was very positive. Each said they felt they had learned a lot about GBV from playing the video game prototype. Each thanked the author for producing the prototype, and both interviewees were enthusiastic about this new way of learning about GBV and were keen to deepen their knowledge on the theme, particularly in this engaging

manner. They were very interested in playing the other character stories that they did not have an opportunity to play.

One participant confirmed that she had already spoken about the game with her circle of friends, and there were people who were curious to play it. She had not mentioned it to any male friends, but her female friends mostly acted in an eager manner. She wanted to know how it could be accessible to them. She was particularly happy to hear of the idea of availability via social media. One even suggested providing a link via a promotional video on YouTube. Both interviewees suggested that WhatsApp was the optimal method for sharing the game in Haiti. One participant also confirmed that a similar game would be very beneficial for children in Haiti.

Neither found the game to be confusing, despite not having played a video game before, suggesting that the simple design and navigation structure of the game worked well for this audience. The voiceover was acknowledged by both to be an important feature of the game, providing reinforcement of the content. One participant said, “I really liked the voiceover because when you hear someone’s voice talking about something and the inflection of their voice, it helps understanding better than just reading a text or looking at images.”

Recommendations from Interviewees

Some useful recommendations were also provided. One interviewee commented that the game should have a way of going back if the user saw or heard something a character had said, then wanted to listen again. This functionality does already exist in the game, which indicates that improved introductory materials explaining the video game menu options would be beneficial for further evaluation of the game.

Another interviewee remarked that the game presented some options or choices for progression of the story line with which she did not agree. Options in the game prototype vary from choices that would be positive to options that would not be recommended, but are used as an opportunity for Sofi, the game master, to provide practical instruction on why another selection would have been preferable. It was not explained to the participants in any accompanying materials that negative and positive choices would be available, so given the limited amount of time the participant may have had to play the game, they may not have explored the negative responses and seen the consequences.

In general, the input from the interviews encouraged clarification of complementary instructional materials to better explain how to use the game. In addition, the positive feedback from the interviewees confirmed that the concept of the game works for this population. The response from the sample population reinforced the understanding of demand for the product and the need to finalize the video game to be suitable for wider dissemination in Haiti.

Chapter VIII

Discussion and Recommendations

This thesis describes the development and design of a prototype video game that teaches about domestic violence, with specific focus on a version for Haitian garment factory workers. The literature review explored themes of importance to consider when creating the prototype, and then describes the resulting prototype. The chapter on methodology explores the use of both self-created and adapted versions of tested and established surveys to validate four hypotheses focused on the impact of the video game. Finally, the prototype evaluation collected feedback by screening with a proxy group of testers, and also with focus groups of professionals, prior to trying out the prototype with the target groups of Haitian garment factory workers.

The video game prototype aims to teach players how to spot the warning signs of unhealthy relationships through narrative, providing information on support resources and encouraging behaviors of empathy toward those who may be experiencing unhealthy relationships. Citing research that showed games are an effective method of conveying instruction on empathy,¹⁸⁸ this prototype game was designed to encourage community-based empathetic responses to gender-based violence.

Key performance indicators were used to evaluate four hypotheses through surveys. The surveys contained questions composed by the author which were created to test the hypotheses. They also included recognized surveys to test empathy and GBV myth acceptance, which were

¹⁸⁸ M. Farber, and K. Schrier, “The Limits and Strengths of Using Digital Games as “Empathy Machines,” UNESCO/Mahatma Gandhi Institute of Education for Peace and Sustainable Development, 2017. Available from https://s3-us-west-2.amazonaws.com/lms-chi/pdfs/JWCXudtfuH665AE93_working-paper-5.pdf.

adapted linguistically and culturally for this exercise. The data gathering and analysis was conducted remotely using Google Forms, and the game was played on Windows and Android devices.

Feedback from the screening phase of the formative evaluation led to iterations of the prototype that enhanced the game in the areas of more precise usage of the Haitian language, game launch and performance, the inclusion of additional features such as a Back and Exit buttons, and some revisions to content of both the game and the wording of questions in the accompanying surveys. Feedback was assessed by level of priority, and amendments were incorporated into the game prototype largely before the next session of testing occurred, unless it was determined to be an unnecessary enhancement.

Results from the target group, the garment factory workers, evidenced support of the hypotheses that a narrative video game can influence the patriarchal mindsets and level of acceptance of GBV myths that the players had prior to the game as well as an increase in the mindset of providing community support to an abuse victim. In addition, the results from the target group indicated that the participants agreed with the importance of cultural appropriateness of the game and appreciated how it reflected challenges seen in their reality. Feedback suggested that the prototype facilitated the learning of resources available to support GBV victims. Finally, this formative evaluation presented an opportunity to gain insight into how a video game could fit into the current technology landscape of Haiti with the growing adoption of Android smartphones presenting an audience that was previously unreachable.

Response to the video game prototype by the sample target population was positive. However, their feedback provided valuable insight into recommendations for further development work on the prototype and the process for validation of the hypotheses. Content of

the game was refined throughout the phases of the formative evaluation, but it could be further refined as additional feedback is received. Some glitches in performance and download issues give insight into the importance of application size as a critical consideration for lower-end mobile phones. Expecting participants to download a video game in a country where internet access is limited may be unreasonable. However, providing an internet hotspot to allow easy video game download for participants would give greater chance of adoption. Because of the necessary inclusion of voiceovers in the prototype to accommodate use by less-literate participants, the prototype file was rather large. Iterative optimization exercises throughout the phases of the formative evaluation surmounted this issue. Nonetheless, it will be necessary to remain cognizant of the need to further optimize future versions if possible, as to ensure reduced file size and best load performance.

