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Master's Thesis
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Generating Social Empathy with an Interactive
Simulation


Raising Awareness of Domestic Violence in Japan

Keio University
Graduate School of Media Design

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A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
Master of Media Design

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Abstract of Master's Thesis of Academic Year 2021

# Generating Social Empathy with an Interactive Simulation

## Raising Awareness of Domestic Violence in Japan

Category: Design

## Summary

Domestic violence has been declared by the United Nations as one type of the most common gender-based violence against women worldwide.

This research focused on two objectives: (1) Studying the effects of a public health approach to Domestic Violence in Japan by promoting social empathy to influence people's perception of Domestic Violence and (2) Study the effectiveness of design elements in communicating DV as a social problem.

A preliminary study was conducted to collect and analyze the experiences of DV victims in Japan in order to present to the participants of the study a narrative based on real experiences. The narrative primarily focuses on DV as a social problem and its revictimization effects.

Three different iterations were developed to study how multimedia elements affect the understanding of the narrative for the participants. The first iteration was text-only, the second iteration consisted of pre-recorded audio and floating text without visuals and the third had 3D models, pre-recorded audio as well as light effects.

This research tested the effectiveness of the simulation by conducting an experimental comparative study between each iteration to study if there was an increment in comprehension when adding multimedia elements. It also measured the empathy and comprehension level of the participants to analyze if social empathy was generated and if it influenced their perception of DV.

Based on the results, the participants learned about DV with a social empathy perspective, recognized the effects of revictimization on DV victims, and the need

for improvement in the government response to the problem but didn't recognize DV as a social problem. As for the iterations, the multimedia interactive simulation produced the highest score in the comprehension assessment out of the three.

Keywords:

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repay your kindness, love, and strength you showed me tenfold for the rest of our lives which I pray we spend together.

This work is dedicated to the victims of DV. To those who agreed to share your experiences with me, I have the utmost respect for your courage and bravery and will be forever grateful. And to those who are still fighting, keep on fighting in your own way, because for each day you continue to fight is a victory against DV.

# Chapter 1
# Introduction

## 1.1. Background

### 1.1.1 Violence Against Women

The United Nations (UN) defines violence against women (VAW) as "any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life" [2].

Based on the description, intimate partner violence and sexual violence are two of the most common types of violence women are victims of, as the estimation is that almost one third of the women worldwide who have been in a relationship report being subject of violence by their intimate partners [3].

The World Health Organization's (WHO) multi-country study on women's health and domestic violence against women confirmed the existence of DV in all the studied countries [4]. And during the COVID-19 pandemic it was estimated that, globally, 243 million of women between 15-49 years old have been subjected to sexual and/or physical violence by an intimate partner [5].

### 1.1.2 Domestic Violence

Domestic Violence (DV), also known as "Domestic Abuse" or "Intimate Partner Violence" (IPV) happens when one person in an intimate relationship tries, through a pattern of actions, to gain or maintain control over the other person [6].

The methods used by the perpetrator to gain or maintain control are divided into the following categories:

- Psychological: Intimidation or threat of physical injury.

- Physical: Hurting or trying to hurt a partner, denying medical care, or forcing substance use.

- Economic: Making the other economically dependent on the abuser or denying access to money, education, and/or employment.

- Social: Isolating the other from anyone, even family and friends.

- Emotional: Undermining the other's value, abilities or other types of verbal abuse.

- Sexual: Forcing a partner into a sexual act that they do not consent to.

Research suggests that it is common in DV cases for different types of violence to be present at once, most commonly physical and psychological violence. [7]. And even in cases when violence occurs only once, the fear of future attacks is enough for victims to fear the abuser and become submissive [8].

As for the consequences of DV, it has been found that it negatively impacts on the victims at different levels. On a personal level, physical and lasting psychological injuries can develop into serious chronic pain [7]. And, on the interpersonal level, affect the emotional and social well-being of the whole family, with adverse effects on parenting skills, education, and employment. When the cost of medical services to treat injuries caused by physical violence from a partner as well as the costs of individuals not reaching their full productive potential are factored in, the overall costs DV has on society pile up [9].

While there are risk factors that increase the possibility of someone becoming a victim of DV, anyone can be a victim regardless of age, race, gender, sexual orientation, faith or social class [8].

There are different types of approaches to reduce the number of DV cases such as gender perspective, which focuses on the power dynamics of the patriarchy; human rights, which is based on the obligations of states toward their citizens by protecting their human rights; criminal justice, which enforces the law after the VAW has occurred; and public health [9].

"The public health approach is a science-driven, population-based, interdisciplinary, intersectoral approach based on the ecological model which emphasizes preventing violence before it occurs" [9].

## 1.2. Research Problem

As previously stated, DV is a worldwide problem that affects mostly women and results in several disadvantages to the victims and society in general. And while a number of studies have been done to understand this problem, the reality is that the number of victims keeps increasing, especially in the state of emergency caused by the current global pandemic.

This research focuses on studying the effects of a public health approach solution on DV cases in Japan by promoting social empathy to influence people's perception of domestic violence.

## 1.3. Research Objective

The objective of this thesis is to study if social empathy can influence people's perception of DV. Considering that, the following research questions came to:

- To understand the current attitudes and perceptions of DV in Japan.

- To study if social empathy can modify people's perception of a social problem and their attitudes toward it.

- To increase awareness of DV in Japan and improve the situation of DV victims.

## 1.4. Contribution

Several solutions for DV have been developed in recent years but they have a focus on immediate responses to violence or focusing on long-term care after the violence such as rehabilitation and reintegration programs [9].

This research is localized in Japan with the aim of DV prevention not only on an individual level but in educating society about DV as a social problem to reduce revictimization and improve the recovery process for the victims.

## 1.5. Thesis Structure

**Chapter 1**

A brief introduction to the problems that this research addresses, as well as an explanation of the research problem, research objective and contribution.

**Chapter 2**

The literature review of the historical and current situation of DV in Japan. The theory of empathy and definition of simulations, serious games and related work.

**Chapter 3**

An explanation of the proposed solution which is an interactive simulation that narrates the story of a real DV victim from a third-person perspective. It includes a detailed description of the design process and the interface of the simulation.

**Chapter 4**

An explanation of the experiment conducted to test the hypotheses, as well as the description of the participants, control and experimental groups, and a description of the evaluation tools.

**Chapter 5**

The results and discussion of the experiment as well as the limitations and concerns of the study. It also includes the objective of future work and long-term goals.

# Chapter 2

# Literature Review and Related work

## 2.1. Domestic Violence in Japan

### 2.1.1 Historical context

The Japanese legal system created before the Second World War was based on the idea that the 'well-being' of the family or ie(household in Japanese) is best represented by the father/husband, therefore it granted the power to the father/husband as head of the household to represent the interests of everyone inside that family, including those of the wife. [10]

This system created an imbalance of power in the household and cases of violence from husbands against their wives in Japan can be traced back to the Meiji era (between 1868 and 1912), where it is possible to find documented cases of husbands abusing their wives as a way to control them. This abuse was justified in the legal system of that time [11]

In 1947, the Constitution of Japan was changed to stipulate that all members of the family regardless of gender and age deserved respect and equality. And even though, on paper, equality was legally recognized, at a social level the husband continued to have power over all household decisions and the wife continued to depend economically on their husband [12].

By the 1970s, the United Nations (UN) started receiving reports of cases of VAW and discrimination. These reports initiated further research into DV [13] and by the 1980s the amount of information collected started to be shared between the UN's member countries. This international collaboration led to the focus of the 1995 World Assembly of Beijing to be centered around the "Human rights of Women". During the world assembly, a declaration was made to support women's

rights, fight against violence, and recognize DV as not only a problem at home but a societal problem. [14]

While in countries like the United States, where the fight against DV progressed rapidly between 1970 and 1980. In Japan, the concept of DV was understood as violence by children against their parents. This concept was generated because of the way the discussion about DV was presented in the media and books published at the time [15].

Social and cultural assumptions about the relation between sexes in Japan also contributed to a situation where problems inside the family were considered private. Four main assumptions can be identified in Japanese society that contributed to the idea of DV as a private and unusual matter [16]. :

1. Japanese people believed that Japanese men were not as violent toward women as western men as a result of their rice-eating diet, in contrast to the meat-eating diet western societies have.

2. The family is the most basic and important unit of Japanese society, as a result the family's interest must come first even in situations of disagreement or violence. If the violent situation were to be made public, it would bring shame to the family.

3. The Japanese woman has a high status inside the home, considering she is the one who manages the husband's income. The idea of male domination or female obedience is unrealistic in a Japanese household

4. The cases of violence presented in a household are individual occurrences that do represent a pattern of abuse and are not therefore considered as social problems.

As a result, during the 1980s, most Japanese women were "aware" that a problem of DV existed but it had no relation to abuse between husband and wife. They also didn't consider it to be a social problem [17]. These assumptions prevented Japanese women from recognizing DV as a social issue for several years.

## 2.1.2  Recognition of DV and Civic Lawmaking

The first step for solving a social problem is for the problem to be recognized by the society [18].

In the case of DV, during the 1960s and 1970s feminist movements focused on fighting violence against women in countries such as Canada, Australia, the United Kingdom, and the United States [19]. On the other hand, DV was not considered a social problem but a private affair that only concerned the family in Japan.

While there has always been a presence of grassroot activism in Japan, particularly by women, to address social issues such as prostitution, pornography, rape, child abuse, etc [20] [21]. DV maintained its status as a private matter in Japanese society. But that didn't stop activists from lobbying the Ministry of Health and Welfare as well the Tokyo Government for the creation of a shelter for victims of abused women.

According to a study made in Tokyo in 1992, with a random sample of adult men and women, 86% of the respondents considered DV to be a private problem and 61% considered that when a wife was abused by their husbands it was provoked by the woman [22]. And although the Japanese Penal Code doesn't excuse violence from a husband to their wives, the reality is that it is rarely applied in cases of DV [15].

In 1992, the non-governmental organization called The Domestic Violence Action and Research Group (DVARG) was created to 're-discover' and 'legitimize' DV as a societal problem and obtain government support [15].

The first step was to conduct research about the state of DV in Japan. DVARG developed a survey to hear about the experiences directly from the victims. This research was shared through different communication channels throughout Japan. They obtained 796 responses, as well as donations from the public to fund the organization's activities. [15]

DVARG made public the results of their research and attracted national and international attention to the DV problem in Japan. DVARG attended the 1995 UN World Conference on Human Rights in Vienna, where they shared their views and the results of the national survey. [15] .

Looking for international support was key for the movement against DV in

Japan. The Japanese government claimed that DV was not a social problem in the reports presented to the UN [23]. But DVARG advocacy in the UN Conference provided enough evidence to legitimize the problem of DV in front of an international audience [15] .

After social mobilization has legitimized a social problem, the problem requires an official intervention from government agencies [18]. In the case of DV in Japan, several organizations worked together with politicians to demand for the government to pass a law that protected the victims.

In 1998, female politicians and activists had to fight their male counterparts in the Diet for the DV bill to pass. Some of the arguments used against the law continued to perpetuate the idea that Japanese men are not violent or that the government shouldn't intervene in a family issue [24]. In February of 2000, a research conducted by the Cabinet Office revealed that 1 in 15 women reported marital rape and 1 in 20 experienced life-threating violence from their partners. This research brought back into discussion the need for a DV bill to protect victims of DV [24].

After discussions and negotiations with members of each party, a limited version of a DV law was passed in 2001 called " the Act on the Prevention of Spousal Violence and the Protection of Victims ". This first version of the law was a limited version of what the organizations and female politicians had envisioned, and consequently they requested for a revision of the law every three years [24].

In Japan, civic movements have always existed but few of them obtain recognition and legitimization from the government. The enactment of " the Act on the Prevention of Spousal Violence and the Protection of Victims " proves that civic movement can result in public policy.

### 2.1.3  The Domestic Violence Prevention Law

The first version of the Act on the Prevention of Spousal Violence and the Protection of Victims (DV Law) was enacted in 2001. This version only considered physical abuse against a spouse or domestic partner and did not cover the need to offer support and shelter to the victims [25].

After the first revision, DV activists made sure to educate the politicians in regards to the real needs of the victims at that moment. The law was modified to

include psychological and sexual violence, as well as funding for national offices to offer support for the independence of the DV survivors. This revision was also the first to include foreigners and disabled people [25]. The law has continued to have revisions every three years but no major changes have been done since.

The main objectives of the DV law are to: establish Spousal Violence Counseling and Support Centres, protect the victims, and issue protection orders and restraining orders [26]. While the creation of the law represents a positive advancement towards eliminating DV, the DV Law still has several flaws regarding the protection of the victims .Some of the current flaws the DV Law has are:

1. It does not cover same sex relationships. Only heterosexual couples that live together can receive protection from this law [26].

2. Protection orders are issued case by case. The evidence the victim needs to present to be granted a protection order relies on other institutions like the Police or Hospitals to back up the claim of abuse [27].

3. Victims who were sexually and psychologically abused are not eligible to file a protection order. Meaning that protection orders are only granted when there's evidence of life-threatening physical abuse and there's a continuous risk of being victimized [28].

4. A waiting time for the victims. Under the DV law, victims can only ask for law protections when they have been in a violent situation for a minimum of six months. This does not take into consideration the level of violence or the risk of their situation [12].

These issues have existed since the first version of the DV Law when it was enacted in 2001. Some of the flaws have been contested by civil organizations. But, in general terms, the DV Law is a right step into restructuring gender inequality in Japan.

### 2.1.4 Current situation

In Japan, one in four people has experienced spousal violence. For women, one in four have been the victims of violence from their partners and for men, one in

five. One in eight of the victims have feared for their lives, in women the number rises to one in five [29].

To better understand the current situation of DV in Japan, it is necessary to analyze it according to the social-ecological model of violence [30] (see Figure 2.1) and taking in consideration the cultural context of Japanese society.
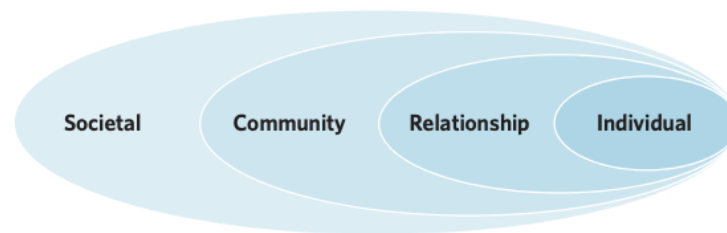


Figure 2.1  The ecological model of violence (source: WHO)

**The individual - The victim**

The majority of DV victims in Japan are women between 20 and 80 years old, these two demographic characteristics are the result of how most of the surveys regarding the topic are conducted in Japan. For instance the "Survey on violence between men and women" which is a survey conducted by the Gender Equality Bureau every three years [31] specifically targets people over 20 years old.

This is a result of two cultural and legal aspects: (1) The legal age in Japan is 20 years old and (2) underage marriage is very uncommon in Japan. Therefore the majority of relationships between underaged people do not have a legal precedent and are not recognized under DV Law. Additionally, Japan has developed a concept called Date DV to refer to toxic and abusive relationships between unmarried people. Hence research targeting minors in Japan is separated from DV. Date DV as a research topic is beyond the scope of this thesis and will not be analyzed further.

As for their partnership status, 40% of the victims have suffered abuse while living together, out of those 60% ended the relationship. As for the rest, 18.1% wanted to separate but didn't and 17.3% didn't want to separate. In about 30% of the families where there is DV between the parents, the abuse has also extended to the children [29].

Research in Japan identifies four categories of violence in DV cases: physical, psychological, economic, and sexual. Though not all types of violence are present in every case, psychological violence was selected by all respondents in the "DV Experience Survey" survey conducted by the author, followed by physical, and economic.(see Appendix A.1).

As for the effects of DV in their lives, all of the respondents of the "DV Experience Survey" described physical and psychological problems at different levels such as, aggressiveness toward their children, high levels of stress, insomnia, headaches, and chronic pain to name a few. Consequently in some cases the victim stopped working and became isolated at their homes which made them economically dependent on their partners.

For Japanese victims, factors such as economic dependency and social isolation are some of the most common reasons for not separating from their abusers. But the most predominant reason for staying is their children. Reasons like not wanting to raise their children alone or not wanting to make the child worry are the two most given reasons by male and female victims [32].

According to the 2020 Report of the Gender Equality Bureau in Japan, 41.6% of women and 57.1% of men who are victims of DV didn't consult with or asked anyone for help, the most common reason being "I thought it was not worth the trouble." and the second most common is "I thought there was something wrong with me".

Based on the data, the most common profile of DV victims in Japan are women who are full-time homemakers, economically dependent on their husbands, afraid of social judgement, and blame themselves for their husband's violence. As a result they tend to be obedient out of fear of reprisal from their husbands and do not ask for help [12].

**The relationship - The perpetrator**

Personal relationships are studied at the second level of the model, consequently being in a relationship with an abusive person increases the risk of being a victim.

The cycle of violence that perpetrators systematically do to maintain their power over the victims has been studied. This cycle begins with a tension building event between the perpetrator and the victim, then it escalates to a battering

incident, followed by the abuser's attitude and expression of remorse, and ending in a stage of calmness [33]. This cycle is repeated a number of times and each time an escalation of the violence is present. In the most optimistic of scenarios, the cycle ends when the victim leaves the abuser and more often than not until the death of the victim.

To understand what Japanese perpetrators consider violence, it is necessary to understand their own perceptions of violence. For some, their sense of 'responsibility' to raise and educate their children and be in control of their family's actions is so strong that they communicate it with justified violence. For others, even recognizing what they are doing as abuse is unthinkable and consider it an expression of love and as their partner's fault [34].

For some of the abusers, their concept of gender is based on the idea that men are the ones responsible for earning the money and the women do the housework. That the men made the final decision and it's the women's job to support them. Abusers also tend to believe that women should be quiet and live their lives by being considerate to others [34]. These ideas of gender based on biological determinism have been present in Japanese society. While biological determinism can perpetuate dangerous ideas and delay gender equality in any society, it cannot be blamed entirely for DV.

Another important aspect about the abusers is their self images of their role as husbands and fathers in Japanese society. For some, their need to discipline their family led to trivialization, denial, and blame shifting of their violence. For others, it was the social pressure that as a father, they had to have the perfect family that led them to use violence [34].

It is the abusers' misunderstanding of gender, their perception of violence, and their idea of what a husband/father means that justify the use of violence as a problem-solving tool. And just as biological determinism, societal expectations are only a small part that contributes to the abuse.

Other relevant behaviors of a DV perpetrator are unstable feelings and attitudes toward their partner and children, threats about keeping their violent behavior towards their partners and children, and problems with drug or alcohol abuse while being functional and in high-regard in their workplace or public sphere [35].

Prevention strategies at this level include rehabilitation programs and profes-

sional counseling for perpetrators. It is also necessary for these solutions to be communicated properly. In Japan, the Coalition of IPV Perpetrator Re-Education Programs-Japan (PREP JAPAN) was founded in 2018 [36] to increase awareness of their rehabilitation programs but the organization is still unknown to the general public and consequently their reach is limited.

