A Mobile Application for Domestic Violence Victims Support and Evidence Recorder

Nurdatillah Hasim[1], Norhaidah Abu Haris[1], Nur Nisa Adliena Amaluddin[1], Hazirah Mohd Faizal[1]
[1]Universiti Kuala Lumpur, Kuala Lumpur, Malaysia

ARTICLE INFO

ABSTRACT

According to a study conducted in 2014 by Pusat Penyelidikan Wanita dan Jantina (KANITA) at Universiti Sains Malaysia (USM), 9% of women who have ever had a partner in Peninsular Malaysia had domestic violence at one compilation in their lives. In 2010, there were 3,173 cases of domestic violence reported. However, this number increased to 5,014 cases in 2015. According to the Corporate Communication division of Kementerian Pembangunan Wanita, Keluarga dan Masyarakat, calls to Talian Kasih have increased by 57 percent since Perintah Kawalan Pergerakan (PKP). However, calls and WhatsApp messages to the Women's Aid Organization (WAO) helpline were reduced to 73% of calls a week during the PKP. Before PKP were enforced, WAO received an average of 77.5% of calls and message via WhatsApp in a week. This reduction does not mean that there is a reduction in cases because it is feared that the victim will not be able to make calls due to the situation where they are always with the abuser during the period of PKP. This study aims to develop a mobile application to aid and guide people facing domestic violence. The primary function of this application is to help the victim; 1) to record their evidence in audio/video recording, 2) to help the victim to alert the polis in case of emergency, 3) to get help and find the nearest shelter whenever needed. This mobile application is developed using the Flutter framework. Firebase is used as the back-end component to store all the records. The result of this study is the improvement of the existing mobile application for domestic violence in Malaysia.

Corresponding Author: Nurdatillah Hasim, Malaysian Institute of Information Technology, Universiti Kuala Lumpur, 50250 Kuala Lumpur, Malaysia. Tel. +6017-5636371. E-mail: nurdatillah@unikl.edu.my

1. Introduction

Domestic violence is a pattern of violence, abuse, or intimidation used to control or maintain power over a partner who is or has been in an intimate relationship (Women's Aid Organisation, 2015). Any behaviours that can frighten, intimidate, terrorise, manipulate, hurt, humiliate, blame, injure, or wound someone are included as domestic violence (United Nations, 2022). According to a study conducted in 2014 by "Pusat Penyelidikan Wanita dan Jantina (KANITA)" at Universiti Sains Malaysia (USM), 9% of women who have ever had a partner in Peninsular Malaysia had domestic violence at one compilation in their lives. During the Movement Control Order (MCO) period from March 2020 to August 2021, 9,105 domestic violence cases were reported to the Ministry of Women, Family and Community Development (KPWKM). Also, calls to Talian Kasih from the same period were 4,534 calls. These numbers increased from the years before MCO (Rashidah et al., 2013).

Three main problems have been identified in this study:

- *Lack of evidence*: Most victims do not have any evidence to support their stand while making their police report. The victims must provide strong evidence to lodge a report regarding the violence (United Nations, 2022).

- *The need for mental support*: During the COVID-19 pandemic, many shelters closed to avoid the spread of COVID-19, which caused the victims to just stay at home with the abuser. This will lead to depression, anxiety, and self-harm as they cannot talk to people and seek help (Sutton, 2021).

- *Difficulty getting emergency help and shelter from the related authorities*: The victims do not save any emergency contact numbers that can help during critical times. This will lead to a dangerous situation where the victims cannot contact any emergency number to seek help (United Nations, 2022).

Hence this study aims to develop a mobile application that can aid and guide people facing domestic violence. The primary function of this application is to help the victim and bystander to send a report in the form of audio/video recording on domestic violence to the police in real-time.

- To study the process and services authorities used to deal with domestic violence cases.

- To develop an application that can help the victim and alert the associate authorities regarding the domestic violence case in the community.

2. Related Studies

The domestic violence victim support application is aimed to be a platform that can offer the victims of domestic violence to receive help from the legal authorities, such as emergency calls to the police and psychological help from the counsellor or associate authorities. Also, the application will be able to offer an encrypted evidence recorder to save all the evidence regarding the violence. The application aims to record the audio or video evidence of the violence and auto-save the evidence with the details such as location and timestamp.