Aggregation of the surveys via electronic means using Google Forms proved largely successful, despite literacy concerns. The method of gathering data by this means provided significant data with which to analyze the hypotheses. Using the hybrid strategy of employing self-created questions with the IRI and DVMAS, surveys gave a broad dataset to inform the formative evaluation. While inclusion of the IRI and DVMAS was informal, and their use exploratory, it bolstered the testing framework. To counteract misunderstandings of the meaning of questions, a future iteration of formative evaluation phases of the prototype could consider providing voiceover to the surveys to provide greater clarity for the participant, or organizing focus groups for such participants, online or otherwise.

During the course of this thesis research, the global COVID-19 pandemic emerged. Global statistics from France to South Africa show that the stress and constraints of sheltering in place, the loss of jobs, and other factors related to the Covid pandemic are exacerbating the rates

of domestic violence and associated mortalities. Any NGO considering their approach to tackling GBV in Haiti in the new era of Covid will now need to consider social distancing and likely prolonged travel restrictions as part of its strategy.

It is clear that a generation of youngsters who were previously likely to witness or be victims of domestic violence are now all the more likely to be traumatized through the associated confinement necessitated by the Covid pandemic. Equipping the population with the knowledge and skills to empower themselves against abuse, as part of the planning for anticipated higher incidents of GBV that have occurred with other natural disasters, should be part of the equation.¹⁸⁹

Given a world that is increasingly adopting technology solutions due to the pandemic's enforced requirements for social distancing, furthering the awareness of GBV using technology merits investigation. The welcoming response to the prototype from the sample population of Haitian garment factory workers, and robust demand from Haitian youth organizations for a similar product, indicates significant potential opportunity to effect social change through video game technology in Haiti.

The findings from this analysis and evaluation provide a basis on which to continue refining the video game prototype for Haiti. Those findings may also contribute to future analyses of GBV prevention and response efforts through video game learning in the wider international community. I hope this study will encourage the viability of using such a culturally appropriate video game in other English and non-English-speaking countries, regardless of income level.

¹⁸⁹ E. Sloand, et al, "Barriers and facilitators to engaging communities in gender-based violence prevention following a natural disaster," *Journal of Health Care For the Poor and Underserved*, 26, no. 4 (2015): 1377-90. doi:10.1353/hpu.2015.0133.

Recommendations for Future Research

This initial video game prototype design indicates some value to educational video game tools in changing cultural norms. The strategic goals after this initial Haitian study are to continue to refine the design of the tool on the basis of further iterations of formative evaluation, invite feedback from additional professionals who have already been engaged, and eventually, to make the tool freely available in Haiti for use by whomever will derive benefits.¹⁹⁰

Considerations for furthering this work in Haiti would require input from additional experts in the GBV field such as Beyond Borders,¹⁹¹ along with feedback from experts in gaming for empathy. It would also benefit from a randomized controlled trial with a larger group of participants to see if analysis of a larger data set yields any different results.

Finally, it is noted that adding animation and an Exit button (as requested in feedback during this study) resulted in increasing the size of the prototype to such an extent that some of the interns' phones were no longer able to get the game working. It would be advisable to secure investment in order to achieve a final version that is light enough to be readily downloaded on what are normally lower-end Android devices with reduced capacity.

Future work should look at effectiveness for the deaf community within the garment factory sector, assuming they have sufficient literacy levels. The prototype's conception as an electronic instructional game is especially critical for this particularly vulnerable group of

¹⁹⁰ Commercialization of the product was not explored in this evaluation. It was a self-funded project executed with the kind, voluntary input of Share Hope and CPFO. While it may be possible to commercialize it through promotion to NGOs as a supplement or as the basis of their GBV prevention programs, this was not the focus of this project. Alternatively, adoption of the project as part of a bank or other financial institution's corporate social responsibility initiative, which incorporates introduction to financial autonomy, a critical facet to safety from GBV, could be a method of commercialization. There should not be expectations of participants in a developing country paying for the product, although that may be realistic for versions in other nations.

¹⁹¹ <https://beyondborders.net>

people. It may facilitate their access to interactive information ordinarily unavailable to them,¹⁹² assuming they have the necessary literacy skills to digest the game content without voiceover support.

In addition, as part of a global video game ecosystem to combat domestic violence as envisioned by the author, there could be potential for investigating the implementation within the video game of a multilingual AI chatbot as referenced in recent research by Vanjani et al. in 2019.¹⁹³ Such a feature embedded within a video game could provide counseling and guidance to a game player that is pertinent to the theme of DV or rape myth-acceptance. Such a functionality could be programmed to identify when human intervention is needed to aid the participant. AI used in the game could also nimbly adapt the content and questions in response to the user's personal responses, choices in the game, or behavior.

As an established eco-system, participant data on domestic violence driven from the use of the video games could be used to shape public policy and legislation to further empower and protect those who are or who may become domestic violence victims. Let's dare to dream!

Research Limitations

The completion of the Haitian Creole prototype version of the video game, was realized in collaboration with Share Hope Foundation and CPFO.

¹⁹² M. Abbasi, S. Eslami, M. Mohammadi, and R. Khajouei, "The pedagogical effect of a health education application for deaf and hard of hearing students in elementary schools," *Electronic Physician*, 9, no. 9 (2017): 5199-5205. Available from: DOI: <http://dx.doi.org/10.19082/5199>. See also: M. Maiorana-Basas, and C. M. Pagliaro, "Technology use among adults who are deaf and hard of hearing: A national survey," *Journal of Deaf Studies and Deaf Education*, 19, no. 3 (2014): 400-410. Available from <https://doi.org/10.1093/deafed/enu005>.

¹⁹³ M. Vanjani, M. Aiken, and M. Park, "Chatbots for multilingual conversations." Available from http://www.ibii-us.org/Journals/JMSBI/V4N1/Publish/V4N1_3.pdf. Accessed 08/16/2020.