**The community - Support system**

At the community level, the model explores the social settings where the relationships take place such as workplace, neighbourhoods, and schools. In DV cases, the violence happens inside the household and within the family members, nevertheless the community is not only the buildings but the human relationships that happen in those buildings. These social relations can also provide support or inflict damage to the victim, therefore in this section, the research will focus on how social relations affect the victim.

As discussed previously, the majority of victims of DV do not consult with anyone about their situation. But the victims who do ask for help, usually do so within their inner circle such as family, friends, and coworkers or superiors [32].

When a victim approaches an outsider for advice about their situation, they are in high-risk of victimization from their family or friends if they lack understanding of the problem. Several studies suggest that victims might suffer more from the lack of support and understanding from their families and friends than from the abuse [37] [38].

Some of the responses regarding revictimization in the "DV Experience Survey" detailed situations where the person giving the advice justified the abuse and asked the victims to endure the situation with phrases such as "That's what men do" or "you are not being beaten" as well as a denying the victim's situation completely. These types of responses affect the self-esteem and confidence of the victim about their assessment of the situation to the point that they might endure the situation regardless of their safety.

On the other hand, when a victim is listened to and supported by their inner circle the possibility of recovery without trauma is higher and reconstructing their life is easier [39].

The recovery process that victims go through differs depending on the solution,

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when victims leave their abusive partners a process of "regaining their self" [39] needs to be supported by their inner circle since it's not a linear process and it doesn't end when the victim separates from the abuser [37].

The importance of the support DV victim's need cannot be understated. But it is also important to consider that when providing support to the victims it is crucial to understand their perspective, as well as that of the perpetrator, to avoid exposing the victim to new difficulties [37].

In sum, there is a need to teach multidimensional knowledge about DV which leads to recognition of DV and different types of violence from the society. As a crucial part of the recovery process of any DV victim, the community needs to be aware of the DV problem as a social issue and be knowledgeable enough about the issue to refer the victim to professional help and avoid revictimizing them.

As one of the objectives of this research, the development of an educational tool that can increase awareness in society about DV is detailed in the next chapters.

**The societal - Public Policies**

By law in Japan, DV victims have access to different services and support systems. However the existence of these services does not mean they are adequate for the victims.

One of the main critiques to the current law and systems surrounding DV in Japan is the lack of diversity and flexibility regarding the response. The current method is based on the idea that victims wish to separate from their partner. In cases when the victim doesn't want to separate, the law and the system doesn't offer any kind of protection [40]. Hence, victims who do not want to separate are neglected and don't receive support to improve their situations.

In cases where the victim does want to leave their perpetrator, the DV Law establishes support centers for the victims. The support centers provide services such as: consultation and introduction of relevant organizations, provide counseling, assure safety and provide temporary protection for victims and their accompanying family members, provide information and other forms of support for self-reliance for victims, and provide information about shelters [41].

The reality is that less than 5

When a victim is offered a space in a shelter, there are other factors that made

the victims consider their use:

1. Accessibility is limited, meaning victims cannot access them directly, first they must contact their local welfare department which decides whether the victim qualifies or not; and if it's done during the weekend, the victim has to contact the police department to seek temporary shelter [42].

2. Geographic location of the shelter. Due to the reduced number of shelters, it is possible that for the victims living in rural areas it might be difficult to reach it [42].

3. Shelter's length of stay is in principle two weeks and children older than 12 years old cannot use it [42].

4. Revictimization may occur at the shelters by the staff due to controlling the victim's actions under the idea of keeping the victim safe [40]. The victim is not allowed to leave the shelter and would need to ask for days off if they have a job and if they have children, the children won't be able to attend school.

Once the victim leaves their perpetrator, most of them suffer economic hardship. The physical and psychological effects DV has on the victims might hinder their ability to search for or even maintain a regular job. Therefore a high number of victims need to rely on welfare systems but these benefits are only provided as a last resource. In cases of DV, government staff who lack proper training to deal with it might be insensitive to the victim's situation and deny their requests [42].

After leaving the shelter and finding a stable place to start their life again, some victims might need protection orders to collect their personal belongings and to keep the perpetrator away. But on average, a protection order takes at least two weeks to be issued and executed [43]. During this period of time the victims have no legal protection against the abuser and in most cases the abuse continues even when the relationship has ended [44].

If the victim decides to request a divorce and if the divorce is taken to court, there is a high possibility that the court's response won't be appropriate for DV cases. The judges, lawyers and administratives may underestimate the extent of

violence, deny it, or simply lack understanding of the risk associated with the abuse [11].

As discussed in this section, the current legal system has several flaws when dealing with DV cases. One of the objectives of this research is to communicate these problems to society as a way to raise awareness not only about DV but also about the hardships victim's face not only in the relationship but within the system as well.

## 2.2. Empathy

Empathy is usually defined as the ability to feel and understand the emotions and experiences of others. But research suggests that what we call empathy is a process in which a person can imagine the internal state of another and respond in a sensible manner [45] .

Empathy is an important ability for humanity as it is a key element for our survival as a species. Empathy has improved our survival rates by developing a sense of security and attachment that lasts a lifetime [46]. These strong attachments allowed for an equitative distribution of attention and resources beyond self-protection. As a result, empathy and strong attachment are connected [47].

Research focuses on two major components of empathy: (1) affective, the physiological experience of feeling what the other is feeling and (2) cognitive, which is processing the feelings as well as creating boundaries between the self and the others [48].

Research conducted on the Mirror Neuron System (MNS) has demonstrated that mirror neurons create similar physical sensations in the observer when the person is observing the actions of another person. This process is referred to as "mirroring" [49] and while this process is not likely to be empathy, it does demonstrate that humans are capable of experiencing other people's feelings.

When mirroring is accompanied with a cognitive process empathy is developed. Meaning that when a person only imitates another person's feeling that is affective empathy but when the person processes what the other person feels and analyzes it then it is cognitive empathy [50]. This is a very simple explanation of how empathy is created but there are more components that make up the full scope

of empathy:

- Affective Response: When an outside stimulus activates one of our senses and triggers an affective response on our bodies. This response is what mirroring or mimicry is. The response is automated, therefore it cannot be considered empathy [50].

- Affective mentalizing: This is both a physiological reaction and a cognitive response. When affective responses appear in the brain, the mind tries to make sense of the mirrored feelings and move the process from affective to cognitive. This can be triggered by the reaction of our senses, our imagination, or a narration of an event [50].

- Self-other Awareness: Is the ability to differentiate the experience, feelings, and understanding of others from our experiences, feelings, and understanding. When a person has an affective response but tries to understand the situation based on their own experience and feelings, then it is not empathy but emotional contagion [50].

- Perspective-taking: It happens when a person is able to engage in self-other awareness and think about the other person's experiences to try to understand the other person. When done correctly the person can imagine being the other person undergoing the other person's experience rather than thinking what would the person do if it were in the situation of the other person [50].

- Emotion regulation: Is the ability to react and understand other people's feelings and experiences without being overwhelmed by them. This ability is key for maintaining balance and differentiating between one's emotion and the others [50].

These components are what recent research suggests empathy is composed from, a collection of processes that generate a cognitive and affective response [50].

When defining empathy, It is also necessary to discuss other terms for which empathy is used as a synonym when the reality is that they are different concepts that generate different neurological responses in a person. These concepts are: personal distress, sympathy, compassion, and judgment.

**Personal Distress**

The importance of self-other awareness in empathy is that when a person lacks this ability emotional contagion might happen and the person might feel the pain or suffering from another person.

In the past, emotional contagion was considered part of the empathy process, even used in the Interpersonal Reactivity Index (IRI) [51]. But with recent findings in the field of neuroscience research the concept has been dismissed from the empathy process as personal distress may allow the person to disconnect from an empathic response to avoid one's personal discomfort [52].

With personal distress a person may avoid an empathic response to prevent emotions like discomfort or anxiety from arising from the other person's situation. The self-focus and avoidance are not an empathic response.

**Sympathy**

The term sympathy is the one that is used the most as a synonym for empathy, but based on neurological empirical evidence it is possible to distinct the two concepts as different states [53].

The main difference between empathy and sympathy is that while for an empathic response it is necessary for the observer to share the emotions of the other person, as in reflecting an affective response. For sympathy, while there is concern for the other person, the emotion the observer is feeling is directly oriented at the other person. So, instead of putting themselves in the place of the other person, the observer is having an emotional response to the situation [54].

The key difference is when someone 'feels bad' for the other person because of the situation the person is in and assumes a hierarchical, almost condescending, position in the situation, instead of understanding and communicating with the other, that is sympathy [50].

**Compassion**

Compassion uses similar abilities as empathy but is associated with painful or stressful situations and a charitable feeling.

To generate compassion abilities such as emotion regulation, perspective-taking,

and self-other awareness are necessary. However the main difference with empathy is that it does not involve a shared experience of the other's emotion or life situation [55].

Compassion is "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help"[55]. It may also exist alongside sympathy and have a hierarchical position regarding the other person, as in cases when the person feels compassion for the less fortunate [50].

**Judgement**

Judgement can be differentiated from empathy when a person responds to another person's situation without considering the other person's feelings or experiences. On the other hand, empathy is about placing yourself in the situation of the other person considering their feelings and experiences [50].

An important difference between empathy and acceptance regarding judgment is that in the case of empathy it is possible to think about the other person's feelings and experience to understand their situation but it is not required to accept it [50]. Therefore judgment might come after an empathic response but if it comes before, then it is not empathy but judgement.

The need to differentiate the previously discussed concepts is relevant for this thesis as the objective of this research is to study the affective and cognitive response of a person to a certain stimulus, therefore it is necessary to correctly identify the type of responses and examine it accordingly.

As discussed in this section, the concept of empathy is an array of processes that encompass an affective and cognitive response in one person about another person's situation. But it is also possible to analyze empathy if we divide the personal and societal aspects of the person's situation. As a result the concept of interpersonal empathy and social empathy are analyzed.

## 2.3. Social Empathy

Interpersonal empathy happens between individuals and is necessary for any healthy social relationships [50]. For interpersonal empathy, the abilities described

in empathy are necessary but can limit the understanding of the whole situation for the person and as a result limit their empathic insight.

On the other hand, social empathy "is the ability to understand people by perceiving or experiencing their life situations and as a result gain insight into structural inequalities and disparities" [56]. Social empathy takes into consideration the larger systems, such as organizations that are responsible for decisions and policies that impact large groups of people" [50]

The basis of social empathy are interpersonal empathy as well as two additional components: contextual understanding of systemic barriers and macro self-other awareness/perspective-taking [57].

**Contextual understanding of systemic barriers**

Social empathy encompasses the ability to consider the social context at a macro level when listening to the experiences and feelings of others, specially of those who belong to a different social group [50].

It is necessary to study the social and historical context that creates barriers for specific groups and prevents them from participating in broader social environments because this marginalization impacts groups and people's behaviors [50].

By understanding the systemic barriers, a person can develop a deeper understanding for other groups and progress to the next ability needed for Social Empathy, macro self-other awareness [50].

**Macro self-other awareness/perspective-taking**

Similar to self-other awareness, macro self-other awareness requires the person to think about the situation from the other person's perspective but considering how the external factors such as race, age, gender, sexual orientation, etc. affect the person and their situation [50].

Perspective-taking can increase social connections and reduce stereotypes, as a result, when applied in a macro scale it can generate positive social engagement [58]. It provides the ability to understand people from different cultures and communities as well as their individual experience as a person from that group.

**The need for Social Empathy**

Empathy, both interpersonal and social, is needed in every society. When a society lacks empathy it leads to destructive behavior such as bullying, racism, abusive parenting, domestic violence, and sexual offending [59].

On the other hand, Social empathy can increase the understanding of social and economic inequalities in our society [60]. And "It can also serve as an educational model to help policy makers and members of society make decisions that are grounded in the experiences of those who will be impacted by the policy" [59].

When empathy is present across groups there is a greater inclusion of others and it can improve social relations by decreasing prejudice and stereotyping [61].

Overall, Social empathy is a necessary ability for society to reduce social inequalities and disparities, as well as promoting social justice within the people. This thesis objective is to study if social empathy towards DV victims can be generated in Japanese society.

## 2.4. Simulations and serious games

**Simulation**

In the last decades, the field of instructional technology has increased in research and development of interactive multimedia, especially in computer-based environments [62].

At the same time, several flaws have been discovered in the traditional education system of lecture, where an instructor educates a large audience regarding a specific topic in a short period of time. [63]. It is not to say that the traditional method is completely inefficient but researchers suggest that a combination of traditional and interactive tools such as a simulator might be the optimal solution to improve learning. [64] [65].

While a simulator is "the use of a device, or series of devices, to emulate a real situation." [64]. A simulation is "the artificial representation of a situation, environment, or event that provides an experience for the purposes of learning, evaluation, or research. In short, a simulation is another educational tool." [62].

A simulation as an educational tool is designed to teach someone about a specific

topic by observation and feedback generated by the simulation [62]. And by adding interactivity to the simulation, it improves the educational results [66].

Interactive Simulations respond to the cognitive learning theory. This theory states that the mental process of deep thinking and learning is a response to the different interactions implemented by technology that will increase the understanding and motivation of the users [67].

The efficacy of Interactive simulations as an educational tool on the majority of the studies claimed a slight advantage for the simulation compared to other teaching tools [68] [69] [70]. On the other hand, there have been cases where the simulation didn't generate a significant difference between traditional and interactive education. The differences in results can be attributed to the difference in testing methods as well as the differences in the simulations [69].

**Serious Games**

Extensive research on play in children and adults indicates that play is an important tool for learning and socializing [62]. When the action of play is met with a set of rules then it becomes a game [71]. Games have served as a sociological agent and have a long history in the development of cultures and society [62]. With technological progress, games were adapted into different mediums and as a result video games with different objectives and genres exist today.

One of the categories of video games is serious games. The main difference between a video game and a serious game is that serious games "have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement" [72].

In the last decade, the number of serious games has increased as the number of results in research and industry items grow each year [73]. Serious games have a range of different themes and objectives and each researcher proposes a different categorization [74] [73] [72].

Recent debate whether simulation and serious games should be categorized as two different concepts is starting to incline towards an overlap and even an integration between simulation and serious games in formal and informal learning contexts for adults [65]. On the other hand, this overlap and lack of formal differentiation between the two concepts complicates the analysis of the results,

making the interpretation of the studies nearly impossible [75].

## 2.5. Simulations: Empathy and DV

As previously discussed, simulation and serious games can be effective educational tools. While the range is wide regarding its topics, for this research the author focused on simulations specifically designed to tackle the topic of DV.

In cases when the simulation is targeted to DV perpetrators the objective tends to study rehabilitation methods by placing the perpetrator in VR simulations where they embodied the victim in scenarios of violence and analyze their responses [76] [77], and while the results have proven an increment in facial recognition of emotions [76] and reduced gender prejudice and generated more emotional response from participants [77]. It is necessary to note that the psychological profile of a DV perpetrator is significantly different from a non-perpetrator [?]. This must be considered for this research as the target of the thesis is general society and not DV perpetrators.

On the other hand, simulation that targets health workers as well as the police force focuses on practicing correct diagnosis and attention of DV cases [78] [79] [80] [81]. For instance, some simulations may be used as accompanying material in the curriculum of nurses [78] [79] [80]. These simulations have proven effective in improving the acquired knowledge and confidence in the students without jeopardizing the lives of any victim. In contrast, simulations designed to be used by the police force are used to increase their awareness about DV and to be alert towards possible DV cases [82]. These simulations' objective is to increase the report and detection rates of DV cases but due to the specialized content the simulation cannot be shared outside these groups.

There are other simulations designed for the general public [83] [84] [85]. These simulations' objective is to educate people about DV with different methods. For example, None in Three is a simulation/serious game focused on preventing DV in the Caribbean region [85]. In her Shoes on the other hand is a card game simulation developed in the United States to educate a broad range of community and professional groups about DV [84]. Both simulations cover the topic of DV from the violence that happens inside the relationship to the social and

cultural aspects that surround it. These simulations were designed to generate an attitude and behavior change in the participants, which is a similar objective of this thesis research. And even though these simulations were designed to be shared by the general public, its specific cultural elements create a cultural barrier between countries and regions. Therefore the application of an interactive simulation similar to the previously mentioned needs to be developed considering the socio-cultural Japanese context.

# Chapter 3
# Design

## 3.1. Interactive Simulation

Based on the literature review and related work research, an interactive simulation grounded on the experiences of victims that educates society can be an efficient solution to improve DV victims' situation in Japan and to test this thesis's research objectives.

The thesis's objectives are: (1) to research current attitudes and perceptions of DV and DV victims in Japanese society, (2) to increase awareness about DV as a social problem in order to improve the situation of DV victims, (3) to study if an interactive simulation that serves as an educational model can generate social empathy, and (4) to study if social empathy can modify people's perception of a social problem and their attitudes toward it.

### 3.1.1 Objective

The interactive simulation as an educational tool serves four main objectives:

- To educate society about DV as a social problem.

- To show the structural inequalities and disparities DV victims struggle with in the current Japanese society.

- To propose a model for how we can help and act in ways that are in the best interest of DV victims.

- To help possible victims identify their situations by comparing their experiences with the experiences presented in the simulation.

By educating Japanese society about DV as a social issue and not as a family issue [7], DV victims can benefit from the educational model and receive support from policymakers and members of society with knowledge that is grounded in the experiences of the victims.

### 3.1.2 Contents

The simulation tells the story of battered women's experiences with Domestic Violence. Their stories are divided into three main sections: (1) Experience with DV, (2) Institutions, and (3) Current situation.

1. The experience with DV: Tells the victim's personal experience with DV from the beginning of the violence. It details the experience from their perspective.

2. The institutions: In this section the victims narrate their experiences with different institutions such as Society, Police, Hospital, etc. This section also contains data regarding each institution to contextualize how victims are in high-risk of revictimization due to the lack of understanding about DV and from faulty policies.

3. The current situation: It tells the current state of the victims, while some may have gotten out of DV, others haven't. Thus this section explores their particular situation and thoughts about their future.

At the end of the simulation, the user gains a deeper understanding of the struggles DV victims suffer, not only from inside the relationship with the abuser but also from their experience when dealing with external factors.

### 3.1.3 Target user

The simulation is targeted toward the general population in Japan that is over the legal age regardless of their gender, relationship status, sexual orientation, or social status. Based on national surveys the majority of the population in Japan are aware of the concept of DV [86], considering that the perception of the problem keeps it as a private matter it is not necessary for the user to be an expert on the topic.

### 3.1.4 Design Process

For the development of this simulation the author received feedback from AWARE[1] to ensure a high level of fidelity and respect when sharing the stories of the victims.

The design process was divided into 3 phases: Research, Analysis, and Design.

**Research**

For the research process primary sources such as interviews, statistical data from government reports, and surveys were used to present the most accurate and current information available into the simulation.

