



SI-PADUKA Information System Guidelines and Complaints on Violence Against Children in South Sumatera Province

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Abstract. From 2023 until 2024, cases of bullying that occur in children have increased, this is due to the lack of education received by the community and the lack of parental guidance for social activities in the child's environment. The Regional Child Protection Commission of South Sumatera (KPAD SUMSEL) is a commissioner who works under the Indonesian Child Protection Commission (KPAI) which handles cases of violence against children. Currently, KPAD SUMSEL does not have a special platform for reporting cases of violence against children, so reporting tends to be slow to handle and causes psychological trauma to the victim. This research will build a reporting application for cases of violence against children, with innovation in the form of location geotagging, so the application can deliver the location of the incident and receive it by the operator real-time. The application that is built not only provides education and information related to the prevention of violence but can also be a digital platform for the public to report cases or incidents of bullying around them so that cases can be followed up immediately and handled appropriately, the results of this application shows the user location accurate and effectively for applied to the community to handle and prevent violence against children, especially in the province of South Sumatera.

Keywords: Bullying, Application, KPAD, Geotagging Location, Real-time System.

1 Introduction

1.1 Problem Analytics

Over the past few years until 2024, cases of violence or bullying against children in Indonesia have increased [1]. The Indonesian Child Protection Commission (KPAI) reported 2,355 cases of child protection violations from January to August 2023 [2]. Of these cases, 861 occurred in educational units. Based on reports from the KPAI, there were 1,494 cases of child protection violations, with 487 cases of sexual violence, 236 cases of physical and/or psychological violence, 87 cases of bullying, 27 cases of provision of educational facilities, and 24 victims of policies [3]. Aggressive behaviour in children, such as violence and bullying, is associated with the risk of mental disorders in the life span, poor social functioning,

and lower educational processes [4]. The Central Statistics Agency (BPS) stated that most students in Indonesia who experience bullying, or what is often referred to as bullying, are boys. The percentage of bullying in male students in grade 5 of elementary school is 31.6%, while for female students is 21.64% and nationally it is 26.32% [5].

Bullying cases in children are also related to the nutrition obtained by children [6], school-age children are expected to have normal nutritional status. This, in addition to supporting children's health, also minimizes the occurrence of bullying. Bullying is an act of intimidation by one or more children to other children which can be in the form of verbal bullying, physical bullying, relational bullying and bullying via social media [7]. Several factors are the reason for bullying, one of which is an abnormal physical form related to nutritional status such as "fat", or "skinny", as mentioned that there are several characteristics that are identical to a person including appearance or behavior that is different from most people, in general, is the reason for bullying. Some of those who become victims of bullying are those who have a different physical size from most children of the same age. Children who tend to be smaller, taller, or have a higher weight are more susceptible to being victims of bullying. Therefore, it is important to maintain children's nutritional status in normal conditions in addition to health and to avoid bullying.

Based on the results of observations by the Polsri Team with related agencies, currently, according to data from the South Sumatra Women's Empowerment and Child Protection Agency (*Dinas Pemberdayaan Perempuan dan Perlindungan Anak*) or DPPPA, there were 408 cases of violence against children and women in South Sumatra during 2022, with 449 victims. Most of the 408 cases occurred in Palembang, with 59 cases of sexual violence. Lahat Regency experienced 51 cases, Ogan Ilir 46 cases, Musi Rawas 39 cases, Pagaralam 36 cases, Banyuasin 31 cases, Ogan Komering Ilir 31 cases, and Ogan Komering Ulu 29. Furthermore, there were cases in Muara Enim 24, Empat Lawang 15, Prabumulih 14, PALI 14 cases, North Musi Rawas 7 cases, Lubuklinggau 4 cases, Musi Banyuasin 3 cases, South Ogan Komering Ulu 3 cases, and East Ogan Komering Ulu 2 cases.

The South Sumatra Regional Child Protection Commission (KPAD SUMSEL) operates under the Indonesian Child Protection Commission (KPAI). KPAI is a government agency established under DPPPA SUMSEL and is responsible for implementing programs aimed at stopping and handling violence against children. Currently, many people, especially in the SUMSEL region, do not know the main duties of the KPAD and the procedures for handling cases of violence against children. Many of them still do not report acts of violence against children, so that prolonged trauma will be caused by the child's development. In addition, reporting cases of violence against children to the police without assistance from the KPAD can slow down the process of handling and healing in children.