There are significant external limitations for which I must account. These limitations fall in four categories: (1) my knowledge of Haitian Creole is limited; (2) running a study during a pandemic can introduce unexpected variables; (3) conducting research from a distance (while considering the restrictions imposed by a pandemic) can introduce complexities; and (4) doing such work in Haiti often results in some tendency for participants to respond in what they may consider to be socially desirable ways. Consideration of these four factors may influence results.

Haitian Creole is the preferred language of the country, and it was used for recordkeeping and data gathered and maintained for this study. My written and verbal knowledge of Haitian Creole are somewhat basic, although they significantly improved thanks to this experience. Fortunately, I had a number of willing and capable translators. Content and preliminary testing rounds of the video game were done with bilingual counterparties, and the surveys (as well as other written material) were created with the assistance of my team of Creole speakers to mitigate my limitation in this area. This limitation, however, paled in significance when compared to attempting to run a study remotely during a global pandemic.

Limitations and rules due to the coronavirus pandemic, combined with political instability in Haiti, contributed some challenges to completion. In order to pull this project over the finish line, I gratefully received help from people withstanding the daily oscillations of life in a country wracked by political protests, strife, shootings, hurricanes, business closures, layoffs, and even the kidnapping of a family member of one counterpart who was, thankfully, returned.

The accomplishment of arriving at the finish line of a major project that endured these significant challenges is all the more delicious.

APPENDIX 1

Sample of Defect Tracking Spreadsheet

Issue Number	Name	Form	Game section	Comment type	Issue Summary	Detail	Proposed Solution
1	Schmide	Web version	Mariwoz	Creole	Formulation issue	Text: M te konn travay kay madanm kom kizinyè.	Change "kay madanm" into "lakay moun"
2	Schmide	Web version	Magdala	Creole	Formulation issue	Text: M te konn fè konmès	Change "konmès" into "komès"
3	Schmide	Web version	Emilya	Creole	Formulation issue	Text: Li konn aji sou siyal la	Change "siyal" into "sinyal"
4	Schmide	Web version	Introduction	Voiceover	Voiceover doesn't match the script	Text Jwè a: Se yon bagay ki mechan menm paske Klotè pa vle ou	Change "ere" into "vanse" and put out "menm"
5	Schmide	Web version	Emilya	Voiceover	Advice at the end of the game with a character runs	Text Sofi: Wi, aksyon Klotè yo parèt ou jan egoyis.	Record voiceover file for those advice
6	Schmide	Web version	Emilya	Voiceover	Voiceover doesn't match the script Do you remembe	Text Sofi: Oganize vi li pou jwenn pi bon travay.	Change "ou" into "yon"
7	Schmide	Web version	Emilya	Voiceover	Voiceover doesn't match the script Do you remembe	Text Jwè a: Ba Klotè ou tan avan ou kitel	Add "yon" after "jwenn"
8	Schmide	Web version	Emilya	Voiceover	Voiceover doesn't match the script Do you remembe	Text Sofi: Oganize vi li pou jwenn pi bon travay.	Change "ou" into "yon"
9	Schmide	Web version	Emilya	Voiceover	Voiceover totally don't match the script of Sofi in Em	Text it is now: Moun tankou Klotè pa fasil koute moun. Yo gen lidè	What it should be to match the voiceover: Emilya pran
10	Schmide	Web version	Magdala	Voiceover	Missing a voiceover file	Text: Se sit mwen te entere sèl pitit fi m ki te mouri tifoyid.	Add "ak" after "mouri"; Change "entere" into "antere"
11	Schmide	Web version	Magdala	Creole	Formulation issue in Sofi advice	Text: Gen òganizasyon fanm ki ka ede w nan sitirasyon sa.	Change the word "sitirasyon" into "sityasyon"
12	Schmide	Web version	Magdala	Creole	Formulation issue in Jwè a advice	Text: Ou pa ka rete kache touttan, sa w ap fè?	Change "touttan" into "toutan"
13	Schmide	Web version	Magdala	Creole	Formulation issue in Sofi advice	Text: Sitirasyon Magdala pa fasil.	Change "sitirasyon" into "sityasyon"
14	Schmide	Web version	Magdala	Voiceover	Problem in match of character and script	Text of jwè a: Malgre Soval lage sou watsap kèk foto lè w ap fè g	The script should be for Magdala and we need to chan
15	Schmide	Web version	Magdala	Creole	Error in the text	Text: Yo pito pe.	Change "pe" into "pè" to match the script with the voi
16	Schmide	Web version	Magdala	Creole	Error in Jwè a script	Text: Avanse non Magdala. Ann ale bò recho a si ou vle, wa santi	The script should be: "Avanse non Magdala. Ann al bò
17	Schmide	Web version	Magdala	Creole	Error in Jwè a script	Text: Ou te dwe pote plent kont Soval si li fè kadejak sou ou.	The script should be: "Ou te dwe pote plent kont Soval
18	Schmide	Web version	Magdala	Creole	Formulation issue with Sofi advice	Text: M bije rantr nan pawòl sa a.	Change "bije" into "blije"
19	Schmide	Web version	Magdala	Creole	Formulation issue	Text: Dlo soti nan je m tèlman te vekse.	Add the word "m" after the word "tèlman"
20	Jeffnie	Web version	Introduction	Voiceover	Voiceover file missing	No voiceover for the first four phrases of the introduction.	Record these voiceover files
21	Jeffnie	Web version	Introduction	Voiceover	Voiceover doesn't match the script	Text: Yon konvèsasyon komanse tabli ant machann nan	Change "nan" into "yo"
22	Jeffnie	Web version	Emilya	Voiceover	Voiceover doesn't match the script	Text jwè: Eske ou eksplike l sa tou?	Change "sa tou" into "tou sa"
23	Jeffnie	Web version	Other	Functionality	Problem in reading	Not enough time to read the advice part at the end of Emilya's story	Add 5 more seconds so the player can read it
24	Jeffnie	Web version	Emilya	Voiceover	Voiceover doesn't match the script	Text Emilya: Apre sa lè m repale de sa	Change "repale l de sa" into "raple l de sa"
25	Jeffnie	Web version	Emilya	Voiceover	Voiceover doesn't match the script	Text Emilya: Si mwen rete avèk Klotè mwen pa janm gen chans a	Add "p" to "pa". Mwen "pap" janm gen chans ansent.
26	Jeffnie	Web version	Magdala	Voiceover	Voiceover doesn't match the script	Text Magdala: wa santi chalè	Add "yon ti" after "wa santi"
27	Jeffnie	Web version	Emilya	Creole	Formulation issue in Emilya's story	Text Emilya: Mwen te deja te komans sere lajan	Write instead: "Mwen te deja koumanse sere lajan"
28	Schmide	Web version	Magdala	Typo	Error in the name of Soval in Sofi's advice	Text: Menm si Sauval ta itilize telefòn nan pou l rele, lapolis ka m	Change "Sauval" into "Soval"
29	Schmide	Web version	Magdala	Creole	Formulation issue in Magdala's story	Word in the script: Sitirasyon	Change all "sitirasyon" into "sityasyon"
30	Schmide	Web version	Franswaz	Voiceover	Voiceover doesn't match the script	Text: M pa kwè ou te di ou gen yon jènòm ki nan inivèsite.	What it should be: "M te kwè ou te di ou gen yon jènò
31	Schmide	Web version	Franswaz	Creole	Formulation issue in Franswaz script	Text: M bije tout tan nan chire pit ak pwòp piti mwen.	Change "bije" into "blije"
32	Schmide	Web version	Franswaz	Voiceover	Error in the word "konsènen" in Franswaz script	Text: Se vre, yo konsènen tou.	Change "konsènen" into "konsène" to match it to the \