The author designed a survey called "DV Experience Survey" to collect DV victim's experiences and opinions about DV through AWARE's network. The survey had a couple of iterations based on discussions with AWARE regarding wording and the inclusion of subjects to obtain a more accurate description of the victim's experiences and reduce the bias from the author.

The survey named DV Experience survey, named "DV 体験調査" which contains 99 items divided in five main categories: categorization (see Appendix A.1), general experience (see Appendix A.2), divorce process (see Appendix A.3), support during DV (see Appendix A.4), and current situation (see Appendix A.5). These categories were defined based on the items to create a correct logic flow for the respondents.

In the experience section, the questions are specific about their feelings and experience about DV. The items "relationship status when DV occurred", and "what happened to the situation due to DV" were used to define the flow based on the respondent's answer. In this case the respondent could go either to the divorce section or go directly to the support section (see Figure 3.1).

If the respondent reaches the divorce section, the items are about their divorce process and their perspective of it. Currently, Japan has four methods for divorce: agreement, mediation, decision by a family court, and litigation [87]. Each method has a different process, and the survey items were different depending on the method of divorce the victim went through (see Figure 3.2).

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1  Aware is a civic activity group aiming for a gender-equal society by eliminating DV in Japan. `https://aware-jp.com/`
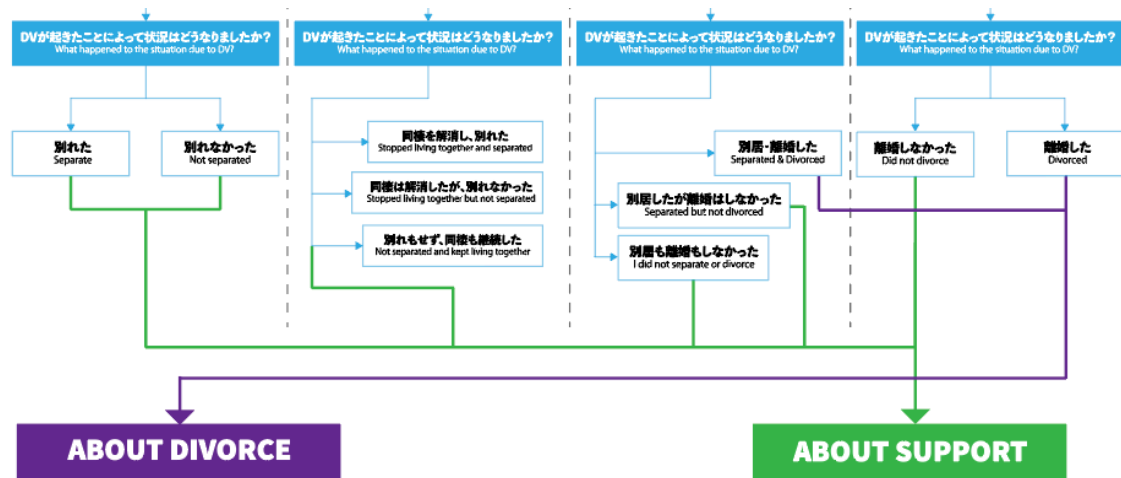
Figure 3.1  Logic flow of DV Experience section (source: DV Experience survey)

As for the system section, the questions are about their experiences with different institutions such as hospitals, police, family court, shelters, etc. This section first asks the respondent if they had an experience with that institution, if they reply yes, then they are asked in detail about that experience. If they reply no, then they can choose if they want to respond why they didn't use it before moving to the next question (see Figure 3.3).

Research data presented in the simulation to contextualize institutions was collected from government reports, interviews done by the author, and analysis
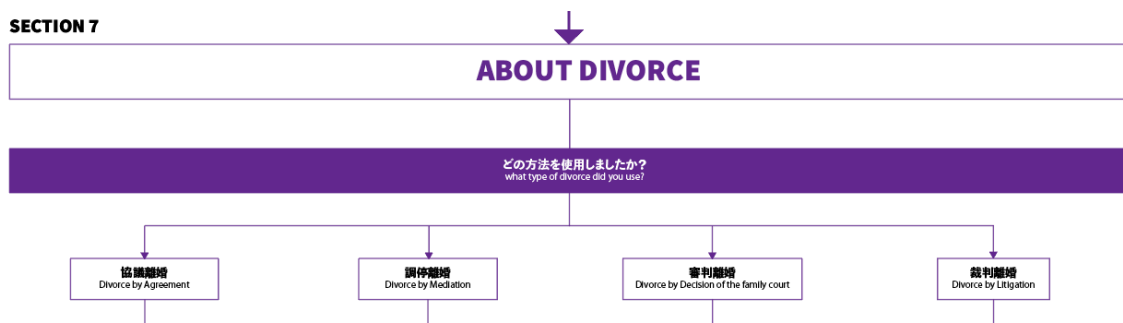


Figure 3.2  Logic flow of Divorce section (source: DV Experience survey)
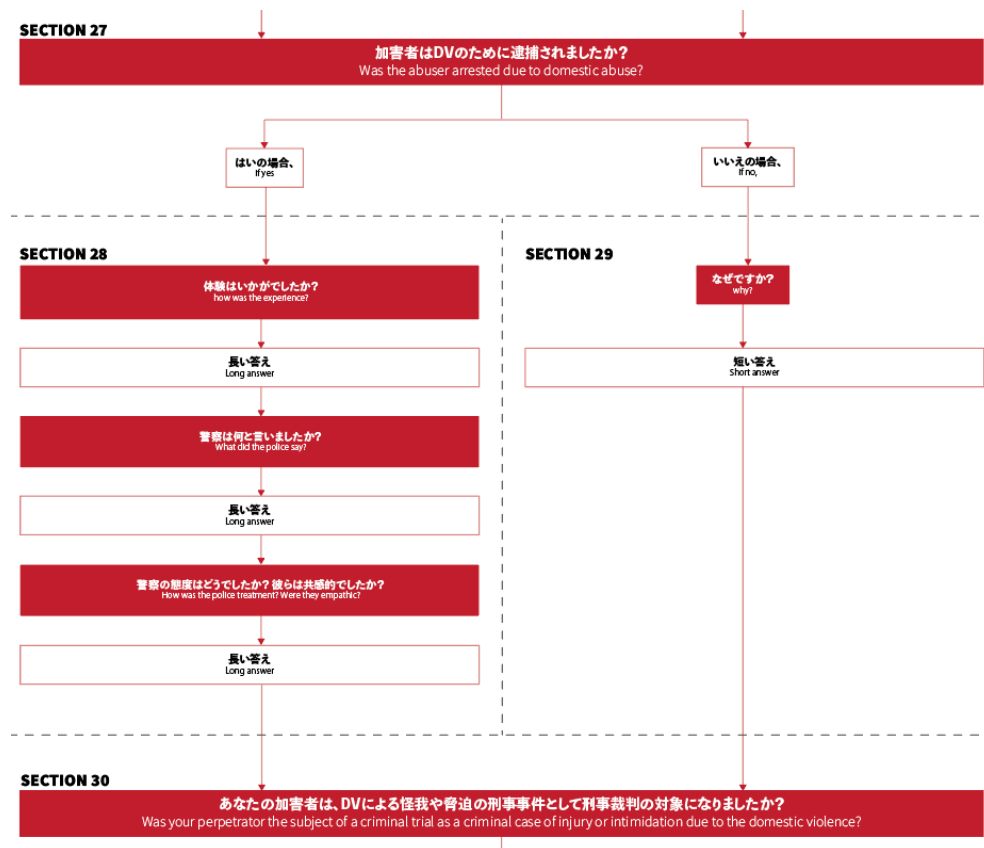
Figure 3.3  Logic flow of System section (source: DV Experience survey)

from the " DV survey experience " (see Appendix B.1).

**Analysis**

From the 37 collected responses, a qualitative analysis was conducted to identify the most common shared experiences among DV victims. This analysis was made in order to design profiles that factually represent the victims' experience without identifying any of the respondents and avoid perpetuating harmful stereotypes.

As a result of this analysis, several patterns were identified that represent the overall experience with DV such as:

- Age (both when DV started and current)

- Gender

- Types of violence

- Moment when DV started

- Relationship status during DV

- Job status during DV

- Number of children

- Physical and psychological effects from DV

- Whether they consider they share blame for the abuse

- Whether they wanted or not to separate from their partners

- Whether the relationship changed due to DV

- Whether they consider they got out of DV

- Current job and relationship status

From these patterns, five profiles were designed to represent the victims' experiences with DV (see Figure 3.4), if they received support (see Figure 3.5), and their interactions with the different institutions (see Figure 3.6). These profiles represent the proportionate percentage of the characteristics of the victims who responded to the survey.

Based on the profiles, five different scripts were developed to tell the story from a first-person perspective, dividing the story into the three main sections of the simulation.

| EXPERIENCE | | PROFILE 1 | | PROFILE 2 | | PROFILE 3 | | PROFILE 4 | | PROFILE 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TYPE OF VIOLENCE | | 心理的 / PSYCHOLOGICAL 社会的 / SOCIAL<br>身体的 / PHYSICAL 性的 / SEXUAL | | 心理的 / PSYCHOLOGICAL 性的 / SEXUAL<br>経済的 / ECONOMIC 身体的 / PHYSICAL | | 心理的 / PSYCHOLOGICAL 性的 / SEXUAL<br>経済的 / ECONOMIC 身体的 / PHYSICAL | | 心理的 / PSYCHOLOGICAL 身体的 / PHYSICAL<br>経済的 / ECONOMIC<br>こどもへの暴力 / VIOLENCE AGAINST CHILDREN | | 心理的 / PSYCHOLOGICAL<br>経済的 / ECONOMIC | |
| AGE (current) | AGE (during DV) | 30s | 20s | 60s | 20s~ | 40s | 20s~ | 30s | 30s | 40s | 20s-30s |
| START OF DV | | Date DV | | Before Marriage | | After marriage/<br>Moving-in together | | During pregnancy | | After Birth | |
| RELATIONSHIP STATUS (during DV) | | They were not married/ living together<br>婚姻関係になかった／同棲もしていた | | They were married/ living together.<br>婚姻関係にあった／同居していた | | They were married/ living together.<br>婚姻関係にあった／同居していた | | They were married/ living together.<br>婚姻関係にあった／同居していた | | They were married/ living together.<br>婚姻関係にあった／同居していた | |
| JOB STATUS (during DV) | | Full-time<br>常勤 | | Housewife<br>専業主婦 | | Full-time<br>常勤 | | Part-time job<br>アルバイト | | Part-time job<br>アルバイト | |
| CHILDREN | | NO | | 1 | | NO | | 2 | | 2 | |
| STRESS DUE TO DV | | YES | | YES | | YES | | YES | | YES | |
| SHARING THE BLAME (of DV) | | YES | | NO | | YES | | NO | | UNKNOWN | |
| ABOUT SEPARATION | | I wanted to leave.<br>別れたかった | | I wanted to leave.<br>別れたかった | | I didn't want to break up<br>別れたくなかった | | I wanted to leave.<br>別れたかった | | I wanted to leave.<br>別れたかった | |
| RELATIONSHIP CHANGE (current) | | YES | | YES | | NO | | YES | | NO | |
| GETTING OUT OF DV | | NO | | YES | | NO | | NO | | YES | |
| RELATIONSHIP STATUS (current) | | Single<br>独身 | | Separated and divorced<br>別居・離婚した | | Married/ living together.<br>婚姻関係にあった／同居していた | | Separated, but not divorced<br>別居したが離婚はしなかった | | Married/ living together.<br>婚姻関係にあった／同居していた | |
| JOB STATUS (current) | | Full-time<br>常勤 | | Full-time<br>常勤 | | Part-time job<br>アルバイト | | Flex system<br>フレックス制や時短での勤務 | | Housewife<br>専業主婦 | |

Figure 3.4  Profiles based on the Experience

| SUPPORT INNER CIRCLE | PROFILE 1 | PROFILE 2 | PROFILE 3 | PROFILE 4 | PROFILE 5 |
|---|---|---|---|---|---|
| TALK WITH SOMEONE | YES | YES | YES | YES | YES |
| WAS IT HELPFUL? | NO | YES | NO* | YES | YES |
| LETTING THEM KNOW (embarrased?) | YES | NO* | YES | NO* | YES |
| INFO ABOUT HELP OR SUPPORT (Knowing where get the info) | NO | YES | NO | YES | YES |
| ASK FOR HELP | NO | YES<br>negative experience | YES<br>positive experience | YES | YES<br>positive experience |
| GETTING OUT OF DV | NO | YES | NO | NO | YES |
| SUPPORT FROM INNER CIRCLE (Family, friends, neighbors) | — | YES<br>positive experience | — | YES<br>positive experience | NO |
| RECOVERY PROCESS | — | YES | — | YES | YES |

Figure 3.5  Profiles based on their Support system

| INSTITUTIONS | PROFILE 1 | PROFILE 2 | PROFILE 3 | PROFILE 4 | PROFILE 5 |
|---|---|---|---|---|---|
| HOSPITAL | NO | NO | YES | YES | NO |
| POLICE | | | | | |
| REPORT | NO | YES | NO | YES | NO |
| PROTECTION ORDER | NO | NO | NO | NO | NO |
| ARREST | NO | NO | NO | NO | NO |
| SHELTER | NO | NO | NO | NO | NO |
| FAMILY COURT | | | | | |
| DIVORCE | NO | NO | NO | Divorce by litigation<br>裁判離婚 | NO |
| CHILD SERVICES | NO | NO | NO | YES | NO |
| NPO/GOVERNMENT<br>(Consultation) | NO | YES | NO | YES | YES |
| COURT JUSTICE<br>(Criminal case) | NO | NO | NO | NO | NO |

Figure 3.6  Profiles based on their experience with the Institutions

**Design**

After the profiles and scripts were discussed with AWARE, the next step was to design the elements for the simulation and incorporate audio and interactivity to increase the engagement of the users.

## 3.2.  Design Elements

### 3.2.1  Naming

The simulation's name is based on the concept of the trauma generated in the victims by DV [9].  As well as to represent the sections in which their story is divided and told in the simulation.

The name 「ツギ」 (tsugi), is a wordplay using two Japanese homophones. The first is 継ぎ (tsugi) which means to patch.  This word is part of the concept of

Kintsugi[2]. This is to communicate the idea that the trauma victims go through can be healed and doesn't last forever [37]

The second is 次 (tsugi) which means next. To represent the process of recovery that victims go through which consists of multiple stages [39] and with proper help and support they will be able to get out of that situation and continue to live a life free of violence.

### 3.2.2 Visuals

Any simulation should imitate to a certain degree reality but is not necessary to duplicate it exactly. This since " the goal is always to create the best learning, not necessarily the best simulation " [89]

For this simulation, one key element is the representation of trauma and its effects on the victim. Due to the nature of the topic, reducing unwanted bias and secondary traumatic stress in the target user [90] was one of the main concerns when designing the visuals for simulation, as a result the author decided for the visuals of the simulation to use low-poly 3D models.

A low-poly 3D model is a polygon mesh in 3D computer graphics that has a relatively small number of polygons. This type of model optimizes render time and allows for an abstract representation of an object [91].

As for the user perspective when interacting with the simulation, one study suggests that a third-person perspective is preferable for simulations and training applications in which the correct assessment of the affective properties of an environment is essential [92]. In another study which compared first-person perspective (1PP) and third-person perspective(3PP), to find which was more effective in communicating a stressful situation, the study concluded that 3PP was effective in generating an emotional response even though the 1PP users showed a higher emotional response. But this study excluded participants with a DV history specifically [77], therefore it is possible that a person with a DV history may be triggered by a 1PP simulation.

Based on the research, the author decided for the simulation to have a 3PP

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2 Means "golden joinery" in Japanese, and it refers to the art of fixing broken ceramics with a lacquer resin made to look like solid gold [88].

in order to communicate the emotions of the victim while avoiding triggering unwanted reactions and secondary traumatic stress to the users.

Some of the 3D low-poly models used in the simulation were bought and edited to adapt them to the socio-cultural context of Japanese society. In particular the 3D models of the victims were adapted to reflect female fashion in Japan (Figure 3.7).



Figure 3.7  3D low-poly Profiles models

The model used to represent the Justice System (Figure 3.9) was based on a picture of a Japanese Court for Domestic-relations conciliation proceedings (Figure 3.8), which are used in domestic relation cases.

Figure 3.8    Photo Reference of a    Figure 3.9  3D Model Justice system
Japanese civil court (source:Courts in
Japan [1])

The simulation uses audiovisuals to generate an affective response from the
user by following the cognitive theory of multimedia learning which states that
the processing of the information by the brain is performed in two channels after
receiving the auditory and visual information that appears in the working memory
as verbal and pictorial information models [93].

The trauma and abuse in the simulation are represented by cracks that appear
in the body of the victim during the first section (see Figure 3.10). The simulation
also uses sound and light effects to increase the affective mentalizing process from
the user.



Figure 3.10  Visual representation of trauma in the simulation

For sound, professional voice actresses were hired to do a voice-over for the entire simulation. Other sound effects were also added during the experience section. And lights are placed over the 3D models which change the perceived color of the models depending on the emotions the victim is feeling in that part of the simulation.

### 3.2.3 Color Palette

In 2001, the Asian women's center received the purple ribbon as a gift from the National DV Prevention Coalition (NCADV) in the United States. As a result the Asian women's center brought the purple ribbon into Japan and used it as the symbol for eliminating violence against women, specifically DV [94].

To increase awareness about the purple ribbon as a symbol of the fight against DV in Japan the simulation uses the color purple as the principal color. The secondary color is white, due to the neutrality it represents and to have a high level of contrast with the chosen shade of purple (see Figure 3.11). The color is present on the text and each section screen of the simulation as well as a background color in the main page.
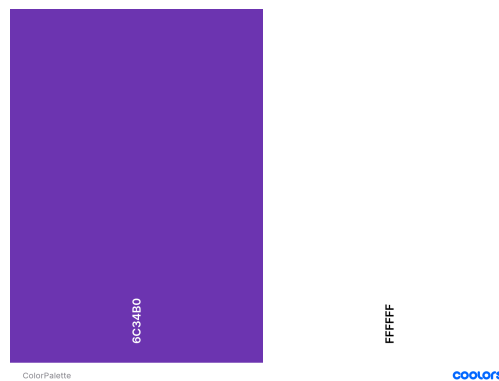


Figure 3.11  Color Palette for the simulation

For the representation of emotions, based on color theory research [95], the most associated colors for the basic emotions [96] were selected to represent the emotions victims go through with their experience with DV such as anger, sadness, and happiness (Table 3.1)

| Emotion | Color |
|---------|-------|
| Happiness | Yellow |
| Anger | Red |
| Sadness | Blue |
| Anxious | Purple |

Table 3.1  Color and emotions association used in the simulation

### 3.2.4  Typography

Since the target of the simulation is Japanese society, the simulation's language is Japanese. But Japanese web fonts have bad performance due to the font weight [97], therefore the simulation uses the default font of the user's browser allowing for the simulation to run smoothly and perform better regardless of the operating system.