Currently, reporting from the public to help handle cases is only via telephone or WhatsApp applications that are owned personally, KPAD SUMSEL does not yet have a special platform for reporting cases of violence against children. Through this research, a reporting application for cases of violence against children based on a website will be built with additional innovation for geotagging, so that sending the location of the incident can be done in real-time if the situation is an emergency. The application that is built not only provides education and information related to

prevention but can also be a place or digital platform for the public to report cases or incidents of bullying around them.

1.2 Objectives

The purpose of this study is to create a system that can provide guidance and education to the community regarding the role of partners in preventing and handling cases of violence against children by implementing location geotagging techniques in reporting cases of violence against children to provide information on the location of the reporter in real time, then analyzing the effectiveness of the implementation of the system built based on the use of partners in several case studies that occurred in South Sumatra Province.

The benefits obtained from this study are that reporting cases of violence against children that occur in the community can be easily monitored by partners through the system that is built so that it can be handled quickly. and can provide education to the community regarding the role of partners in handling cases of violence against children, so that the community can report violence against children that occurs in their environment. so that through the system that is built will reduce cases of violence against children, especially in South Sumatra Province.

2 Literature Review

2.1 State of The Art

The development of applications for reporting and handling bullying cases has been widely carried out by researchers in recent years [8]-[11]. The research conducted by Glassner in 2020 discussed in the study is an exploration of the relationship between bullying victimization, depressive symptoms, and delinquent behavior in adolescents. Glassner highlights how bullying victimization can lead to increased depressive symptoms, which in turn can contribute to aggressive behavior. The study emphasizes the importance of addressing bullying early to prevent long-term negative impacts on adolescent mental health and behavior. The results of the study showed a significant relationship between bullying victimization, depressive symptoms, and delinquent behavior in adolescents. Bullying victims were found to be associated with increased depressive symptoms and delinquent behavior in both male and female adolescents.

In 2021, Kaufman and team [11] conducted a study that explored how a classroom social structure network diagnostic could help teachers more systematically identify and reduce bullying. First, they discussed research showing promising effects of a social approach to reducing health problems. Second, they discussed a systematic, stepwise approach for teachers to interpret the diagnostic and translate it into structural action. Overall, this proposal aims to raise awareness of the potential for reducing bullying and provide researchers with direction for further empirical research on the role of teachers in addressing bullying and the circumstances in which it may be influential [11].

Meanwhile, in 2022 [12] conducted a study on the location-based application for reporting violence and harassment against girls and boys created to address problems that occur in the city of Bengkulu. This application allows targets to report themselves

via their mobile devices and automatically detects the target's location so that preventive measures can be taken to prevent greater impacts on the victim.

In 2023, a SIAP PPAK application was developed by [10] which was designed to accelerate the process of reporting cases of women and children as an innovative tool to improve security and protection for women and children. This research can produce significant results in the real world, such as the use of SIAP PAK on a large scale in collaboration with law enforcement agencies and the implementation of a comprehensive approach to addressing violence against women and children.

2.2 Child Abuse Reporting Application

Applications for public reporting of cases of violence against children have been developed in previous research, research conducted by [12] Building a system to ensure that information about the location of the complaint is correct, this system has automatic location detection capabilities. The research and development (R&D) approach and the waterfall approach are used as system development methods to compile this system. The waterfall method collects information through the interview process and testing the system that has been developed.

Furthermore, research developed by [13] an application that uses the thinking design process to provide public services such as information, education, facilitating reporting, and especially emergency calls to people closest to or trusted in cases of violence against oneself or others in the community. The results of the trial design of the child and women's protection application are mobile-based applications that allow users to get information, become more aware, report, and get fast service.

3 Methodology

The following are the implementation stages in designing "SIPADUKA - Information System and Guidelines for Reporting Child Violence to Reduce Bullying Cases".

The first stage is Input: The data collection process will be carried out through partners, community surveys, and searching for relevant literature studies that will be used as references based on the problems raised in this study. Then, continue to the next stage is the process: The SIPADUKA application design will be carried out, developing and implementing the SIPADUKA system design in full by providing assistance or training in the use of the system applied in the form of community service.

The third stage is Output: At the output stage, the application of science and technology to the community will be carried out, disseminating information through scientific publications in reputable journals and establishing intellectual property rights.

Fourth is Outcome: The results obtained, namely the publications published, can be used as references for related research and community service, then there is an increase in the application of science and technology to the community and documentation that can be distributed to the community as a guideline or guide.