APPENDIX 2

Garment Factory Worker Participant Data Tables

Demographics

Characteristic	Group 1		Group 2	
	Number	%	Number	%
Gender				
Female	12	100%	8	67%
Male		0%	3	25%
No Response		0%	1	8%
Age (in years)				
Under 25	4	33%	2	17%
25-34	6	50%	10	83%
35-44	2	17%	0	
No Response	0	0%	0	
Level of Education				
High School	3	25%	10	83%
Professional	3	25%	1	8%
University	6	50%	0	
No Response	0	0%	1	8%
Job Status				
Previously garment factory worker	8	67%	0	0%
Operator	0	0%	11	92%
Management	1	8%	0	0%
Supervisor	1	8%	0	0%
Non-management	1	8%	1	8%
No Response	1	8%	0	0%
Religion				
Adventist	1	8%	1	8%
Baptist	2	17%	2	17%
Catholic	2	17%	3	25%
Christian	0	0%	1	8%
Pentecostal	1	8%	0	0%
Protestant	5	42%	3	25%
Jehovah's Witness	1	8%	0	0%
No religion	0	0%	2	17%

Characteristic	Group 1		Group 2	
	Number	%	Number	%
Marital Status				
Single	11	92%	9	75%
Married	1	8%	0	0%
Widowed	0	0%	1	8%
Civil Union	0	0%	1	8%
Other	0	0%	1	8%
No Response	0	0%	0	0%
Who lives with you?				
Spouse	1	8%	0	0%
Children	1	8%	1	8%
Friends	0	0%	1	8%
Other	0	0%	2	17%
Family	12	100%	8	67%

Technology

Characteristic	Group 1		Group 2	
	Number	%	Number	%
Phone Ownership				
Android Smartphone	12	100%	6	50%
Apple Smartphone	0	0%	1	8%
Non-smartphone	0	0%	5	42%
Internet Access				
Home	5	42%	3	25%
Work	1	8%	1	8%
Café	0	0%	1	8%
Telephone	10	83%	8	67%
Other	0	0%	1	8%
Social Media Used				
WhatsApp	11	92%	11	92%
SnapChat	3	25%	1	8%
Facebook	6	50%	7	58%
Email	4	33%	1	8%
Text	6	50%	4	33%
Instagram	4	33%	1	8%
Tiktok	1	8%	0	0%

Linguistic Skills

Characteristic	Group 1		Group 2	
	Number	%	Number	%
Other Languages				
French	12	100%	11	92%
English	0	0%	0	0%
Spanish	0	0%		0%
Other	0	0%	1	8%

Knowledge of DV Prior to Playing Game

Characteristic	Group 1		Group 2	
	Number	%	Number	%
Prior training on DV with Share Hope/CPFO				
Yes	1	8%	4	33%
No	10	83%	8	67%
No Response	1	8%	0	0%
Knows a domestic violence or rape victim				
Yes	10	83%	5	42%
No	2	17%	7	58%
Knows of resources to help a DV or Rape victim				
Yes	12	100%	6	50%
No	2	17%	6	50%
Knows of laws to protect someone suffering abuse				
Yes	5	42%	3	25%
No	7	58%	9	75%
Would recommend to an abuse victim seeking help				
Family	3	25%	4	33%
Friends	2	17%	2	17%
Lawyer	3	25%	2	17%
Ministry of Women	11	92%	10	83%
Police	6	50%	9	75%
Women's organization	7	58%	7	58%

APPENDIX 3

Creole Versions: Links to Prototype, Instructional Video, Consent Form, and Surveys

#	File	URL
1	Link to prototype versions	https://forms.gle/mBXUMRS2L5wfWKZa9
2	Instructional video	https://youtu.be/RwiIuHehVzE
3	Consent form	https://bit.ly/2OmQV8G
4	Audio consent form	https://youtu.be/qjvz5g_amvo
5	First pre-game survey	https://forms.gle/abnC2mMkvNmETNNx7
6	Amended pre-game survey	https://forms.gle/5EBUQ56WvQNjxhZk8
7	First post-game survey	https://forms.gle/dUtfQdBuS2vAjJXr6
8	Amended post-game survey	https://forms.gle/5ytaPfiUfb6A4s357