The interactive simulation uses Hiragino Mincho Pro (see Figure 3.12) for the headers and for the Logo. As for the body text Hiragino Kaku Gothic Pro (see Figure 3.13. Both fonts are the default fonts in Mac Safari and Mac IOS. In Windows the used fonts are the default in serif and sans-serif versions for Japanese text.

Figure 3.12  Hiragino Mincho Pro Font    Figure 3.13  Hiragino Kaku Gothic Pro Font

### 3.2.5  User Experience and User Interface - Interactive Simulation

The simulation is a web application that can be accessed through a public link to facilitate its usage for the participants and target users.

The simulation is divided in three sections as a study has demonstrated the positive effects of segmentation as an instructional method [98]. The simulation uses a point-and-click interface and the dynamic between the user and the simulation consists of the user selecting a profile, seeing the first section, choosing the order of the story in the second section, and continuing to the final section after all parts of the second section are visited.

The user is first presented with a haiku written by one of the victims that describes their feelings about DV (see Figure 3.14).



Figure 3.14  Welcome Screen

The user is then presented with a selection screen that states the instructions for the Simulation(see Figure 3.15). For the final version, a selection screen will appear with the different profiles (see Figure 3.16).

Figure 3.15  Experiment screen
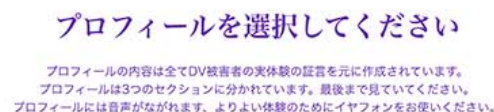
Figure 3.16  Final version

Once the simulation begins, the user will see the model representing the victim appear at the center of the screen while the user listens to the victim's experience with DV. At the same time the script appears floating on the left side of the screen. The script acts as subtitles on the screen to heighten the audiovisual experience. The script will scroll at a similar rhythm to the narration to make it easier for the listener to understand what part of the script is currently being said. Individual paragraphs of the script will also disappear once the narration of them ends. This is to allow the user to focus on the most current information (see Figure 3.17).



Figure 3.17  Experience section screen

At the end of the experience section, the different fragments of the model spread throughout the screen (see Figure3.18) and the institutions screen will appear.

This section is called "Environment" to reduce bias from the users. The user needs to click on the button to continue with the interactive simulation(see Figure 3.19).



Figure 3.18    Animation between sections
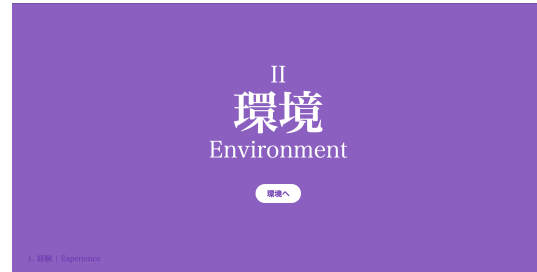


Figure 3.19  Institutions section

The user is then presented with the different institutions that the victims can interact with one way or another, such as the police, the justice system, government aids, shelters, family or friends, etc. Each represented by 3D models. (see figure) This section has the highest amount of interaction in the simulation as it allows the user to select the order of the story and can move the camera to see the 3D models from different perspectives (see Figure 3.20)
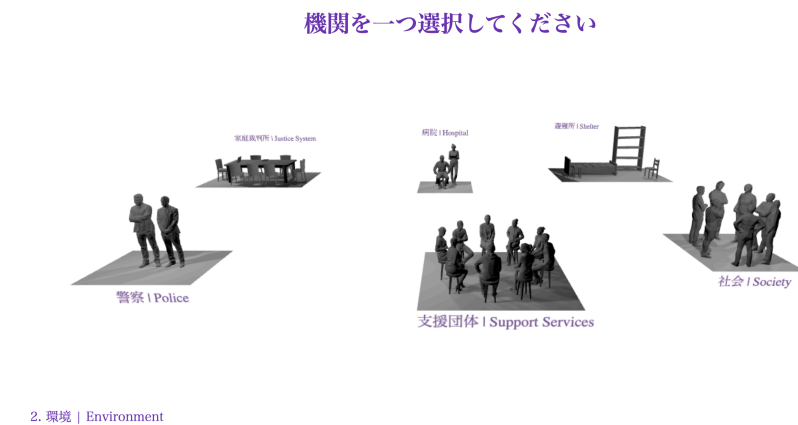


Figure 3.20  Institutions selection screen

Once the user has selected one of the institutions, a 3D model that represents a scene of the experience is zoomed into and the user starts listening to the

experience of the victim with that institution.

By using camera movements, color, and sound, the audiovisual narrative is enhanced to express the mental state of the victims and whether the experience was positive or negative (see Figure 3.21).



Figure 3.21   3D model of the Support system representation in the interactive simulation

When the narration for an institution finishes, an overlay screen appears with the context data of that institution (see Figure 3.22). This information helps the user to understand the social context and promotes contextual understanding of the systemic barriers regarding said institution.

Figure 3.22  Overlay screen with context data

After the user reads the context data the user will return to the selection screen. Then the selected institution disappears and the user can select a different institution. The user will need to select every institution available in order to complete the profile (see Figure 3.23)

After viewing all the available institutions in the selected profile, the user will advance to the final section, current situation (see Figure 3.24).. In the current situation section the simulation behaves similarly as in the experience section.
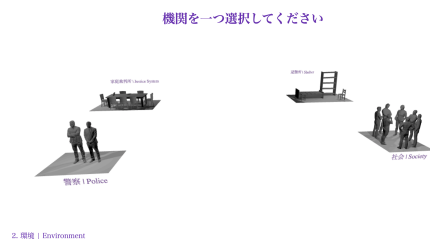


Figure 3.23  Selection screen when two institutions have been selected



Figure 3.24  Current situation screen

For this section, depending on whether the current situation of the victim is positive or negative, the model will have fewer cracks or the same amount as before as a way to reinforce the concept of trauma and abuse and how victims might overcome it or not depending on the help they receive.(see Figure 3.25).

ただ、子供の養育や離婚のこと
で夫と連絡を取り合う必要があ
るとき、

3. 現在状況 | Current Situation
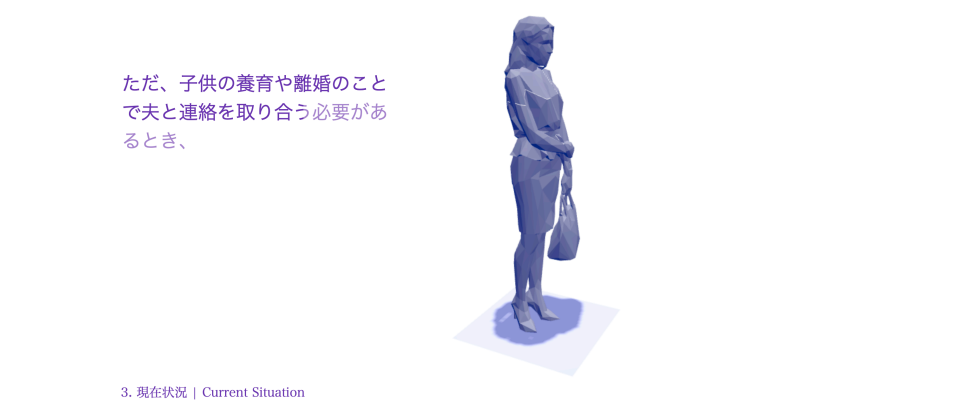
Figure 3.25  Representation of the current situation of the victim

After completing the profile, for the experiment set up the user was sent to a survey (see Figure 3.26). For the final version the users will see the contact form of the NPO " AWARE " in case they need help or want to provide funding to help the victims.

Share buttons in social media will also be available for the simulation and a restart button will appear for the users who want to see other profiles (see Figure 3.27).
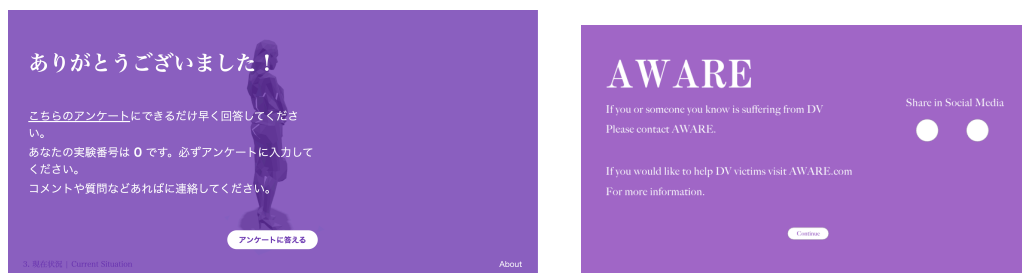




Figure 3.27  Final Contact Screen

Figure 3.26  Experiment Contact screen

# Chapter 4
# Validation

## 4.1. Experiment

The experiment consisted of four sections: 1) empathy assessment, 2) group division conditions, 3) interaction with the information, and 4) comprehension assessment

To maintain anonymity during the experiment, the participants were assigned at random a three digits id which they input when they submitted the experiment's surveys. This number also ensures that when analyzing the information, pre-existing biases from the author did not affect the results.

### Empathy assessment

A number of studies have proven that high levels of social empathy are accompanied by high levels of interpersonal empathy and that low levels of social empathy are accompanied by low levels of interpersonal empathy [56] [99] [59]. Therefore, to be able to compare the results in an equal manner it was necessary to identify people who have higher levels of empathy (both interpersonal and social) from those who don't have them. One of this experiment's hypothesis is that highly empathetic people will respond more positively to the simulation than those who aren't as empathetic. This differentiation was also made to avoid misinterpreting the high scores that might be a result from a high empathy rather than a result of the simulation.

For this experiment, the participants answered a Japanese translation of the Social Empathy Index (SEI) conducted using a Google form link (Figure 4.1) where they could answer the survey at their own pace. The only limitation was a specific due date. The survey was presented as "A human relationship survey"

to reduce bias in the participants when answering the questionnaire and to obtain the most honest answers.



Figure 4.1  Human Relations Survey

## Group division conditions

After all the participants answered the SEI, the results were analyzed and based on the median of the responses the participants were divided into two main groups: higher and lower than the median score in the SEI.

At the beginning of the experiment there were 18 participants who responded to the SEI and were divided into three main groups, one for each version of the experiment: control, experimental 1, and experimental 2 (see Figure 4.2). But for the second part of the experiment one of the male participants declined to continue with the experiment and as a result a female participant was added to maintain the same number of participants throughout the experiment.

Each group had six participants: three with an SEI score higher than the median and three with a score lower than the median. This was done to reduce bias based on the empathy levels when measuring the effectiveness of the simulation. The control and experimental 1 group followed the previous logic, but for the experimental 2 group an exception had to be made since this group had the male
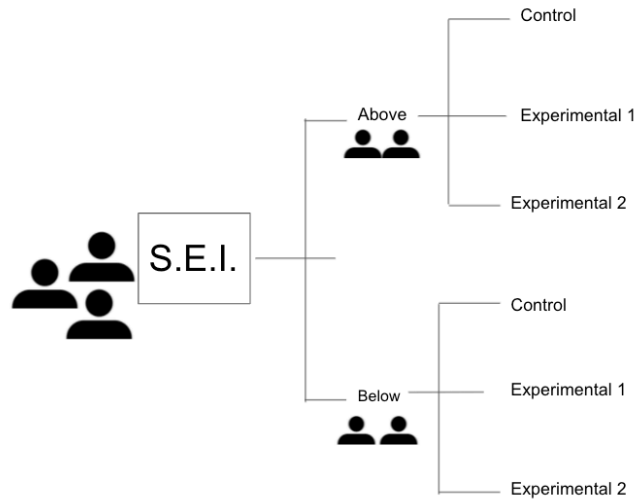
Figure 4.2  Experiment Group division diagram

participant that declined to continue. The experimental 2 group consisted of four people, including the female who substituted the male participant, with higher than the median scores and two lower than the median scores.

Other variables that were taken into consideration when dividing the participants were gender and age. Only three participants were in their 40s, while most other participants were in their 20s. Therefore, to reduce bias based on age, each participant in their 40s was assigned to a different experimental group.

As for gender, six of the participants were female. When doing the preliminary division of participants, only five were female, as a result the two experimental groups had two women and the control group had only one. But as mentioned before one female participant was added to keep the number of participants equal in each group. By replacing the withdrawn participant, the experimental group 2 had three women, experimental group 1 had two women, and the control group had one woman.

## 4.1.1  Interaction with the information

To measure each method and its effectiveness in communicating DV as a social problem and also to understand it from a social empathy perspective, three iter-

ations of the information were tested by the participants.

The participants were divided into three groups , each group consisted of an equal number of people with above and below median scores to reduce empathy biases as well as an equal distribution of gender and age.

After being placed in one of the three groups, they interacted with the profile of the victim. The control group received a PDF document; the experimental group 1 and 2 received a link to a web application that hosted a different version of the simulation.

To reduce bias and external pressure from the author, the participants interacted with the information in a space of their choice and at their own pace without the author's interference. The only limitation was that the participants had to respond to the comprehension assessment before a specific date after interacting with the information.

### 4.1.2  Comprehension assessment

The comprehension assessment is a questionnaire developed by the author to measure the level of understanding of the participants after interacting with the information about the disparities and revictimization that DV victims suffer in Japanese society.

It was translated by a native Japanese speaker and hosted in an online google form and had the same instructions as the simulation, participants were free to respond to it whenever they wanted as long as it was before the set deadline and after interacting with the information.

### 4.1.3  Experiment participants

The participants of the experiment share two main characteristics: 1) They were born and raised in Japan and 2) They are between 20 and 50 years old.

For this experiment 19 participants were recruited, of those 19 only one didn't complete the experiment, the remaining 18 did. (see figure, table with participants characteristics) The participants who responded to the two surveys and interacted with the information counted towards complete participation in the experiment (see Table 4.1).

Table 4.1  Experiment participants

| No. | Age | Gender | Nationality | Participation Status |
|-----|-----|--------|-------------|----------------------|
| 1 | 20s | Male | Japanese | Complete |
| 2 | 30s | Male | Japanese | Complete |
| 3 | 20s | Male | Japanese | Complete |
| 4 | 40s | Male | Japanese | Complete |
| 5 | 40s | Female | Japanese | Complete |
| 6 | 20s | Male | Japanese | Complete |
| 7 | 20s | Female | Japanese | Complete |
| 8 | 20s | Female | Japanese | Complete |
| 9 | 20s | Female | Japanese | Complete |
| 10 | 40s | Male | Japanese | Complete |
| 11 | 20s | Male | Japanese | Complete |
| 12 | 20s | Female | Japanese | Complete |
| 13 | 20s | Male | Japanese | Complete |
| 14 | 20s | Female | Japanese | Complete |
| 15 | 20s | Male | Japanese | Complete |
| 16 | 20s | Male | Japanese | Complete |
| 17 | 20s | Female | Japanese | Complete |
| 18 | 20s | Male | Japanese | Complete |
| 19 | 20s | Male | Japanese | Incomplete |

| Scale | Options | オプション |
|---|---|---|
| 1 | Never | 0: 全くない（全く同意しない） |
| 2 | Rarely | 20: めったにない |
| 3 | Sometimes | 40: ときどきある |
| 4 | Frequently | 60: よくある |
| 5 | Almost always | 80: ほとんど |
| 6 | Always | 100: 常に（強く同意する） |

Table 4.2  Likert Scale for Social Empathy Index.

### 4.1.4  Social Empathy Index (SEI)

As mentioned in the Literature review chapter, empathy is a complex ability that is divided into two main processes, affective and cognitive empathy. And when adding macro self-other awareness/perspective taking and understanding of social context is when a person can develop social empathy [50].

The SEI is a 40 item instrument to measure social empathy developed by Dr. Segal [57]. It was developed based on the Empathy Assessment Index (EAI) which measures interpersonal empathy by adding new elements that measure social empathy.

The EAI was also developed by Dr. Segal reflecting the current measures of neuroscience research linked to empathy [100]. The EAI was developed after two years of testing and improvements in their psychometric properties [99] [101].

The EAI and SEI measure the seven components of empathy which are: affective response, affective mentalizing, self-other awareness, micro perspective-taking, emotion regulation, contextual understanding, and macro perspective-taking.

The SEI can be applied either online or using a printed version of the instrument with the responses presented in a six point Likert scale (see Table 4.2), from always to never, with exploratory and confirmatory factor analyses [50].

For the experiment the questions were translated into Japanese by a native speaker to ensure a high level of fidelity with the original language while communicating the idea correctly (see Appendix C.1).

### 4.1.5  Design Iterations

To analyze the effectiveness of the design to communicate correctly the information based on how it is presented, three iterations of the simulation were designed, one version was the control group and two were the experimental versions. The three versions contain the same information, but each version was presented in a different format and method.

**Control**

The control version consisted of a PDF file that contained the script of one of the profiles for the simulation presented in text format (See Appendix D.1).

This version was the first design version developed for all the profiles. It contains the script outlined during the design process and presents the situation of the victim from a first person perspective.

The objective of this version is to study the effectiveness in communicating DV from a social empathy perspective by presenting the information in one of the more common methods of obtaining information people have which are internet searches and official reports [50].

**Experimental 1**

The experimental 1 version is a web application that showcases the information supported by voice-over and floating text (see Figure 4.3).

This was the first iteration of the simulation in the design process. After developing the scripts, the audio was recorded as well as designing the flow logic and the UI for the simulation in the web application.

This version is the first one who divides the script into three separated sections for the user. In each section the voice-over and floating text appears in the middle of the screen for the information presented to be clear and easy to understand for the user. And in the second section the user can decide the order of the story but needs to visit each section to advance to the last section (see Figure 4.4)

For this iteration, the experiment's objective was to study if there is an improvement in the understanding of the information when adding audio and descriptive text when compared to the control group.

しかし月日が経つにつれ、謝ることもなくなり、暴力が増えて
いきました。

1. 経験 | Experience

Figure 4.3  Experimental 1 Interface

機関を一つ選択してください

病院 | Hospital

警察 | Police

社会 | Society

支援団体 | Support Services

避難所 | Shelter

家庭裁判所 | Justice System

2. 環境 | Environment

Figure 4.4  Experimental 1 Selection Screen

## Experimental 2

The experimental 2 version is a multimedia interactive simulation. In this version, the users have full access to the 3D models, voice-over, sound effects, lights effects, and floating text.

This version was the last designed iteration and is the version that has the most differences and added elements for the user(see Figure 4.5).

For the experiment, the objective was to study if there is an improvement in

the understanding of the information when adding visuals as well as sound and visuals effects compared to the previous web application.



私の家族や友人は、いくつもの
あざに気づき、心配してくれま
した。

1. 経験 | Experience

Figure 4.5  Experimental version 02

## 4.1.6  Comprehension Assessment

The comprehension assessment is a questionnaire developed by the author to measure the level of understanding and the contextual understanding and perspective-taking from a social empathy perspective by the participants (see Appendix E.1).

The questionnaire consists of 28 items that cover the three main sections of the simulation and which were categorized by the type of response and analysis in: qualitative, quantitative, and public policy opinion. The majority of the quantitative and qualitative items are connected as follow-up questions.