2.1 Case Study 1: SaveME 999 POLIS

The first case study is SaveME 999 POLIS, an application developed by Telekom Malaysia Berhad and Malaysia Emergency Rescue Service 999 (MERS 999), especially for Malaysian citizens (SaveME 999 Polis, 2023). This application was developed for Malaysian citizens to send emergency requests for related cases to Royal Malaysia Police (PDRM). This application utilises Global Positioning System (GPS) in smartphones to detect the user's location during the emergency request sent to the MERS 999 Response Centre, and the application uses internet broadband to transmit the text messages.

Users can activate the application by entering the 999 codes before accessing the homepage. Users can enter their type of emergency to assist PDRM in sending fast, accurate help. The GPS address, and sender's details, such as registered name, phone number, address, and emergency details, will be sent to MERS 999 Response Centre (MERS 999 RC). Users also can immediately call MERS 999 by clicking the 999-call button.

2.2 Case Study 2: Penang Stops Violence Ver. 2

Penang's Women Development Corporation (PWDC), in cooperation with Pusat PEGIS, were actively developing the application in 2021 to prove the state government's seriousness in combatting violence and ensuring the safety of the citizens (Kokhoay, 2021). The application is developed to help people locate the closest First Support Point. First Support Points is a programme launched under Penang State Safe Family Policy to link victims of domestic abuse with the necessary support.

The application mainly functions to display the First Support Points around Penang. Users can enter or search for their location, and the application will display the nearest first support points and provide the information on them. Users can also select the phone numbers provided to call the support centres. The application can navigate users to the selected First Support Point.

2.3 Case Study 3: National Care for Domestic Violence (NCDV)

Police and domestic violence organisations can submit third-party referrals to NCDV directly through the NCDV app. The software makes it simple to complete recommendations for prompt security (NCDV, 2020). The application can also redirect users to the NCDV helpline contact and email for advice and legal support. Anyone who has recently been the victim of domestic violence or abuse or has been threatened with it can petition for an emergency court injunction through this application. When you get in touch with NCDV via the application, this can occasionally be issued within 24 hours, and to assist victims in obtaining prompt protection, we collaborate closely with the police, attorneys, and other support organisations (Domestic, Family, and Sexual Violence, 2022). Users may send a quick referral through the application by entering the information needed, such as the victim's details. Also, through the application, users may order any protection tools listed for their protection.

2.4 Case Study 4: Sunny App

Women with and without disabilities can use this app to learn about abuse and violence. Women with disabilities jointly created Sunny to ensure its users the best possible support (Sunny App, 2022). The

application can also help the victims if they experience violence or abuse. Even though the application is designed mainly for women with disabilities, it also functions well for those without disabilities. The application also helps women who experienced violence or abuse to know their rights, learn about the abuse and violence, get help, and share their stories with other users. Users can also call the helpline for free and confidential assistance and emergency services in times of danger.

2.4 Critical Analysis

The analysis and comparison of the systems have been discussed and listed in Table 1 below. The features identified for the application are Operating System (OS) type, emergency call button, emergency helpline/hotline, emergency alert, display nearest first support point, provide information about abuse or violence, save user's information disguise appearance.

Table 1. Comparison Table of Apps Features in Related Studies

Features	Application			
	SaveME 999 POLIS	Penang Stops Violence	NCDV	Sunny
OS Type	Android and iOS	Android and iOS	Android and iOS	Android and iOS
Emergency call button	/		/	/
Emergency helpline/hotline		/	/	/
Emergency alert	/			
Display nearest first support point		/		
Provide information about abuse or violence				/
Save user's information	/		/	
Disguise appearance				/

Based on the comparison and research on the listed existing applications above, we can say that applications are made to help domestic violence abuse. Those applications may not have all the needed features, but most include the most essential features to help the victims. A digital evidence log, emergency help, and general information regarding the abuse will benefit the victims. In addition, having an online consultation with a counsellor or other associated authority would be better to support the victims mentally. A victim support application also needs strong security to secure all the saved information and the ability to connect with other related platforms.

3. Prototype Development

The software development process is depicted using the waterfall model, which follows a linear sequential flow. This implies that a development phase can only start if the one before it is finished, and the phases do not overlap. The waterfall methodology is chosen for this system because it allows control of each phase as the development moves from the requirement to the design, implementation, testing and deployment. The stages of development are carried out in a specific order. In addition, the waterfall methodology is also easy to use and understand.   This methodology is also recommended for the smaller system and when the requirements are well understood (Brewer & Dittman, 2013).