APPENDIX 4

Oral Script for Recruitment

Dear [Name],

My name is (insert name), and I am recruiting participants for a research study on behalf of a student in the Harvard University Extension School. The research study examines the use of an educational video game to teach about attitudes toward domestic violence and the resources available, and you are invited to participate in the study. Your consent will be requested and noted by an enumerator from Share Hope or CPFO. If you agree, you are invited to participate in a pre-study survey, the study (which means playing the video game), and then a post-study survey. You may also be invited to participate in an interview. We will provide a meal for you, as well as money for your transport home in the event you participate in an after-work session. You will have the opportunity to participate in the lottery.

The pre-study survey is anticipated to take 30 minutes to no more than 1 hour to complete, the study is expected to take approximately 1 hour to complete. The post-study survey is anticipated to take 30 minutes to no more than one hour to complete, and the interview is anticipated to take no more than one hour to complete if you are a participant in that part of the process.

Participation in this study is voluntary.

If you have questions or would like to participate, please let your Share Hope instructor or your CPFO service representative know to add you to the list of participants.

Thank you for your participation.

APPENDIX 5

Dokiman oral pou rekrite patisipan yo
(Oral Script for Recruitment in Creole)

[Non],

Mwen rele (mete non w). Mwen ap rekrite patisipan pou yon etid rechèch pou yon etidyan nan inivesite Havard. Rechèch etid sa ap egzamine itilizasyon yon jwèt videyo edikatif ki ap aprann konpòtman sou vyolans domestik ak resous ki disponib yo. Ou envite pou ou patisipe nan etid sa. Yon envestigatè nan Share Hope oswa CPFO pral mande w ak ekri konsantman w lan. Si ou dakò, ou envite pou ou patisipe nan yon ankèt etid-preliminè, nan etid la (ki vle di jwe jwèt videyo a), epi nan yon ankèt etid-final. Yo kapab envite w tou pou ou patisipe nan yon entèvyou. Nou ap ba ou manje, epi tou nou ap ba ou kòb machin nan ka ou genyen pou patisipe nan yon sesyon ki ap fèt aprè travay. Ou pral genyen opòtinite pou ou patisipe nan tiraj la.

Enkèt etid-preliminè ta dwe fèt nan 30 minit a 1 èd tan pou pi plis, etid la ta dwe dire 1 èd tan pou fini. Enkèt etid-final la ta dwe fèt nan 30 minit a 1 èd tan pou pi plis epi entèvyou a ta dwe fèt nan 1 èd tan si ou se yon patisipan nan pati pwosesis sa.

Patisipasyon nan etid sa volontè.

Si ou genyen kesyon oswa ou ta renmen patisipe, tanpri fè fòmètè Share Hope ou a oswa reprezantan sèvis CPFO ou a konnen sa pou yo ajoute w nan lis patisipan yo.

Mèsi pou patisipasyon ou,

APPENDIX 6

INTERPERSONAL REACTIVITY INDEX¹⁹⁴

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

DOES NOT DESCRIBE ME WELL

DESCRIBES ME VERY WELL

1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)
2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the “other guy’s” point of view. (PT) (-)
4. Sometimes I don’t feel very sorry for other people when they are having problems. (EC) (-)
5. I really get involved with the feelings of the characters in a novel. (FS)
6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)
7. I am usually objective when I watch a movie or play, and I don’t often get completely caught up in it. (FS) (-)
8. I try to look at everybody’s side of a disagreement before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective toward them. (EC)
10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (-)
13. When I see someone get hurt, I tend to remain calm. (PD) (-)
14. Other people’s misfortunes do not usually disturb me a great deal. (EC) (-)
15. If I’m sure I’m right about something, I don’t waste much time listening to other people’s arguments. (PT) (-)

¹⁹⁴<https://docs.google.com/document/d/1YCKkyg-OVpT0Qz36qFdHM7yeSGj0DsUYgyx9u7ubnc/> edit.

16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
17. Being in a tense emotional situation scares me. (PD)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
19. I am usually pretty effective in dealing with emergencies. (PD) (-)
20. I am often quite touched by things that I see happen. (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)
22. I would describe myself as a pretty soft-hearted person. (EC)
23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
24. I tend to lose control during emergencies. (PD)
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)
27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)
28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

NOTES:

(-) denotes item to be scored in reverse fashion:

PT = perspective-taking scale

FS = fantasy scale

EC = empathic concern scale

PD = personal distress scale

A = 0

B = 1

C = 2

D = 3

E = 4

Except for reversed-scored items, which are scored:

A = 4

B = 3

C = 2

D = 1

E = 0

APPENDIX 7
INTERPERSONAL REACTIVITY INDEX (in Haitian Creole)

INDIS REAKTIVITE INTÈPÈSONÈL¹⁹⁵

Deklarasyon ki anba yo ap chèche konnen panse w ak santiman w nan plizyè sitiyasyon. Pou chak fraz, endike kijan li dekri ou byen pandan ou ap chwazi lèt ki apopriye nan tèt paj la: A, B, C, D, oswa E. Lè ou fin deside sou repons ou an, mete lèt la sou fèy repons la bòkote nimerò fraz la. LI CHAK FRAZ AVEK ANPIL ATENSYON ANVAN OU REPONN. Reponn li ak tout senserite. Mèsi.