Out of the 28 items, 22 were designed to measure components of empathy. Out of these 22, 11 items were multiple choice questions that are measured as quantitative items. The quantitative items are: Q1, Q5, Q7, Q10, Q12, Q15, Q19, Q22, Q24, Q25, and Q28. The other 11 items were short answer questions, most of these items were follow-up items to the quantitative items. These items are: Q2, Q3, Q4, Q6, Q8, Q11, Q13, Q16, Q20, Q23, and Q26.

The grading system for the comprehension assessment is as following:

- Quantitative items: All items have a value of one point when answered correctly. There are two exceptions, Q1 which is worth 2.5 points and Q28 is worth 1.5 points because they have multiple correct responses.

- Qualitative items: All items have a value range between 0 and 2.

The two points range value for the qualitative items were determined as a counterbalance to a possible incorrect response in a quantitative item, meaning if the response of the participant demonstrates a social empathy perspective to the information included in the simulation then it was a correct response.

For example, in the simulation, the police were involved with the victim twice and it was a bad experience overall. But if one participant selected "good experience" from the options in the quantitative question and their argument in the follow up qualitative question shows a contextual understanding of the situation and has a socially empathic argument then the participant gets two points.

In the case when a participant selects the correct option from a quantitative question and their response to the qualitative question reflects social empathy, then that participant obtains three points.

The remaining six items are about public policy. These items ask the participants about their opinions regarding strategies to eliminate DV in Japan. Since these items are opinion-based, they do not count as points for the final score of the comprehension assessment.

When scoring the 22 items, the highest score of the assessment is 35. The closer the participant's score is to 35, the higher the participant's perception of DV as a social issue and their increment of social empathy towards the victims is.

# Chapter 5

# Results and Discussion

## 5.1.  Results

The following hypotheses were tested:

- Participants with self-reported high levels of interpersonal empathy also present high levels of social empathy when tested using the SEI.

- A multimedia interactive simulation is the most effective iteration regarding educating the participants about DV being a social issue, regardless of their social empathy levels.

- Participants with high levels of social empathy can understand that DV is a social problem when provided with the information that supports the claim better than the participants with low levels of social empathy, regardless of the medium of interaction with the information.

- Participants can learn about DV as a social problem when provided with educational materials.

### 5.1.1  Social Empathy Index (SEI)

For the experiment 19 participants responded to the SEI in Japanese, a self-report instrument to measure their interpersonal and social empathy levels. The higher the score, the higher the level of self-reported interpersonal and social empathy [50].

   Even though the SEI is an instrument that measures social empathy, the items can be divided into interpersonal and social items. With that division, it is possible to see the levels of interpersonal and social empathy of each participant.

| Median | | | | Average | | |
|---|---|---|---|---|---|---|
| IE | SE | SEI | | IE | SE | SEI |
| 90 | 91 | 178 | | 88 | 90 | 178 |

Table 5.1  Median and Average of SEI scores

The IE column shows the sum of the items that measure Interpersonal empathy, the SE column is the sum of the social empathy items, and the SEI column is the sum of all the items of the instrument (see Figure 5.1).

| No. | Age | Gender | IE | SE | SEI | Group |
|---|---|---|---|---|---|---|
| 1 | 20 代 | Male | 44 | 86 | 130 | C |
| 2 | 30 代 | Male | 90 | 80 | 170 | C |
| 3 | 20 代 | Male | 61 | 67 | 128 | E2 |
| 4 | 40 代 | Male | 84 | 92 | 176 | C |
| 5 | 40 代 | Female | 104 | 97 | 202 | E2 |
| 6 | 20 代 | Male | 98 | 88 | 186 | E1 |
| 7 | 20 代 | Male | 87 | 76 | 163 | C |
| 8 | 20 代 | Female | 90 | 84 | 174 | E2 |
| 9 | 20 代 | Female | 75 | 90 | 165 | E1 |
| 10 | 40 代 | Male | 80 | 83 | 163 | E1 |
| 11 | 20 代 | Male | 96 | 103 | 199 | E2 |
| 12 | 20 代 | Female | 84 | 96 | 180 | E2 |
| 13 | 20 代 | Male | 73 | 76 | 149 | E1 |
| 14 | 20 代 | Female | 106 | 98 | 204 | E1 |
| 15 | 20 代 | Male | 111 | 101 | 212 | C |
| 16 | 20 代 | Male | 93 | 99 | 192 | E1 |
| 17 | 20 代 | Female | 105 | 108 | 213 | C |
| 18 | 20 代 | Male | 95 | 98 | 193 | E2 |

Figure 5.1  Results of SEI

The median and the average were calculated based on the first 18 participants in order to separate the control and experiment groups (see Table 5.1. When a participant declined to continue the new participant grade was not taken into consideration for the grouping and only replaced the participant who declined participation in the respective group for the experiment.

Out of the participants who did complete all the sections of the experiment: 10 were above the median of SEI (marked in green), and 8 were below the median

(marked in red) (see Figure 5.1). Out of the 6 female participants, four self-report above the median. Meanwhile, in the male participants, half report above the median and half below the median.

There is a cultural perception that women are more empathic than men, but data analyses have shown no significant gender differences when reporting empathy [102] [103]. And while these results might support that claim, the pool of participants is too small to consider it significant for such a claim.

As for the eight participants who had a low SEI score, five participants self-reported a higher level of social empathy when compared to their interpersonal empathy items. And in the case of the 10 participants who had a high SEI score, five participants also had a higher level of social empathy when compared to their interpersonal empathy items (see Figure 5.2).
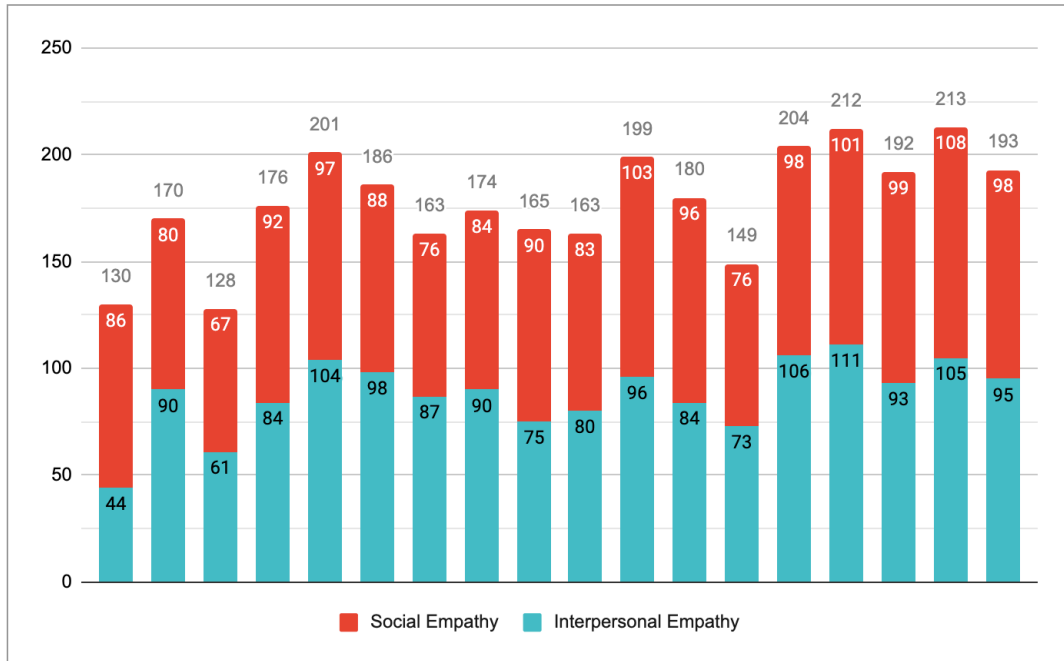


Figure 5.2  Analysis of SEI

These results support the hypothesis that people with high levels of interpersonal empathy also have a high level of social empathy to an extent since only half of the total of participants satisfy the criteria. The rest of the participants who reported a higher level of social empathy than interpersonal empathy can

56

be linked to the type of society that Japan falls into if analyzed under the social theory of collectivism and individualism [104].

## 5.1.2  Design iterations results

Based on the results of the comprehension assessment, an increment of the final scores can be seen on each iteration (see Figure~reffig:avg$_o verall$).
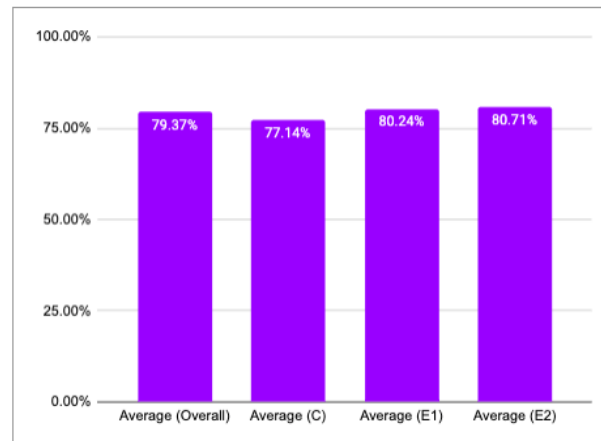


Figure 5.3  Average score per version

The participants who tested the first iteration of the design had an average score on the assessment comprehension of 77.14% and the median score was 80%. Of the three groups the first version had the lowest score of the three. These results show that the information provided was presented clearly and communicated DV as a social issue.

As for the experimental group 1, the average score for the participants was 80.24% and their median score was 82.86% which is an increment when compared to the control group. Experimental group 2 participants had an average score of 80.71% and a median score of 81.43% which was the highest average score from all the participants.

The experimental groups 1 and 2 interacted with a web application. Tracking analytics placed on the website allowed the author to track the experience of the participants and analyze their engagement with the website.

The analytics tool used was Google Analytics, this tool measures engagement when the tracked website is on the foreground or the tracked website had focus on the browser.

The experimental group 1 had a less interactive application with no visuals, their average engagement time was 5 mins 18s. Meanwhile experimental group 2 had the full version of the interactive simulation, which means they had more interactive options and visuals. Their average engagement time was 9mins 1s (see Figure 5.4).
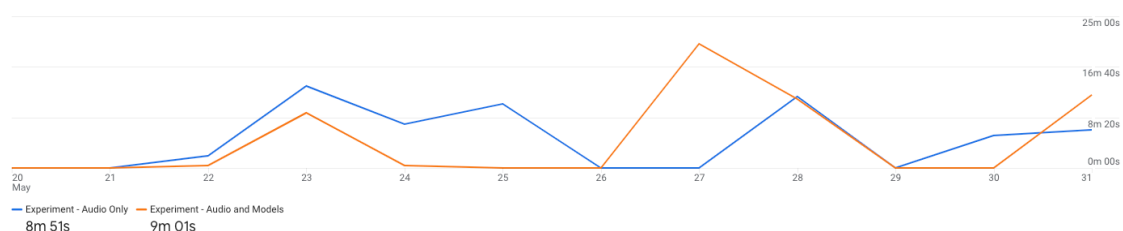


Figure 5.4  Average engagement time per session

When comparing the engagement levels of the experimental group 1 and experimental group 2 iteration the main differences in engagement exist in the second section of the simulation. In this section the 3D space as well as the models increase the attention levels (see Figure 5.5) (see Figure 5.6).

As for the information and how it was presented. For example Q3 measures empathy elements of self-other awareness and affective mentalizing by asking the participant to 'list some of the emotions the victim had during her experience with DV'. 95.8% of participants were able to list one or more emotions the script specifically mentioned. Some of them also showed high levels of interpersonal empathy towards the victim and were able to describe her situation from a personal perspective:

> 自分を愛しているはずの人が自分に暴力をふるうことに対するショックな気持ち、子供も被害にあわないか心配な気持ち、逃げ出せない恐怖など
> "*Feelings of shock that someone who is supposed to love you is violent*
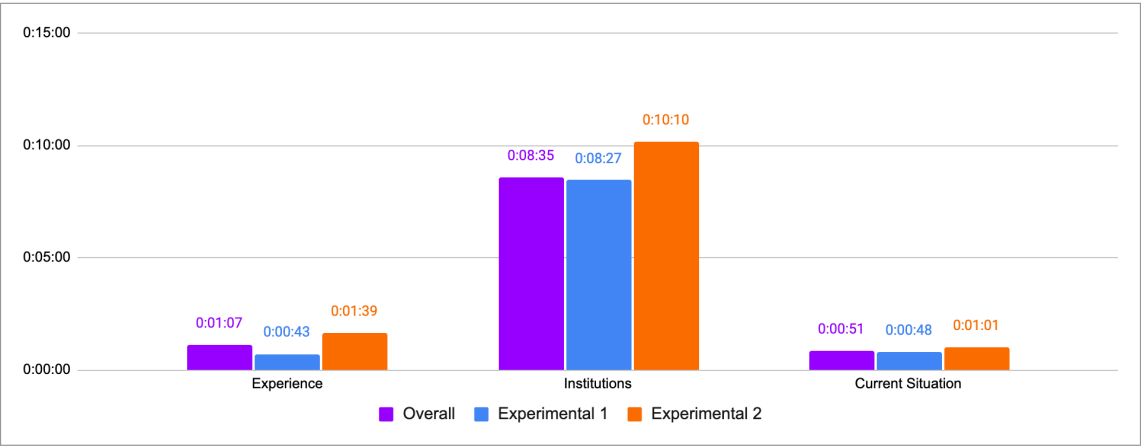
Figure 5.5  Average engagement time by section
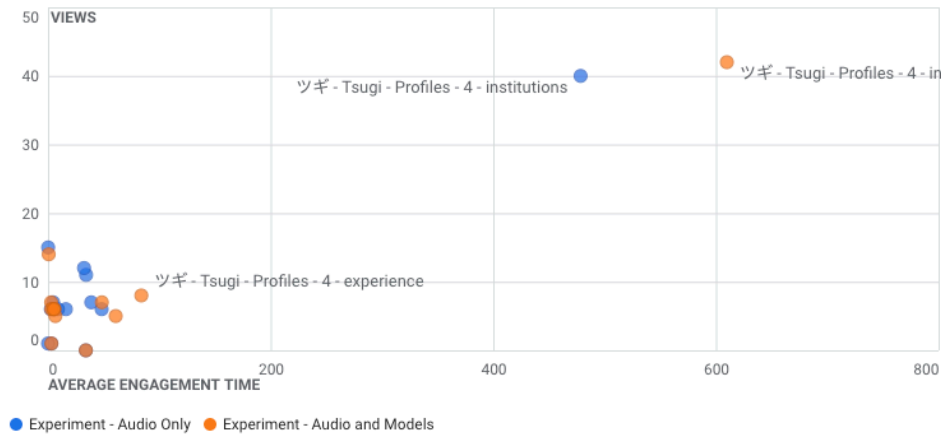


Figure 5.6  Average engagement time and Views by Page title and screen class

*towards you, fear that your children will also be victimized, and fear*
*that you will not be able to escape.*"

The recollection of all the participants was the highest and most accurate out
of all the qualitative questions. Since the experience section was the first section
the participant read or interacted with, it is highly probable this section had the
highest level of attention compared to the others, therefore even participants with
low level of IE were capable of processing the information accurately.

Based on the aforementioned data, each iteration of the design improved the
scores of the participants, therefore the addition of multimedia elements and inter-
activity improved the scores of the participants in the comprehension assessment.

**Simulation and Empathy Levels**

The average score for the above median participants was 83% of accuracy against
74.82% of the below median participants regardless of the experimental groups.

Of the three groups, the above median participants scored the highest in the
experimental group 2, which is the multimedia interactive simulation with a score
of 85.36%. But the lowest score for the above median participants was the ex-
perimental group 1, which is the interactive simulation with audio and text only
with a score of 78.57%. And the PDF version of the control group had a higher
score with 84.29%, almost as high as the Experimental group 2.

For the below median participants, their lowest score was in the control group
with a 70% accuracy score, followed by the experimental group 2 with a score
of 71.43%. The highest score was for the experimental group 1 with a score of
81.90%.

When comparing the comprehension scores of the participants above the me-
dian and below the median SEI, the above median SEI score participants outper-
formed the below the median SEI score in the control and experimental 2 groups.
However in the experimental group 1 version, participants below the median par-
ticipants outperformed participants above the median participants by almost 3%
(see Figure 5.7).

The hypothesis that people with higher empathy would outperform those with
lower empathy in the tested scenarios is only true when applied to the control
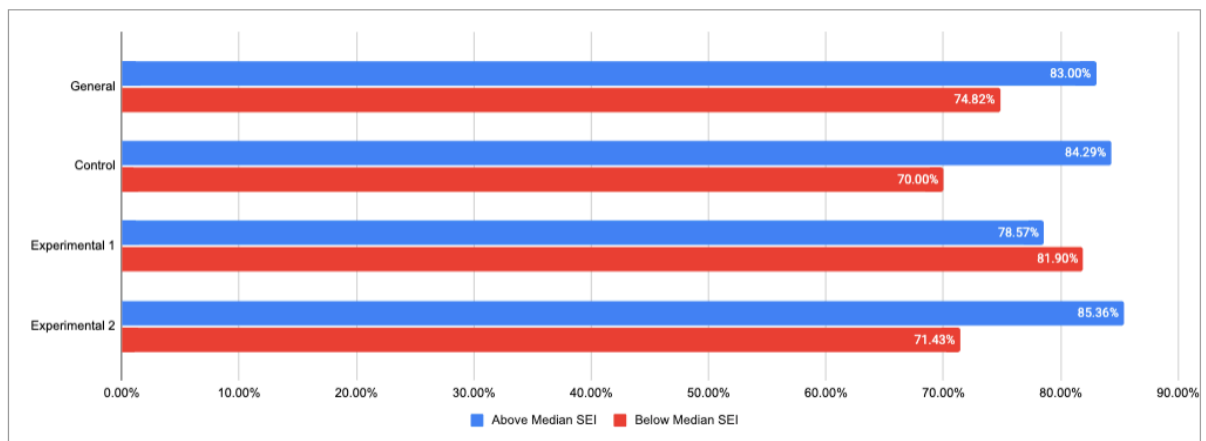
Figure 5.7  Comprehension assessment results based on SEI scores

group and experimental group 2. In the case of experimental group 1 people with lower empathy engaged better with the simulation while highly empathic people didn't.

The difference in results between levels of empathy can be linked to the affective mentalizing process of low-empathy people. In the experimental group 1 version they only heard the voice of the actress and read the text. This could have increased their affective mentalizing process when compared to low-empathy people in experimental group 2, in which they had a visual representation of the victim and therefore the amount of effort required from them to mentalize the characters was lower when compared to the participants of experimental group 2.

### 5.1.3 Interpersonal empathy vs social empathy

Q7 and Q19 were the items the participants struggled the most regardless of the version, as both had the second lowest accuracy rate. Both items had an accuracy rate of 66.7% and they asked questions regarding the victim's experience with the institutions and shelters.