- *Requirement* – All potential system needs are gathered and outlined in a requirement specification document during this stage. The requirement will be gathered by conducting interviews with the stakeholders and potential clients to identify the scope and contents of the system.

- *Design* – In this phase, the required specifications from the first phase are examined, and the system design is created. This system design aids in determining the overall system architecture as well as the hardware and system requirements. The design includes the system flow, the database, and the user interface.

- *Implementation* – The system will be developed through this phase based on the requirements gathered and the design created from the previous phases. The system will be implemented using the dart language as the programming language and firebase for the database.

- *Testing* – The entire system is merged following the testing of each unit created during the implementation phase. The entire system is tested for errors and failures after integration. All system functionalities,

including the non-functional requirement, will be tested during this phase to ensure the system works well and all the requirements meet.
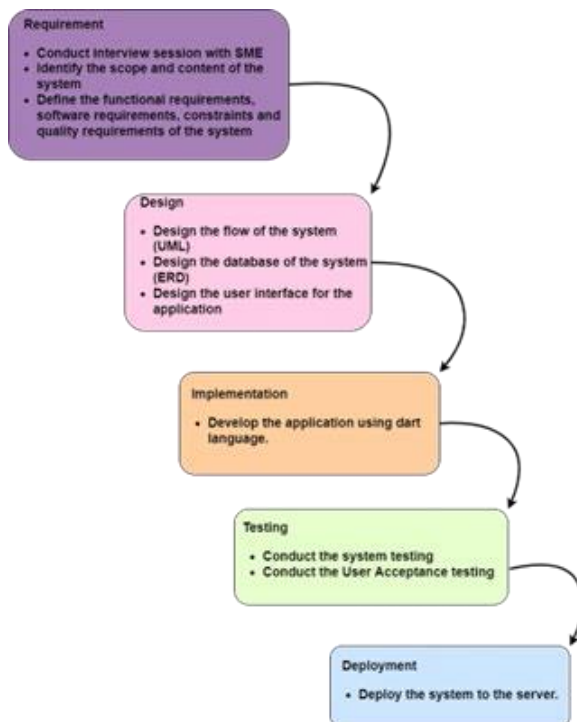

Figure 1. Waterfall Methodology

4. Conclusion

This application is expected to do justice for domestic violence victims. By having this application, the victims can keep all the evidence that will help them defend themselves in the future. Besides, the application can help the victims to find any nearest shelters and hospitals if they want to escape from the abuser and seek medical help. Everyone should feel safe in their comfort place. Hence, this application will make   the victims safe even in the same place as the abuser, as the help is just a click away.

References

Sutton, H. (2021) "Covid-19 increases challenges for Combating Domestic Violence," Campus Security Report, 18(2), pp. 9–9. Retrieved from: https://doi.org/10.1002/casr.30800.

Women's Aid Organisation. (2015). Case Studies in Domestic Violence Response.

Sunny App (2022) *1800RESPECT*. Retrieved from: https://www.1800respect.org.au/sunny.

NCDV referral app emergency injunction referral NCDV (2020) NCDV. Retrieved from https://www.ncdv.org.uk/mobile-app/.

Domestic, family, and sexual violence. (2022) Retrieved from https://www.facs.nsw.gov.au/domestic-violence.

World Health Organization. (2022). Responding to Intimate Partner Violence and Sexual Violence against Women. Retrieved from http://apps.who.int/rhl/guidelines/9789248595/en/.

United Nations. What is domestic abuse? (2022). Retrieved from https://www.un.org/en/coronavirus/what-is-domestic abuse.

Rashidah Shuib et al. (2013). Domestic violence and women's well-being in Malaysia: Issues and challenges in conducting a national study using the WHO multi-country questionnaire on women's health and domestic violence against women. Social and Behavioural Sciences, 91, 475-488.

Brewer, J.L. and Dittman, K.C. (2013) Methods of IT project management. West Lafayette, IN: Purdue University Press.

Saveme 999 polis (2023) MERS 999. Available at: https://999.gov.my/saveme-999/saveme-999-polis/.

Kokhoay (2021) Penang to Fly Orange Flags in PGO campaign to stop violence against women and children, Buletin Mutiara. Buletin Mutiara. Available at: https://www.buletinmutiara.com/penang-to-fly-orange-flags-in-pgo-campaign-to-stop-violence-against-women-and-children/.