ECHÈL/NIVO REPONS:

A B C D E

PA DEKRI DEKRI MWEN

MWEN BYEN TRÈ BYEN

1. Mwen reve tout tan sou bagay ki ta ka rive m'. (FS)
2. Mwen souvan sansib oswa enkyè pou moun ki genyen mwens chans pase m'. (EC)
3. Pafwa li difisil pou mwen wè bagay yo sou menm ang ak lòt moun nan. (PT) (-)
4. Pafwa mwen pa gen pitye pou lòt moun lè yo genyen pwoblèm. (EC) (-)
5. Mwen santi tout emosyon ak santiman ke pèsonaj yo genyen nan yon woman (FS)
6. Nan sitiyasyon ijans yo, mwen enkyè ak mal alèz (PD)
7. Lè mwen ap gade yon fim oswa pyès teyat, souvan sa pa touche m' konplètman. Dabitid mwen rete objektif (san reyaksyon, san emosyon). (FS) (-)
8. Lè genyen yon dezakò, mwen eseye koute opinyon chak moun anvan mwen pran yon desizyon. (PT)
9. Lè mwen wè yo ap pran avantaj sou yon moun, mwen santi mwen anvi pwoteje moun sa. (EC)
10. Pafwa mwen santi mwen empwisan lè mwen nan yon sitiyasyon ki trè emosyonèl. (PD)

¹⁹⁵ Free for use, neither acknowledgement nor approval is required, but please send me a message via LinkedIn to let me know. Please also contact me via my LinkedIn profile with any questions, comments, and/or suggestions.

11. Pafwa mwen eseye pi byen konprann zanmi m' yo lè mwen ap imajine jan yo wè bagay yo nan fason pa yo. (PT)
12. Li trè ra pou mwen enplike m' trè fon nan yon bon liv oswa fim. (FS) (-)
13. Lè mwen wè yon moun ap souffri oswa blese, mwen gen tandans rete kalm. (PD) (-)
14. Malè lòt moun an jeneral pa trè deranje m'. (EC) (-)
15. Si mwen sèten mwen gen rezon pou yon bagay, mwen pa pèdi tan ap koute agiman lòt moun. (PT) (-)
16. Aprè mwen fin gade yon pyès teyat oswa yon fim, mwen te santi tankou mwen te youn nan pèsonaj yo. (FS)
17. Lè mwen nan yon sitiyasyon ki gen tansyon emosyonèl, sa fè mwen pè. (PD)
18. Lè mwen wè yon moun ke yo trete avèk enjistis, pafwa mwen pa santi anpil pitye pou li. (EC) (-)
19. Anjeneral mwen trè efikas lè mwen ap fè fas ak ijans yo. (PD) (-)
20. Mwen souvan trè afekte lè mwen wè kèk bagay/evènman rive. (EC)
21. Mwen kwè ke genyen de vèsyon nan chak kesyon oswa pwoblèm, mwen eseye gade tou lè de ak pran yo an konsiderasyon. (PT)
22. Mwen ta dekri tèt mwen tankou yon moun ki gen kè nan men. (EC)
23. Lè mwen ap gade yon bon fim, li trè fasil pou mwen mete tèt mwen nan plas pèsonaj prensipal lan. (FS)
24. Mwen gen tandans pèdi kontwòl pandan sitiyasyon ijans yo. (PD)
25. Lè mwen fache ak yon moun, anjeneral mwen eseye "mete tèt mwen nan plas li" pou yon ti tan. (PT)
26. Lè mwen ap li yon istwa enteresan oswa yon woman enteresan, mwen imajine kijan mwen tap santi m' si evènman nan istwa a ta rive m'. (FS)
27. Lè mwen wè yon moun ki mal, ki bezwen èd nan yon ijans, mwen tonbe plat atè. (PD)
28. Anvan mwen kritike yon moun, mwen eseye imajine kijan mwen tap santi m' si mwen te nan plas li. (PT)

NÒT:

(-) vle di fraz yo dwe gen nòt nan mòd ranvèse:

PT = echèl sou pran pèspektiv

FS = echèl fantezi

EC = echèl enkyetid pou lòt moun

PD = echèl detrès pèsònèl

A = 0

B = 1

C = 2

D = 3

E = 4

Eksepte fraz ki gen nòt ranvèse yo, ki fè yo bay nòt:

A = 4

B = 3

C = 2

D = 1

E = 0

APPENDIX 8

Domestic Violence Myth Acceptance Scale (DVMAS) in English¹⁹⁶

1. Domestic violence does not affect many people
2. When a man is violent, it is because he lost control of his temper.
3. If a woman continues living with a man who beats her, then it's her own fault if she is beaten again.
4. Making a man jealous is asking for it.
5. Some women unconsciously want their partners to control them.
6. A lot of domestic violence occurs because women keep on arguing about things with their partners.
7. If a woman doesn't like it, she can leave.
8. Most domestic violence involves mutual violence between the partners.
9. Abusive men lose control so much that they don't know what they're doing.
10. I hate to say it, but if a woman stays with the man who abused her, she basically deserves what she gets.
11. Domestic violence rarely happens in my neighborhood.
12. Women who flirt are asking for it.
13. Women can avoid physical abuse if they give in occasionally.
14. Many women have an unconscious wish to be dominated by their partners.
15. Domestic violence results from a momentary loss of temper.

¹⁹⁶ Peters, J. (2008). Measuring Myths about Domestic Violence: Development and Initial Validation of the Domestic Violence Myth Acceptance Scale.

16. I don't have much sympathy for a battered woman who keeps going back to the abuser.
17. Women instigate most family violence.
18. If a woman goes back to the abuser, how much is that due to something in her character?