Q7 asked about the participant's perception of the interaction between the victim and the doctor. In the test scenario, the doctor listened to the victim quietly and wrote a report about the abuse. 12 of the 18 participants selected

the option of this being a " good " experience in general and in the follow-up
item, Q8, the participants were asked to justify their response. 11 of the correct
respondents demonstrated interpersonal empathy. When cross referencing these
results with the self-report scores of SEI 7 of them reported above the median and
5 below the median.

On the other hand, out of the 6 responses who selected the " bad " experience
option, in the follow-up item five of them demonstrated higher levels of social
empathy when justifying their selection in the follow-up item. When cross refer-
encing these results with the self-report scores of SEI five of the six participants
self-reported above the median.

When comparing the results of Q7 and the responses of the follow-up item
the participants who chose the " bad " experience showed a higher level of so-
cial empathy. Meanwhile the participants who selected the " good " experience
showed levels of interpersonal empathy as they considered the experience from
the perspective of the victim.

On the other hand, Q19 asked about the victim's experience with the shelter.
For the victim staying at a shelter was not an option due to the location of the
shelter. But in this case the victim and their children were able to stay with a
friend.

In this case, 12 of the 18 participants that chose "bad" experience in the follow-
up item, Q20. Some of them demonstrated high levels of interpersonal empathy
and others of social empathy. When cross referencing with the self-reported SEI
scores, 9 of them reported above the median and 3 below the median.

The 6 participants who chose the " good " option didn't show interpersonal nor
social empathy. 5 of those participants self-reported below the SEI median and
one self-reported above the median.

When comparing Q19/Q20 and Q7/Q8 both sections communicated the idea of
the victim's struggle and how the system affects them and were able to empathize
with the victim either on a personal or social level (see Table 5.2).

These results may be used in future versions of the section to rephrase the
questions so that they are more direct as the participants seem to have interpreted
it in different ways. Nonetheless, from the responses it is possible to detect levels
of both interpersonal and social empathy.

| Item | Interpersonal Empathy | Social Empathy |
|------|----------------------|----------------|
| Q18 | 被害者の精神面への影響を考慮したコミュニケーションが行えていたため | 被害者の状況をヒアリングし、要望を確認してから支援団体などに連絡するのが最適だと思う |
|  | "Because the communication took into account the impact on the victim's mental health." | "I think it's best to interview the victims about their situation, confirm their needs, and then contact support groups." |
| Q18 | 深入りはしないが気遣ってくれたため | 怪我の原因だけ聞いて、相談窓口などの紹介を行わなかったから |
|  | "He didn't ask too much, but because he cares" | "Because they only asked about the cause of the injury and did not refer the patient to a consultation service." |
| Q20 | 避難所ではあるが、学校や職場等へ行くことまでもが制限されてしまうから。被害者が制限をされるべきではない。 | 被害者の生活環境を大きく変化させるため. 加害者から守るという意味では効果的かもしれないが, 被害者の金銭的, 精神的な負担を高める可能性が高いと考えられる. |
|  | "It is a shelter, but even going to school, work, etc. will be restricted. Victims should not be restricted." | "Because it significantly changes the victim's living environment. Although it may be effective in terms of protecting the victim from the perpetrator, it is likely to increase the victim's financial and emotional burden." |
| Q20 | 現実的に考えて，いい選択肢とは思えないから. | 行動の自由が阻害されており、社会的な権利が侵害されているから |
|  | "I don't think it's a good option from a practical standpoint." | "Because freedom of action is being inhibited and social rights are being violated." |

Table 5.2  Interpersonal vs social empathy

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## 5.1.4 DV as a social problem

Three items of the comprehension assessment, Q5/Q6 and Q28, were designed specifically to measure the understanding of the participants of DV as a social problem.

Q5/Q6 is a two-component item that asks the participants if they think society hurts DV victims. Q5 had an accuracy rate of 72.2% where the correct answer was "yes". Q6 of 69.4% was a qualitative follow-up item to Q5. Q28 asks the participant to select from a list who are responsible for DV cases between the following options: the victim, the perpetrator, society, the government, and the support systems. The participants could select multiple options and when selecting "perpetrator", "society", and "government" each option added 0.5 points with the highest possible score being 1.5 points.

**No changes**

In item Q5, 5 participants chose "no" and 3 self-reported above the median and two below the median. As for item Q28, out of the five participants who chose "no" in Q5, 4 of them only selected the perpetrator. The other participant did select the 3 correct options scoring 1.5 points against 0.5 points scored by the other 4.

In item Q6, there are two main arguments used by the participants who chose "no" in the Q5 item to explain their response: (1) The existence of support systems proves that society is doing something regardless of how it affects the victim and (2) For them, the term "society" is too broad and the blame is only of the perpetrator.

These participants seem to have separated themselves from the narration in order to avoid personal distress and as a result they didn't develop any interpersonal nor social empathy toward the victim at the end of the experiment. This phenomenon occurred regardless of the version or their self-reported SEI scores since the 4 participants belonged to different experimental groups and 2 self-reported above the median. But there are two demographics that they share: (1)they are in their 20s and (2)male.

**Revictimization**

13 participants responded "yes" to Q5, out of those 7 self-reported above the median and 6 below the median in the SEI.

When analyzing the 13 responses of Q6 the majority demonstrate a level of understanding about revictimization from society towards DV victims:

> 適切な対応をしないことでさらに状況を悪化させる要因になりうるから
> "*Because not responding appropriately could be a factor that makes the situation even worse.*"

> *DV* 被害からの復帰のプロセスにおいて、被害者への精神的なサポートが欠如している
> "*Lack of emotional support for victims in the process of recovery from domestic violence.*"

On the other hand, out of these 13 participants, 3 selected all the correct options for Q28, 8 selected 2 of the correct options, and 2 chose only the perpetrator.

The gap in the correct responses between Q5 and Q28 suggests that some of the participants identified the revictimization DV victims suffer from their social group but still do not recognize DV as a social problem. This is shown by all the participants choosing from the list of Q28 the perpetrator but only 9 selected society.

The main difference between the "yes" and "no" respondents is that the "yes" group understood how inadequate response and action regarding DV can negatively affect the victim, and as a result gained contextual understanding and macro perspective-taking of the situation.

> *DV* 被害者に、黙って独りで我慢している人が多いのは、被害者にとって優しい社会がないから。
> "*The reason why there are so many victims of domestic violence who keep quiet and endure alone is because there is no victim-friendly society.*"

社会という定義は広すぎると思いますが、$DV$被害者を救済するため
の措置が、十分ではないことは同意できます。
"*I think the definition of "society" is too broad, but I agree that there
are not enough measures in place to help victims of domestic violence.*"

**Public Policy**

There is an overall perception from the participants that the government's re-
sponse to the situation needs improvement. When asked about their opinions
on certain policies, the majority of the participants agreed that (1) the current
DV Law doesn't offer a good solution to victims and (2)the government should
facilitate therapy sessions for DV victims (see Figure 5.8).
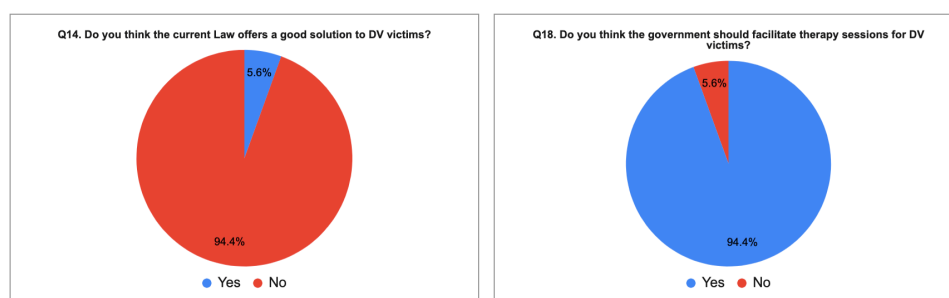


Figure 5.8  Opinions about public policy regarding DV 01

As for how the institutions should change, 66.7% agreed that doctors and nurses
should be obligated to report DV cases to the authorities 72.2% support the idea
that perpetrators should be forced to participate in rehabilitation programs, and
83.3% don't think shelters are a good solution for DV victims (see Figure 5.9).

**Feedback**

At the end of the comprehension assessment an extra item was included for the
participants to express their opinions about the experiment. Some of the com-
ments were:

$DV$加害者を生まない社会、教育をすることが大切と思います。根本
から変えないと、他人を傷つけてでも自分だけが幸せになれば良い、
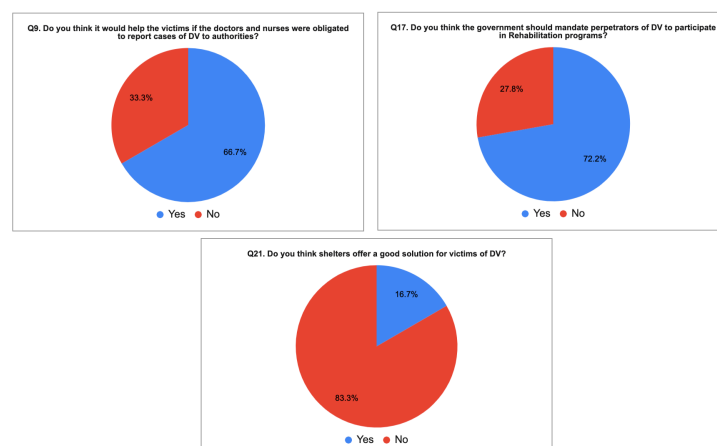
Figure 5.9  Opinions about public policy regarding DV 02

という歪んだ考え方が横行してしまう。マスメディアなどでも、それ
らを許さないということを啓発するようなコンテンツを発信するなど
を行うことが重要と思います
*" I think it is important to have a society and education that does not
produce DV perpetrators. If we don't change things from the ground
up, the distorted way of thinking that only one should be happy, even
if it hurts others, will become rampant. I think it is important for the
mass media to send out content that enlightens people not to allow
such behavior."*

*DV*について，深く考えるきっかけになりました．
また，理解を深めるだけでなく，今後自分が誰かと一緒に生活をして
いく上で，被害者・加害者にならないためにも，実際の証言を読み，考
えるというのは良い体験だったと思います
*" It gave me a chance to think deeply about domestic violence.*
*It was also a good experience for me to read and think about actual
testimonies, not only to deepen my understanding, but also to pre-
vent myself from becoming a victim or a perpetrator when I live with
someone in the future "*

*DV*の実態や対処法などの情報を色々と知れて良かったと思います．こ
のような教材が義務教育内でもしっかりと実施されると，より被害が

減るのではないかなと感じました.

"*It was good to learn about the reality of DV and how to deal with it. I felt that if this kind of educational material is implemented in compulsory education, the number of victims will be reduced.*"

とても難しい問題をテーマにされていて、回答に悩みましたが、私自身も既婚で、いつこのような経験をするかはわからないということを意識しました。結婚していても個人が自立していることがとても大切であることを自覚しました。

"*I had a hard time answering the questionnaire because it was about a very difficult issue, but I was aware that I am also married and do not know when I will have this kind of experience. I became aware of the fact that it is very important for individuals to be independent even if they are married.*"

## 5.2.  Discussion

Based on the results of the assessment and the feedback of the participants the experiment allowed for the majority of the participants to learn how society impacts victims and modify their perception of DV regardless of them being part of the control or experimental group.

The experiment also served as an educational tool for some of the participants to prevent DV and gain awareness of their situation. Therefore, the information successfully conveyed to the participants the concepts of: (1) the perspective of the victim, (2) the effects of revictimization, and (3) the need for improvement of the government's response to DV.

As for the hypothesis, the following statements resulted from the experiment:

1. Not all participants with self-reported high levels of interpersonal empathy self-reported high levels of social empathy, some reported higher levels of social empathy but low levels of interpersonal empathy.

   One of the limitations of the SEI is that it was developed in the United States and the cultural differences create barriers when applying this instrument and interpreting its results. Therefore more research needs to be done with

a bigger sample pool to adapt the instrument for Japanese society the same way it was developed for the United States.

2. Participants with above median SEI scored higher than the participants with below median SEI scores in only two of the iterations.

   The difference in results between levels of empathy can be linked to the affective mentalizing process of low-empathy people. In the experimental group 1 version they only heard the voice of the actress and read the text. This could have increased their affective mentalizing process when compared to low-empathy people in experimental group 2, in which they had a visual representation of the victim and therefore the amount of effort required from them to mentalize the characters was lower when compared to the participants of experimental group 2.

3. Participants learned about DV with a social empathy perspective as well as recognized the effects of revictimization on DV victims when provided with educational materials.

   The participants were able to identify the effects of revictimization of DV victims based on their responses and while for some of them the term society was broad to declare or accept that society hurts DV victims at the same level of perpetrators the participants responses showed social and interpersonal empathy.

4. The multimedia interactive simulation produced the highest score in the comprehension assessment from the three designed iterations.

   Each iteration of the simulation had an increment in the scores of the comprehension assessment. While the difference of scores was small the increment suggests a positive effect on adding audio visuals materials to support the narration when sharing information about DV when targeting the general population.

   Also none of the participants reported high-levels of stress resulting from the experience, therefore the simulation avoided creating secondary trauma stress on the participants which is important when presenting violent topics in tools designed to prevent violent actions in the future.

### 5.2.1 Limitations and Concerns

One of the limitations of this research was that the topic of this research impacted the search for participants in a negative way. Since it's a taboo topic, the number of people who volunteered to participate was low and in this case the majority of volunteers were males, between 20 and 30 years old; because of this, the results don't have a neutrality regarding gender or age.

The other limitation was due to the state of emergency for COVID-19 in Japan during the experimental period, the implementation of the experiment had to be done remotely, therefore the scope of the experiment and the results was limited.

## 5.3.  Future Work

This research focused on designing an instrument that can be used to help people understand DV as a social issue, therefore one of the objectives for future work is to research the long-term effects of this experiment and how it affects the participants regarding taking action against DV on a societal level.

In the short term, the next step for the simulation is to release a beta version for the general public to access it. The beta version will be shared through AWARE's network in order to reach people with direct relation with DV. To reach the general population who are not in AWARE's network can be through a social media campaign which targets people from key sectors to advance the fight against DV.

The medium-term, the last of the profiles will be recorded and completed in the simulation to have five profiles showcasing the different scenarios and realities victims face in Japan.

In the long-term, the knowledge obtained from this research will serve as a baseline to develop other simulations for other countries like Mexico where the problem of DV and VAW is well-documented and the need to educate the population is high. And while the simulations will maintain the objective of raising awareness and present DV as a social problem, the simulation will be modified based on the cultural differences of the target country.

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# Appendices

## A. DV Experience Survey Logic flow
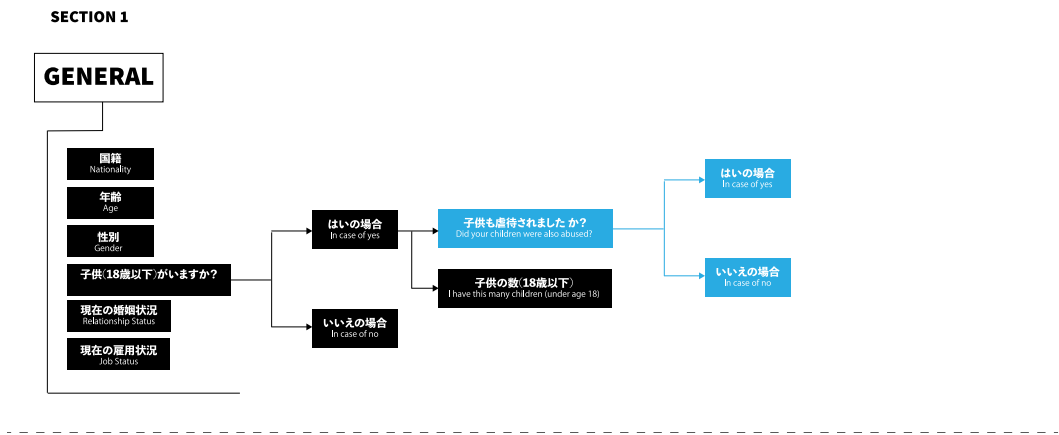


Figure A.1  General section

## B. Simulation's Context Data

| Institution | Context Data | Source |
|---|---|---|
| Society | About 40% of the women and 70% of the men who have been victimized have not consulted anywhere. | Government Report [29] |
| Society | The majority of victims of spousal harm consult with family members, relatives, friends and acquaintances. | Government Report [32] |
| Society | The most common reason for not discussing spousal violence was that they did not think it was something worth discussing. | Government Report [32] |
| Police | The number of consultations on spousal violence to the Police was 8,627, an increase of 192 (2.3%) from the previous year. | Police Report [105] |
| Police | More than 50% of DV cases go unreported. | "DV Experience Survey" |

**Table B.1 continued from previous page**

| Institution | Context Data | Source |
|---|---|---|
| Police | In reality, only physical violence is still considered to be DV, and the police sometimes respond incorrectly. | Legislation [41] |
| Hospital | Physicians or other medical personnel who, during the course of their duties, come across a person whom they consider to have suffered from injuries or medical conditions resulting from spousal violence may notify a spousal violence counseling and support center or a police officer but only if that is the wish of the person. | Legislation [41] |
| Hospital | Physicians or other medical personnel who, during the course of their duties, come across a person whom they consider to have suffered from injuries or medical conditions resulting from spousal violence must endeavor to provide the person with the information at their disposal concerning the use of spousal violence counseling and support centers, etc. | Legislation [41] |
| Hospital | There are some cases that are not reported because the above sections of the DV law are not yet well known. | AWARE |
| Support Services | Support agencies offer support to victims and some have rehabilitation programs for perpetrators. But the majority is underfunded. | AWARE |
| Support Services | "Counseling" and "DV Rehabilitation Programs" are different types of programs. | AWARE |
| Support Services | In Domestic Violence cases it is not desirable to "seek counseling together", in fact it is often dangerous. | AWARE |
| Support Services | Since participation in the rehabilitation program is voluntary, it is more difficult for high-risk perpetrators to be connected to the program when the victim is under strong psychological or physical oppression or control of the perpetrator, or when the perpetrator is not aware of his own violent behavior. | Government Report [34] |
| Shelter | About 86.4 % of the women who entered the private shelter cited their husbands' violence as a reason to use this facility. | Published Paper [106] |
| Shelter | The number of shelters that exist in the country is not enough for the number of victims who need them. Some are located only in urban areas, while others are over-capacity. | Published Paper [42] |
| Shelter | Temporary shelters, by their very nature, are places that are hidden and therefore cannot be openly discussed with those in need of assistance. | Published Paper [106] |
| Shelter | Even when victims use temporary shelters, the method of prohibiting them from leaving the house, including their children, affects their daily lives. This interferes with the victim's daily life, which in turn affects the victim's income and the education of her children. | Published Paper [106] |
| Justice System | It takes in average two weeks or more to issue a Restraining order or a Deportation order against a perpetrator. | Lawyer Consultation [43] |