APPENDIX 9

Domestic Violence Myth Acceptance Scale (in Haitian Creole)

- 1-Vyolans domestik pa afekte anpil moun.
- 2-Lè yon moun vyolan se paske li te pèdi kontwòl sou tanperaman l yo.
- 3-Si yon fanm kontinye ap viv ak yon nonm ki bat, se pwòp fòt li si li bat li ankò.
- 4-Fè yon nonm fè jalouzi se tankou w ap chèche pwoblèm ak nonm lan.
- 5-Kèk fanm enkonsyaman vle ke patnè yo kontwòle yo.
- 6- Anpil nan vyolans domestik rive paske fanm kontinye fè diskisyon ak patnè yo.
- 7-Si yon fanm pa renmen sa, li ka kite kay la.
- 8-Pifò vyolans domestik soti nan vyolans mityèl ant patnè yo (sètadi vyolans gason sou fanm ak fanm sou gason).
- 9-Gason abizè tèlman pèdi kontwòl ke yo pa konnen ki sa yo ap fè.
- 10-Mwen rayi di sa, men si yon fanm rete ak moun ki abize li, li fondamantalman merite sa ki rive li.
- 11-Vyolans domestik raman rive oswa pa rive apil nan katye mwen an.
- 12-Fi ki ap koze ap mande pou vyolans oswa ap chèche pwoblèm.
- 13-Fi ka evite abi fizik si yo reziyen yo detanzantan.
- 14-Anpil fanm enkonsyaman vle patnè yo domine yo.
- 15-Vyolans domestik koze pa yon ti pèt kontwòl emosyon
- 16-Mwen pa gen anpil senpati pou yon fanm yo bat ki kontinye ap tounen avèk abizè a.Survey
- 17-Se fanm yo ki plis responsab/lakòz lè vyolans domestik yo fèt.
- 18-Si yon fanm tounen ak moun kap maltrete li a, èske se pa akòz yon bagay nan karaktè li?

APPENDIX 10

Share Hope Letter of Cooperation



USA
116 West 23rd Street
New York, NY 10011

Date: July 16, 2020
To: Ms. Ailsa Gilliam
RE: Acknowledgment of Research proposal

To Whom It May Concern,

This letter is to notify you that Share Hope Foundation, Inc. has reviewed your research proposal and tools for your Master's thesis titled "A Formative Evaluation of a Video Game to educate on Gender-Based Violence in low-and middle-income countries, as trialed in Haiti's Garment Factory Industry".

Based on the 2018 study on Gender-Based Violence, lead by Share Hope Foundation in collaboration with the IFC and Better Work, we are aware that Haitian garment factory workers experience a concerning amount of gender-based violence. It is valuable to participate in the formative evaluation of a tool that potentially will provide scalability to reach more people with critical messages on support, resources and general awareness on the theme, particularly via remote/electronic means.

Share Hope observes Haitian protocol for Covid-19. Share Hope Foundation is aware that the process for data collection for this study involves consent of the garment factory worker participants whose participation will be coordinated remotely by Share Hope Inc. This consenting process, available via the online surveys, assumes that each participant will be fully informed without coercion of any kind and reserves the right to have their information revoked from the study at any time if they feel "at risk".

Share Hope Foundation believes that this study is of "minimal risk" according to the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans as defined below:

Minimal Risk Research – Research in which the probability and magnitude of possible harms implied by participation in the research is no greater than those encountered by participants in the aspects of their everyday life that relate to the research (TCPS Chapter 2B).

Share Hope Foundation understands that this study aims to conduct a formative evaluation of a prototype video game for educating on gender-based violence, to inform future development. The process involves testing an electronic game, available via the internet, or app download, and participation in Google Forms surveys, which is justification to believe that this research poses a "minimal risk" to its participants.

Sincerely,

Cynthia Petterson
Executive Director, Co-Founder

Haiti
SONAPI Industrial Park
Building # 47
Port-au-Prince, Haiti

APPENDIX 11

Haitian Education and Leadership Program (HELP) Letter Agreeing to Participation

<letterhead>

Date: 8/18/20
To: Ms. Ailsa Gilliam
RE: Letter of collaboration

To Whom It May Concern,

This letter is to notify you that Haitian Education and Leadership Program (HELP) has reviewed your research proposal and tools for your Master's thesis titled "A Formative Evaluation of a Video Game to educate on Gender-Based Violence in low-and middle-income countries".

HELP's mission is to create, through merit and needs based scholarships, a community of young professionals and leaders who will promote a more just society in Haiti.

HELP understands that this study aims to conduct a formative evaluation of a prototype video game for educating on gender-based violence, to inform future development. The process involves testing an electronic game, available via the internet, or app download, and participation in Google Forms surveys.

We seek opportunities for our students to participate in professional activities such as this. We welcome the opportunity to open participation of our community to this formative evaluation of this video game tool and associated surveys/processes. HELP hopes that the feedback you receive will be useful in shaping the video game to provide scalability to reach more people with such critical messages on support, resources and general awareness on the theme of domestic violence, particularly via remote/electronic means in these times of pandemic.

We are aware that the entire process for participation and data collection is via remote electronic means. We acknowledge that consent of the participants is conducted via the online survey/s, and agree that this process will fully inform every participant. Participation is without coercion of any kind and each participant reserves the right to have their information revoked from the study at any time if they feel "at risk".

We believe that this study is of "minimal risk" according to the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans as defined below:

Minimal Risk Research – Research in which the probability and magnitude of possible harms implied by participation in the research is no greater than those encountered by participants in the aspects of their everyday life that relate to the research (TCPS Chapter 2B).

This paragraph is justification to believe that this research poses a "minimal risk" to its participants.

Sincerely,


Garry DELUCE
Country Director

APPENDIX 12

Interview Transcripts

Interview #1:

Ailsa: I'm Ailsa, I created the video game and I'm very grateful to you for making the time today.
Interviewee #1: Thanks for creating this activity because it allowed me to learn some lessons.

Ailsa: I'm very glad and it's very much on my heart to work to stop domestic violence, and I was very excited to work with the ladies of Share Hope and CPF0. The ladies of the garment factories are very dear to me, and I was glad to be able to spend time with them when I was in Haiti. So, I'm going to ask you a few questions.