**Table B.1 continued from previous page**

| Institution | Context Data | Source |
|---|---|---|
| Justice System | Unmarried women are more likely to be the targets of IPV because the Stalker Regulation Law does not protect them as fully as the DV Prevention Law would protect married women. | Published Book [12] |
| Justice System | The current law offers a one-size-fits-all solution to the victims by suggesting victims to run away. A lot of victims do not find this solution useful or effective for their situations. | "DV Experience Survey" |

Table B.1: Simulation's Context Data

# C.  Social Empathy Index (SEI) Japanese Translation

| No. | Question | 質問 |
|---|---|---|
| 1 | (AR) When I see someone receive a gift that makes them happy, I feel happy myself. | 誰かがプレゼントをもらって喜んでいるのを見ると、私も嬉しくなる。 |
| 2 | (ER) Emotional stability describes me well | 情緒が安定している。 |
| 3 | AM — I am good at understanding other people's emotions. | 人の気持ちがよく分かる。 |
| 4 | (PT) I can consider my point of view and another person's point of view at the same time. | 他人の意見を聞きながら、自分の意見を主張できる。 |
| 5 | (ER) When I get angry, I need a lot of time to get over it. [R] | 怒りの感情を抑えるのに、時間がかかる。 |
| 6 | (PT) I can imagine what the character is feeling in a good movie. | 映画を見る時に、登場人物の気持ちを想像できる。 |
| 7 | (AR) When I see someone being publicly embarrassed I cringe a little. | 誰かが人の前で恥ずかしい思いをしているのを見ると、私まで恥ずかしくなる。 |
| 8 | (SOA) I can tell the diff erence between someone else's feelings and my own. | 他人の気持ちと自分の気持ちの違いを理解できる。 |
| 9 | (AM) When I see a person experiencing a strong emotion I can accurately assess what that person is feeling. | 強い感情を持っている人を見ると、その人が何を感じているのかを理解（判断）できる。 |
| 10 | (ER) Friends view me as a moody person. [R] | 友人や家族から、よく気分屋だと言われる。 |
| 11 | (AR) When I see someone accidently hit his or her thumb with a hammer, I feel a flash of pain myself. | 誤って親指をハンマーで叩いてしまった人を見ると、私まで痛みを感じる。 |
| 12 | (AM) When I see a person experiencing a strong emotion, I can describe what the person is feeling to someone else. | 強い感情を抱いている人がいる時、その人が感じていることを他の人に説明できる。 |
| 13 | (PT) I can imagine what it's like to be in someone else's shoes. | 他の人の立場に立って物事を想像することができる。 |
| 14 | (SOA) I can tell the difference between my friend's feelings and my own. | 友達の気持ちと自分の気持ちの違いに気づける |

**Table C.1 continued from previous page**

| No. | Question | 質問 |
| --- | --- | --- |
| 15 | (PT) I consider other people's points of view in discussions. | 議論をするときは、他の人の視点も考慮する。 |
| 16 | (AR) When I am with someone who gets sad news, I feel sad for a moment too. | 悲しい知らせを受けた人と一緒にいると、私も悲しく感じる。 |
| 17 | (ER) When I am upset or unhappy, I get over it quickly. | 悲しいことや良くないことが起こっても、すぐに立ち直る。 |
| 18 | (SOA) I can explain to others how I am feeling. | 自分の気持ちを他人に説明できる。 |
| 19 | (PT) I can agree to disagree with other people. | 他人の意見は自分のとは違ったとしてもそれを尊重できる |
| 20 | (SOA) I am aware of what other people think of me. | 他人からどう見られるかが分かる |
| 21 | (AR) Hearing laughter makes me smile. | 笑い声を聞くと笑顔になる。 |
| 22 | (AM) I am aware of other people's emotions. | 他人の感情に敏感だ。 |
| 23 | (CU) I believe adults who are in poverty deserve social assistance. | 貧困状態にある大人は社会的支援を受けるべきだと思う。 |
| 24 | (MSP) I confront discrimination when I see it. | 差別を目の当たりにした時に、それに立ち向かえる。 |
| 25 | (CU) I think the government needs to be a part of leveling the playing field for people from different racial groups. | 政府は、あらゆる人が生まれた人種によって不平等を被らないようにすべきだと思う。 |
| 26 | (MSP) I believe it is necessary to participate in community service. | 社会貢献活動に参加することは必要だと思う。 |
| 27 | (CU) I believe that people who face discrimination have added stress that negatively impacts their lives | 差別を受ける人は、生活に悪影響が出るほどのストレスを抱えていると思う。 |
| 28 | (MSP) I am comfortable helping a person of a different race or ethnicity than my own. | 異なる人種や民族の人々を助けることに抵抗がない。 |
| 29 | (MSP) I take action to help others even if it does not personally benefit me. | 個人的な利益がなくても、人助けのために行動できる。 |
| 30 | (MSP) I can best understand people who are different from me by learning from them directly. | 自分と違う人々を理解するには、その人たちから直接学ぶのが良いと思う。 |
| 31 | (CU) I believe government should protect the rights of minorities. | 政府はマイノリティの権利を守るべきだと思う。 |
| 32 | (MSP) I believe that each of us should participate in political activities. | 一人一人が政治活動に参加すべきだと思う。 |
| 33 | (CU) I believe people born into poverty have more barriers to achieving economic well-being than people who were not born into poverty. | 貧困で生まれた人は、そうでない人よりも経済的に豊かになるための支障が多いと思う。 |
| 34 | (MSP) I feel it is important to understand the political perspectives of people I don't agree with. | 意見が合わない人の政治的な見解を理解することは重要だ。 |
| 35 | (CU) I think it is the right of all citizens to have their basic needs met. | 全ての国民は、基本的な人権が保証されるべきだと思う。 |
| 36 | (CU) I believe the role of government is to act as a referee, making decisions that promote the quality of life and well-being of the people. | 政府には命の平等性や人々の幸福を促す役割があると思います。 |

**Table C.1 continued from previous page**

| No. | Question | 質問 |
|-----|----------|------|
| 37 | (MSP) I have an interest in understanding why people cannot meet their basic needs financially. | 人々が経済的に困窮している理由を理解することに興味がある。 |
| 38 | (CU) believe that by working together, people can change society to be more just and fair for everyone. | 人々がお互いに協力し合うことで、誰にとってもより公正公平な社会が実現できると信じている。 |
| 39 | (MSP) I believe my actions will affect future generations. | 自分の行動は、将来の世代に影響を与えると思う。 |
| 40 | (CU) I believe there are barriers in the educational system that prevent some groups of people from having economic success. | 現在の教育システムでは、一部の人間が経済的成功を叶えられないようにする支障があると思う |

Table C.1: Social Empathy Index with Japanese Translation

For questions 1–22, the instrument contains 5 components: affective response [AR], affective mentalizing [AM], self-other awareness [SOA],perspective- taking [PT], and emotion regulation [ER].

AR = 5 items, AM = 4 items, SOA = 4 items, PT = 5 items, and ER = 4 items

For questions 23–40, the instrument contains 2 components: contextual understanding of systemic barriers [CU] and macro self- other awareness/perspective taking [MSP].

CU = 9 items and MSP = 9 items

Reverse scoring indicated by R

# D.  Experiment: Control version

# E.  Comprehension Assessment

## E.1  Questionnaire
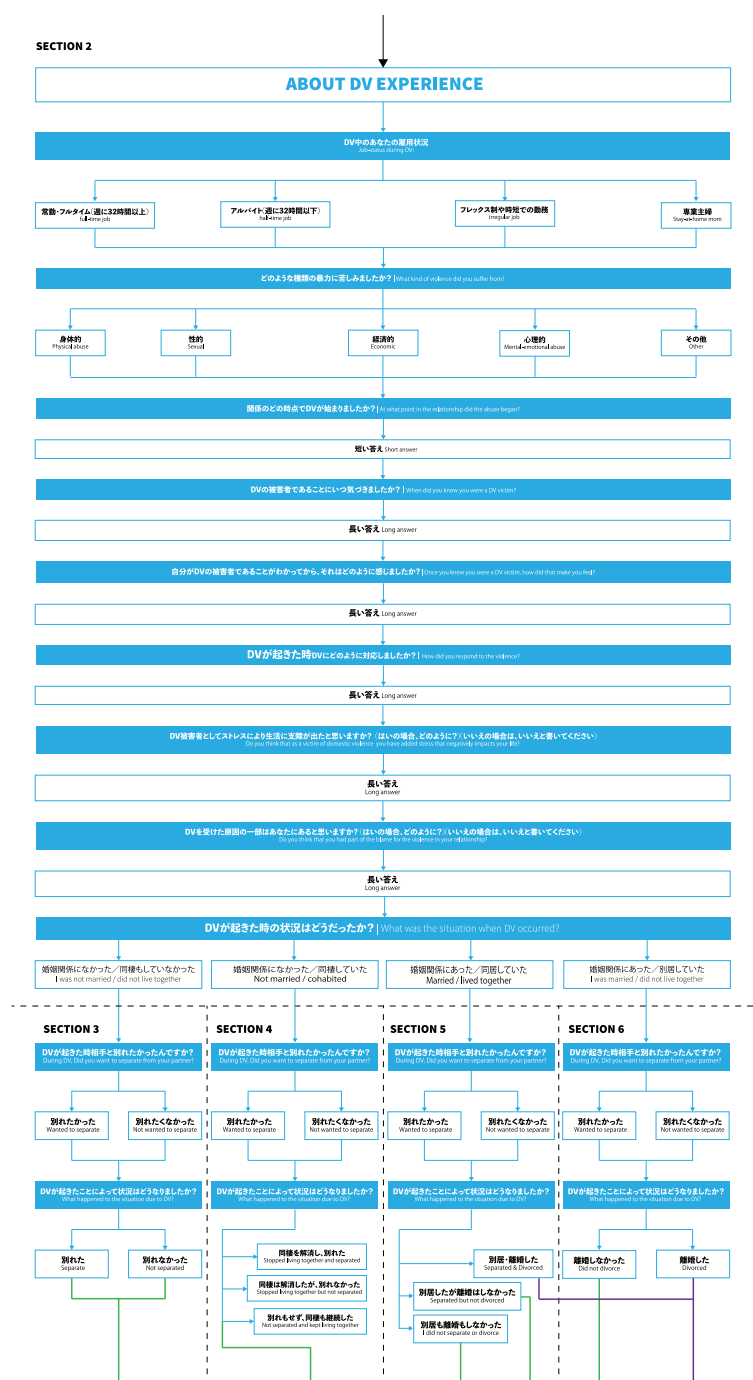
Figure A.2  Experience section
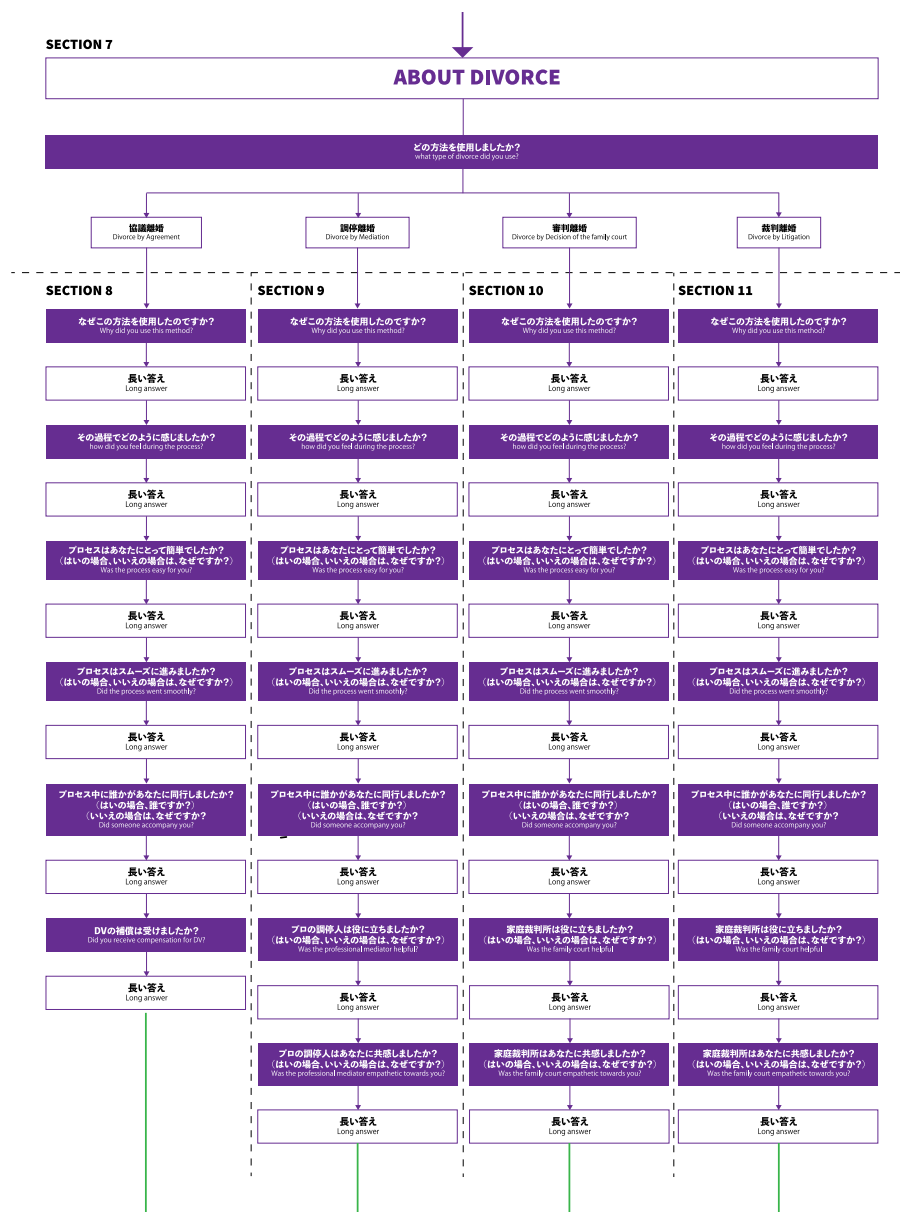
Figure A.3  Divorce section
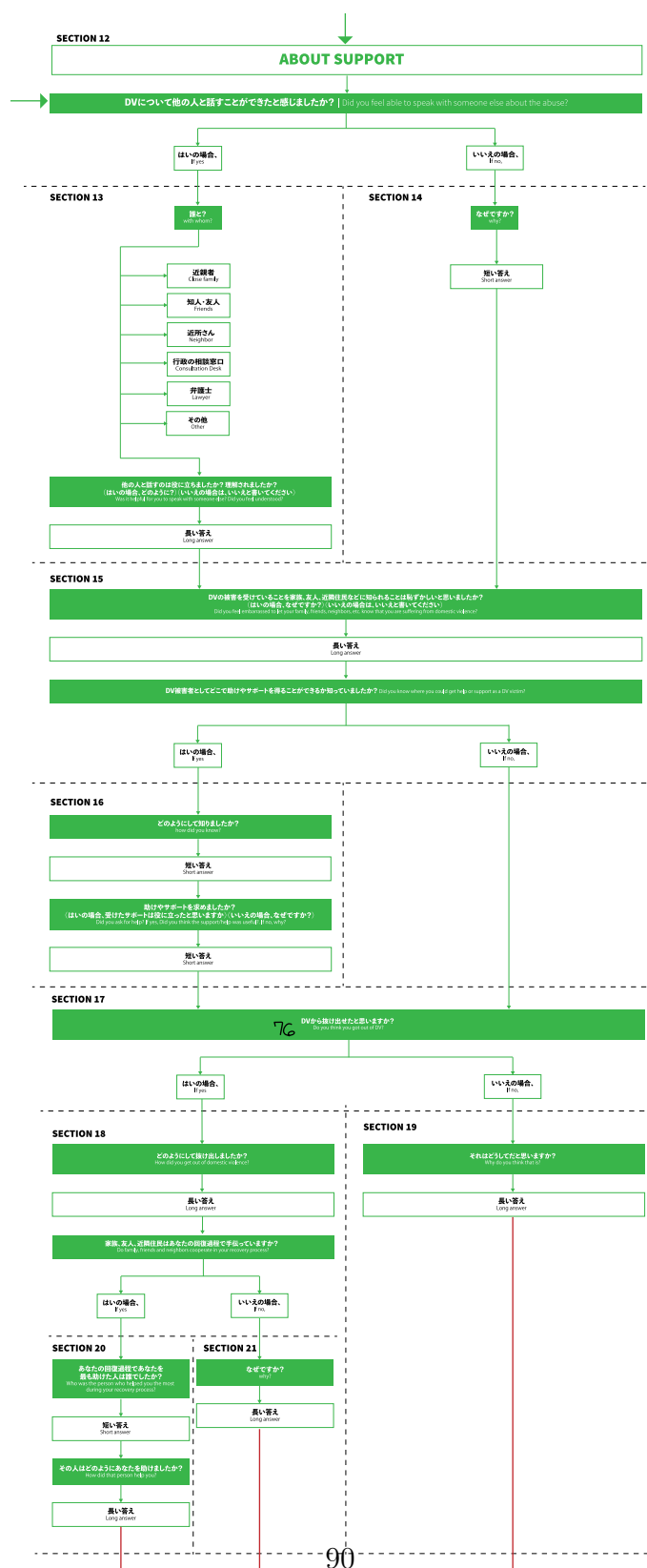
Figure A.4  Support section
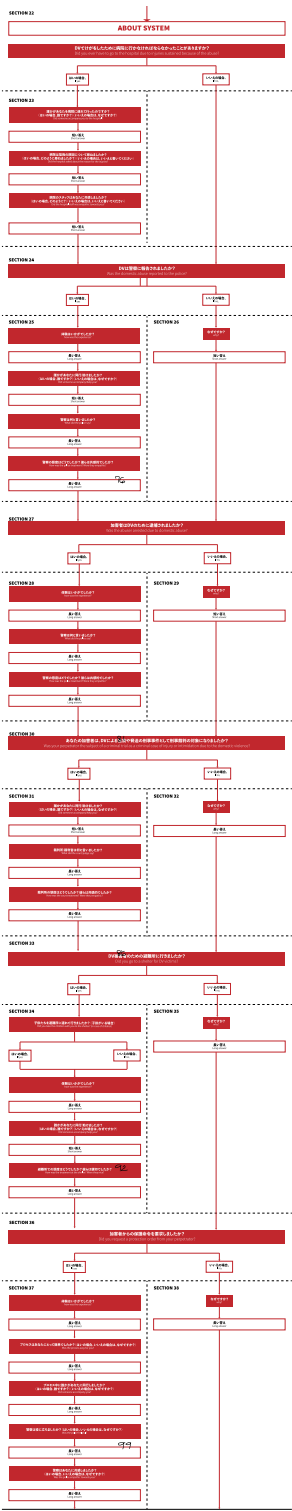
Figure A.5 System section

Olivia Peralta KMD

## 始める前に必ず読んでください

プロフィールの内容は全てDV被害者の実体験の証言を元に作成されています。
プロフィールは3つのセクションに分かれています。
最後まで読んでください。

# I. 経験 | Experience

今思えば、結婚して1年後にはDVが始まっていたと思います。
夫から「お前のやり方が間違っている」「お前の努力が足りない」と言われました。
次第に理由もなく怒鳴られ、侮辱され続けました。

そしてある日、夫は私の頬を平手打ちしました。
最初は、謝ってくれました。
しかし月日が経つにつれ、謝ることもなくなり、暴力が増えていきました。
そのうち平手打ちだけでなく、物を投げつけたり、蹴ったり殴ったりするようになりました。

「これは犯罪だからやめて」と夫に暴力しないようにお願いしましたが、「すべてはお前のせい。言う事を聞けばこんなことにはならない」と言われました。
私の家族や友人は、いくつものあざに気づき、心配してくれました。
家族は「逃げ出すときは、すぐに連絡してくれ」と言ってくれました。
私は「大丈夫。心配しないで」と伝えましたが、内心はいつも怖くて仕方ありません。
心が休まる時はなく、時には命の危険も感じていました。

夫は私や子供の生活すべてを支配し、私が家族や友人に会うことを禁じます。
どうすることもできない無力な日々の中、私は朝から晩まで仕事・家事・子供の世話に追われていました。

そのストレスからか、関係のない職場の人に八つ当たりしたり、子供たちにも大声で怒鳴ったり、おもちゃを壊したりすることもありました。
私にはどうすれば夫の暴力を止めることができるのかわかりません。とにかく私は夫が嫌いで、離婚したいと思っていました。

そんな生活が何年も続きました。
ある日、夫が私をひどく殴ったり蹴ったりしたので、子供たちが警察に通報しました。
警察が来て夫を連れて行き、子供たちは私を慰めてくれました。

私はその時に初めて、つらかった感情をやっと表すことができ、大声で泣きました。

Olivia Peralta KMD

Figure D.1 Control version

Olivia Peralta                                                    KMD

## II. 機関| Institutions

### 社会|Society

刑事さんにDV被害者だと言われた時は絶望を感じました。
今まで家族のために頑張ってきましたが、自分がDV被害者であり、夫が私を全く愛していないことに初めて気づきショックを受けたのです。

家族に相談したり、ウェブでDVについて調べました。
自分がDV被害者だとわかってからは、新たな不安が生まれました。それは子どもたちがこの社会で生きていくうえで「可哀想な子」「暴力する親の子」として、理不尽な思いをさせられるのではないかと思ったからです。

しかし、家族や友人に相談したら、気持ちが楽になり、頑張ろうと思えるようになりました。
安全を確保するためにも、子供たちの学校・保育園など身近な人たちにも相談しました。
みんな私の状況を理解し共感してくれたので、安心することができました。

またサポートグループに出会い、自分の気持ちを話すことができました。
他の人の話も聞くことで、DV被害が自分だけではないことを知りました。
そのおかげで自分の気持ちを整理でき、未来について考える余裕が少しずつ出てきました。

### 警察|Police

警察が家に2回来ました。1回目は、私と子供への暴力を止めさせるために呼びました。
夫は警察が来る前に家から逃げました。
事情聴取した警察からは「金銭問題からくる夫婦喧嘩」と片付けられました。
「なぜ夫を怒らせたのか」とまで聞かれ、私が感じた恐怖には全く聞く耳を持ってくれません。警察にも頼れない、という無力感を感じました。
今度、警察沙汰になったら、状況も聞かずに隔離されるかもしれません。
生活が一変してもうこの家で過ごすことはできなくなるかもしれない、という強い不安を感じていました。

もう二度と警察なんて呼ばない、と思っていたのに、2回目は子供が通報しました。
それは私が死ぬのではないかと思うほど殴られていたからです。
あまりのひどさに子供たちも警察を呼べば助かると思ったのでしょう。

警察は夫を連行し、私は救急車で病院にいくことになりました。
刑事さんから「これはDV事件。危険のある場所に戻すことはできない。警察署で保護します」と言われました。

Olivia Peralta                                                    KMD

Figure D.2  Control version

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## 病院｜Hospital

病院に着いたら、医師が私の怪我を確認し、どうしてそうなったのかを尋ねてきました。医師も看護師もそれ以上は詳しく詮索せず、ただ私の話をじっくり聞いてカルテや診断書を記入してくれたのが幸いでした。
優しい言葉もかけてくれましたが、私は子供たちと一緒にいたかったので、病院には泊まらず、手当てを受けたらすぐに退院しました。

## 支援団体｜Support Service

友人と一緒に暮らし始めてからインターネットでDVに関する情報を調べました。
女性相談、市役所の女性相談員、東京ウィメンズプラザ、行政が主催するDV関連の講習会、NPOの支援サービスなどから支援を受けることができました。

それら一か所のみで問題すべてを解決できるわけではありません。そこから他のカウンセリングやワークショップなどを紹介してもらい、少しずつネットワークを広げていきました。時間はかかりましたが、人脈を通じて多くの知識やサポートを得ることができたと思います。

## 避難所 ｜Shelter

夫は警察に連行されましたが、私は家に帰ることは危険ということで、シェルターの利用を強く勧められました。しかしそれは現実的ないい選択ではありません。シェルターに行くと子供の学校生活や私の仕事もストップせざるを得ないからです。今後の生活に不安を感じたので、断りました。安全を確保するために警察が勧めることは理解できますが、少し強引で融通が利かないところが嫌でした。

親しい友人が家に泊めてくれることになりました。
とても有難かったです。
安堵感から私は何年かぶりに、やっとゆっくりと眠るにつくことができました。

## 家庭裁判所｜Justice System

最初に警察が介入した後、私には子供がいるので児童相談所に連絡しました。
しかし児童相談所が間違えて夫に連絡してしまい、大騒ぎになりました。結果、夫からの暴力が増えることになったのです。警察がDV事件であるという警告を加えていれば、このような事態は防げたと思います。

夫と別居した後、刑事から夫を告発するかどうか聞かれました。しかし、刑事裁判になれば夫は仕事を解雇されるでしょう。そうなれば今後、私や子どもへの経済的な補償が得られなくなるので、断りました。

Figure D.3  Control version

Olivia Peralta                                                                              KMD

## III. 現在状態 | Current Situation

今は夫と離れて暮らし、私や子供のことを心配してくれる人たちのサポートのおかげで状況は良くなっています。ただ、子供の養育や離婚のことで夫と連絡を取り合う必要があるとき、DVはまだまだ続いていることを感じます。

夫は離婚協議書の作成にまったく協力してくれません。私は家を出てから4年になりますが、その間に調停も試みました。しかし夫の主張がコロコロと変わり進展しないため、2年で打ち切られたのです。

裁判をしても時間がかかりそうなので、今、弁護士と相談しています。
しかし、こちらから連絡しても夫は反応しないことが多いのです。
それどころか私の要求を一切拒否し、慰謝料を請求してきます。また合意内容が自分の思い通りにならないと怒り、婚姻費用の振り込みも遅らせてきます。
私と子供の幸せを許さない、という事です。離れて暮らしていても、DVを受けていることを強く感じています。

最後までお読みいただき、ありがとうございました。
こちらのアンケートにできるだけ早く回答してください。

アンケートに答える

ボタンが機能しない場合はこちらのリンクをお使いください。
https://forms.gle/gRsjRXVNA3VdW9MN6

Olivia Peralta                                                                              KMD

Figure D.4  Control version

Table E.1: Comprehension Assessment

| Measured Factor | Points | Value | No. | Items English | Items Japanese | Answer |
|---|---|---|---|---|---|---|
| AM | 2.5 | 0.5 | 1 | What type of violence did the perpetrator do? | DV 加害者はどんな暴力をふるってしまったのでしょうか？ | Social |
| | | 0.5 | | | | Psychological |
| | | 0.5 | | | | Physical |
| | | 0.5 | | | | Economic |
| | | 0 | | | | Sexual |
| | | 0.5 | | | | Directed to children |
| CU | 2 | 0 to 2 | 2 | How did DV affected the victim's life? Mention a few one | DV は被害者の生活にどのような影響を与えましたか？ いくつか挙げてください | Short answer |
| PT | 2 | 0 to 2 | 3 | Please list some of the emotions the victim had during her experience with DV | 被害者が DV を体験したときに感情をいくつか挙げてください | Short answer |
| CU | 2 | 0 to 2 | 4 | Why do you think some victims don't ask for help? | 一部の犠牲者が助けを求めないのはなぜだと思いますか？ | Short answer |
| MSP | 1 | 1 | 5 | Do you think Society hurts DV victims? | 社会は DV の被害者を傷つけていると思いますか？ | Yes/No |
| MSP | 2 | 0 to 2 | 6 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか？ | Short answer |
| SOA/PT | 1 | 1 | 7 | Do you think the victim's experience with the doctor was good or bad? | DV 被害者の医者との経験は良かったと思いますか、それとも悪かったと思いますか？ | good/bad |
| MSP/CU | 2 | 0 to 2 | 8 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか？ | Short answer |
| CU | - | - | 9 | Do you think it would help the victims if the doctors and nurses were obligated to report cases of DV to authorities? | 患者が DV を受けていた場合、医師や看護師は DV を報告するよう義務付けられるべきだと思いますか？ | Yes/No |
| PT | 1 | 1 | 10 | Do you think the victim's experience with the police was good or bad? | DV 被害者の警察での経験は良かったと思いますか、それとも悪かったと思いますか？ | good/bad |
| PT | 2 | 0 to 2 | 11 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか？ | Short answer |
| CU | 1 | 1 | 12 | Do you think the Police handles DV cases properly? | 警察は DV 事件を適切に処理していると思いますか？ | Yes/No |
| MSP | 2 | 0 to 2 | 13 | Why do you think victim's don't report DV to the Police? | なぜ被害者は DV を警察に報告しないと思いますか？ | short answer |
| CU | - | - | 14 | Do you think the current Law offers a good solution to DV victims? | 現在の法律は DV の犠牲者に良い解決策を提示していると思いますか？ | Yes/No |

**Table E.1 continued from previous page**

| Measured Factor | Points | Value | No. | Items English | Items Japanese | Answer |
|---|---|---|---|---|---|---|
| PT | 1 | 1 | 15 | Do you think the victim's experience with the Justice System was good or bad? | 被害者の司法制度の経験は良かったと思いますか、それとも悪かったと思いますか? | good/bad |
| PT | 2 | 0 to 2 | 16 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか? | short answer |
| MSP/PT | - | - | 17 | Do you think the government should mandate perpetrators of DV to participate in Rehabilitation programs? | 政府は、DV加害者が更生プログラムに参加することを義務付けるべきだと思いますか? | Yes/no |
| MSP/CU | - | - | 18 | Do you think the government should facilitate therapy sessions for DV victims? | 政府は、DV被害者のためのカウンセリングを手助けすべきだと思いますか? | Yes/no |
| PT | 1 | 1 | 19 | Do you think the victim's experience with the shelter was good or bad? | DV被害者の避難所での経験は良かったと思いますか、それとも悪かったと思いますか? | good/Bad |
| MSP/CU | 2 | 0 to 2 | 20 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか? | short answer |
| MSP/CU | - | - | 21 | Do you think shelters offer a good solution for victims of DV? | 避難所はDVの犠牲者にしっかりとした解決策を提供していると思いますか? | Yes/no |
| PT | 1 | 1 | 22 | Do you think the victim's experience with the Support service was good or bad? | 被害者の支援団体の経験は良かったと思いますか、それとも悪かったと思いますか? | good/bad |
| PT | 2 | 0 to 2 | 23 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか? | short answer |
| MSP/CU | 1 | 1 | 24 | Do you think the Support services receive enough funding from the government? | 支援団体は政府から十分な資金をもらっていると思いますか? | Yes/No |
| PT | 1 | 1 | 25 | Do you think the victim's current situation is good or bad? | 被害者の現在の状況は良いと思いますか、それとも悪いと思いますか? | good/Bad |
| PT | 2 | 0 to 2 | 26 | Please explain your previous answer | 1つ前の質問に関して、なぜそう思いますか? | short answer |
| MSP/CU | - | - | 27 | Do you think that if a someone near you suffered from DV, you must help in some way? | もしあなたの周囲で誰かがDVに苦しんでいたら、あなた自身が何らかの方法で助けでなくてはいけないと思いますか? | Yes/no |
| PT | 1.5 | 0.5 | 28 | Who is to blame for Domestic Violence cases? | DV事件の責任は、誰にあると思いますか? | victim |
| | | 0 | | | | |
| | | 0.5 | | | | perpetrator |
| | | 0.5 | | | | Society |
| | | 0.5 | | | | Government |
| | | 0 | | | | Support services |
| **Total** | **35** | **13** | | | | |

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## E.2  Scores

| No. | Age | Gender | SEI | Group | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20代 | Male | 130 | C | 1 | 2 | 2 | 2 | 0 | 1 | 1 | 2 | no | 0 | 2 | 1 | 2 | no | 0 | 0 | yes | yes | 1 | 2 | no | 1 | 2 | 1 | 0 | 2 | yes | 0.5 | 25.5 |
| 2 | 30代 | Male | 170 | C | 2 | 0 | 2 | 1.5 | 1 | 2 | 1 | 1.5 | no | 0 | 1 | 0 | 1 | yes | 0 | 0 | no | yes | 0 | 1 | no | 1 | 2 | 1 | 0 | 1.5 | yes | 1 | 20.5 |
| 3 | 20代 | Male | 128 | E2 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 2 | no | 1 | 2 | 1 | 1.5 | no | 0 | 0 | no | yes | 0 | 1 | no | 1 | 1 | 1 | 1 | 1 | no | 0.5 | 21 |
| 4 | 40代 | Male | 176 | C | 2.5 | 1 | 2 | 1.5 | 0 | 0 | 0 | 2 | yes | 1 | 2 | 1 | 1.5 | no | 1 | 1.5 | yes | yes | 1 | 2 | yes | 1 | 2 | 1 | 1 | 2 | yes | 1.5 | 28.5 |
| 5 | 40代 | Female | 202 | E2 | 2 | 2 | 2 | 1.5 | 1 | 2 | 0 | 0 | yes | 1 | 1 | 1 | 1.5 | no | 1 | 1.5 | yes | yes | 1 | 1.5 | no | 1 | 2 | 1 | 1 | 2 | yes | 1 | 28 |
| 6 | 20代 | Male | 186 | E1 | 2 | 2 | 2 | 1.5 | 0 | 0 | 1 | 1 | no | 0 | 0 | 1 | 1.5 | no | 1 | 1 | no | no | 1 | 1 | no | 1 | 2 | 0 | 1 | 2 | yes | 0.5 | 22.5 |
| 7 | 20代 | Male | 163 | C | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1.5 | yes | 1 | 2 | 1 | 1 | no | 1 | 1 | no | yes | 1 | 1.5 | no | 1 | 1 | 1 | 0 | 1 | yes | 0.5 | 27.5 |
| 8 | 20代 | Female | 174 | E2 | 2 | 2 | 2 | 1.5 | 1 | 1.5 | 1 | 2 | yes | 1 | 2 | 1 | 2 | no | 1 | 1 | yes | yes | 0 | 0.5 | yes | 1 | 2 | 1 | 1 | 1.5 | yes | 1 | 29 |
| 9 | 20代 | Female | 165 | E1 | 1.5 | 2 | 2 | 1.5 | 1 | 1 | 1 | 1 | yes | 1 | 2 | 1 | 2 | no | 1 | 1 | yes | yes | 1 | 2 | yes | 1 | 0.5 | 1 | 1 | 1.5 | yes | 1 | 29 |
| 10 | 40代 | Male | 163 | E1 | 1 | 1.5 | 2 | 2 | 1 | 2 | 1 | 2 | yes | 1 | 1.5 | 1 | 1.5 | no | 1 | 2 | yes | yes | 0 | 0 | no | 1 | 1.5 | 1 | 1 | 2 | yes | 1 | 28 |
| 11 | 20代 | Male | 199 | E2 | 1 | 2 | 2 | 1.5 | 0 | 0 | 0 | 2 | yes | 1 | 2 | 1 | 2 | no | 1 | 2 | yes | yes | 1 | 1.5 | no | 1 | 1.5 | 1 | 1 | 1.5 | yes | 0.5 | 26.5 |
| 12 | 20代 | Female | 180 | E2 | 1.5 | 2 | 2 | 1.5 | 1 | 2 | 0 | 2 | yes | 1 | 2 | 1 | 2 | no | 1 | 2 | yes | yes | 1 | 2 | no | 1 | 2 | 1 | 1 | 2 | yes | 1.5 | 32.5 |
| 13 | 20代 | Male | 149 | E1 | 2 | 2 | 2 | 1.5 | 1 | 2 | 1 | 0.5 | yes | 1 | 2 | 1 | 1.5 | no | 1 | 2 | yes | yes | 0 | 0.5 | no | 1 | 2 | 1 | 1 | 2 | yes | 1 | 29 |
| 14 | 20代 | Female | 204 | E1 | 2.5 | 2 | 2 | 2 | 1 | 2 | 1 | 1.5 | no | 1 | 1.5 | 1 | 2 | no | 1 | 1 | no | yes | 0 | 1 | no | 0 | 1 | 1 | 1 | 2 | yes | 1.5 | 29 |
| 15 | 20代 | Male | 212 | C | 2.5 | 2 | 2 | 2 | 1 | 2 | 1 | 0.5 | yes | 1 | 1.5 | 1 | 2 | no | 1 | 1.5 | yes | yes | 1 | 2 | no | 0 | 0 | 1 | 1 | 1.5 | yes | 1 | 28.5 |
| 16 | 20代 | Male | 192 | E1 | 2.5 | 2 | 1.5 | 2 | 1 | 1.5 | 1 | 0 | no | 1 | 2 | 1 | 1.5 | no | 1 | 2 | yes | yes | 1 | 2 | no | 1 | 2 | 1 | 1 | 1.5 | yes | 1.5 | 31 |
| 17 | 20代 | Female | 213 | C | 2.5 | 2 | 2 | 1.5 | 1 | 2 | 0 | 2 | yes | 1 | 2 | 1 | 1.5 | no | 1 | 1.5 | yes | yes | 1 | 2 | no | 1 | 2 | 1 | 1 | 2 | yes | 0.5 | 31.5 |
| 18 | 20代 | Male | 193 | E2 | 2 | 2 | 2 | 1.5 | 1 | 2 | 1 | 2 | yes | 1 | 2 | 1 | 2 | no | 1 | 2 | yes | yes | 1 | 2 | no | 1 | 2 | 1 | 0 | 2 | yes | 1 | 32.5 |
| 19 | 20代 | 男性 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Accuracy** | | | | | 76.7% | 90.3% | 95.8% | 84.7% | 72.2% | 69.4% | 66.7% | 70.8% | | 83.3% | 84.7% | 94.4% | 83.3% | | 83.3% | 66.7% | | | 66.7% | 70.8% | | 88.9% | 79.2% | 94.4% | 77.8% | 86.1% | | 63.0% | |

Figure E.1  Scores Comprehension assessment