Ailsa: Can you tell me what you liked best about playing the game?

Interviewee #1: What she liked best was that Isabelle always had an answer to the question or advice for them about every question they had.

Ailsa: Were there any things you didn't like about the game?

Interviewee #1: There wasn't much that she didn't like, but more so that there were certain answers that didn't sit well with her, but other than that it was fine.

Ailsa: Did you find the voiceover useful?

Interviewee #1: I really liked the voiceover because when you hear someone's voice talking about something and the inflection of their voices, it helps them understand better than just reading a text or looking at images.

Ailsa: What did you learn most from the game?

Interviewee #1: What I liked (she didn't remember the name of the character, but it's the one with the son) was the one where she said she had to take care of herself, as well as anyone under your responsibility, but first you must take care of yourself, so that you are capable of taking care of others.

Ailsa: Have you played a video game before or a video game in the form of a story?

Interviewee #1: No.

Ailsa: Do you feel like you know more about gender-based violence now?

Interviewee #1: Yes.

Ailsa: Does you have any ideas on the best way to share the game with people in Haiti?

Interviewee #1: Use the internet and WhatsApp because everybody uses WhatsApp. There they can share the game and learn more about it. Also, a link on YouTube could help.

<I think I've used up my 10 minutes and I want to be respectful of her time so please tell her I'm very grateful. Is there anything else she wants to tell me before we end?

Interviewee #1: Thank you for putting that activity in place. I would like to ask to get more training like this because it has really added to my knowledge. When you learn something more, it allows you to expand your breadth of knowledge. I am available to do anything like this again and am happy to participate.

Messi Anpil!

Interview #2:

Ailsa: Thank her for giving me this time to talk with you. I'm very grateful.

Interviewee #2: Me too!

Ailsa: I'd like to ask you some questions, so I'm going to start off by asking you what did you like best about playing the game?

Interviewee #2: I liked the second story; I don't remember the name.

Ailsa: Got it, I can figure it out. Thank you!

Ailsa: Did you find the game confusing at any time?

Interviewee #2: No, on the contrary, I didn't find it confusing at all. I found myself in it and learned that when you are a victim of abuse, where to find help.

Ailsa: Have you played a video game before on a computer or Android?

Interviewee #2: No, it's the first time.

Ailsa: Did you feel like the voiceover was important to you?

Interviewee #2: Yes, it was very important and relevant for me because even when you are reading, there are certain things you may skip, but when you hear it too, you are more likely to remember it.

Ailsa: Did you have any trouble with the story endings where there wasn't voiceover?

Interviewee #2: No, I didn't have a problem with the section with no voiceover because it was short and precise, so I was able to go through it without the voiceover.

Ailsa: Does you think that children in Haiti would benefit from a game like this?

Interviewee #2: It would be very helpful and useful for children to benefit from a game like this.

Ailsa: Did you learn a lot from the game?

Interviewee #2: Yes, I learned a lot from the game.

Ailsa: Would you feel comfortable downloading the game to your phone hypothetically?

Interviewee #2: Yes, I would do it, although I don't know how. Is it available on social media, or how would I get it?

Ailsa: I would like to make it available on social media like Facebook.

Interviewee #2: She said it would be very good.

Ailsa: Do you think that it's a game that other people would like to download as well?

Interviewee #2: People would be very interested to play that game, and I even talked about it with friends saying I played it at school and my friends wanted to know where I got it from. There would be people in my circle who would be interested in playing it.

Ailsa: Did you mention it to any male friends?

Interviewee #2: I didn't talk to any male friends at all, only to female friends. Some reacted in an eager manner and some were not too sure. I know they would all learn a lot and benefit if they played the game.

Ailsa: I'm curious, are any scenarios were missing from the game from Haitian life?

Interviewee #2: She found that her character was complete from her perspective and nothing was missing. She played two character's stories.

Ailsa: Would you be excited to play the other character stories?

Interviewee #2: Yes, I would like to play the others. I would like to read all the other stories.

Ailsa: The artist is a very talented young lady. I would be interested to know your thoughts on the artwork that we tried to make as real to Haiti as possible.

Interviewee #2: It's good since it was animated and the fact that you had different faces was great.

Ailsa: What did you like least about the game?

Interviewee #2: The one thing I liked the least was that I didn't have a way to go back to read or listen to something if I wanted. That would have been good.

There is functionality to do that (back button), but I think I need to create informational material showing functionality.>

Please thank her for sharing with me and being so open. I really appreciate her feedback. It will be very important to me in improving the game and making it more useful to people.

Thank you!

Mesi anpil!

APPENDIX 13

Video Release Form in English

_____, authorize and grant Sherohub LLC permission and right to take, edit, alter, copy, display, publish, distribute and use any or all of the videos that are taken of me, for use for any legal purpose.

This authorization is valid in all languages, media, and formats that are currently known or are being discovered later.

This authorization will continue forever, unless I revoke it in writing.

My agreement was given without receiving any compensation.

Name: _____

Signature: _____

Date: _____

APPENDIX 14

Video Release Form (in Creole)

Akò pou utilize videyo a mwen _____, pèmèt ak bay Sherohub LLC otorizasyon ak dwa pou pran, korije, chanje, kopye, ekspoze, pibliye, distribye ak sèvi ak nenpòt oswa tout videyo ke yo pran sou mwen, pou yo itilize pou nenpòt ki rezon legal.

Otorizasyon sa a valab nan tout lang, media ak fòm ke yo konnen kounye a oswa ke yo ap dekouvri apre.

Otorizasyon sa ap kontinye pou tout tan, sof si mwen anile li alekri.

Mwen te bay akò mwen san mwen pa resevwa okenn konpansasyon.

Non: _____

Siyati: _____

Dat: _____

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