The final stage is Evaluation: Testing the system that has been built, as well as assistance in the use of the system to the community as a sample of users and conducting a final survey as a sample of SIPADUKA application users.

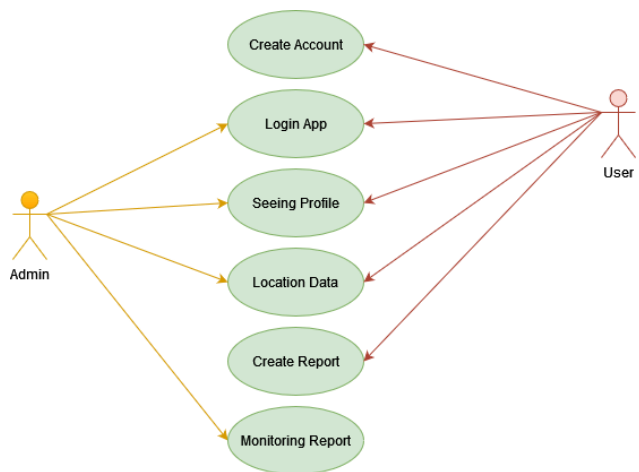


Fig. 1. Use Case Diagram for SIPADUKA

- The Use Case Fig. 1., can be described as follows:
- 1. The administrator (Admin) can access application features such as Application Login, View Profile, Location Data, and Monitor Reports.
 - 2. Users (Victims or Eyewitnesses from the community) can access features such as Creating an Account, Application Login, Viewing Profile, Location Data, and Creating Reports.

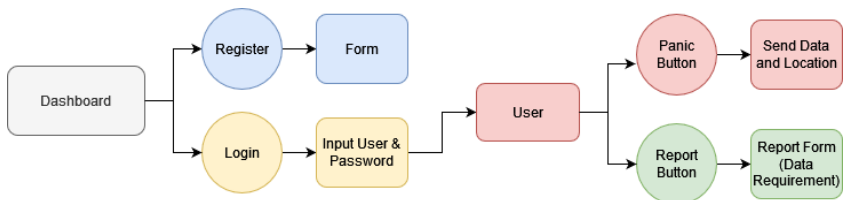


Fig. 2. Flowchart System SIPADUKA

The flowchart in Fig. 2. can be described as follows: Users are required to register a registration form on the application to access its features. If the user has previously registered, they can immediately log in using the user and password, then if successful they will be directed to the menu, if the user presses the red button (Panic button) it will automatically send the location data of the incident, while if the user wants to report then the user can fill out a form such as incident, date of incident, location of incident.

4 Results And Discussion

Users of the application/system can directly view information and service guides from the main website of KPAD SUMSEL on the page <https://kpadsumsel.o.id>, then for the community who will report incidents of child violence that occur in the surrounding environment, or directly see/experience the incident can immediately report using the report form or press the emergency button that will send the location of the incident if it requires fast handling. From the system built based on the website, a system in the form of a mobile application has also been developed. Users who have registered or registered an account can go directly to the login page and make a report of the incident that has occurred in real-time.

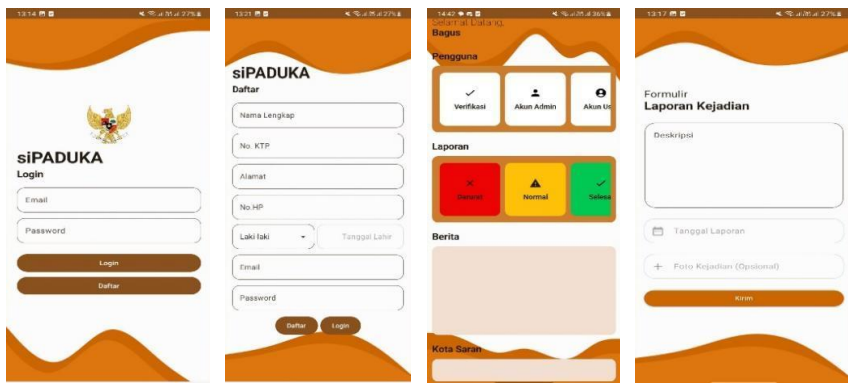


Fig. 3. User Interface of SIPADUKA Application

From Fig.3. explanation from left to the right is the login page which contains email as username and password, then is the registration user page, the third is the user or admin welcome pages which contains information user, emergency button in the red label, normal report in yellow and the green for see done reports, then the last picture shows a form of evidence reporting from a user which contains with description, date, and picture as a piece of evidence if any.

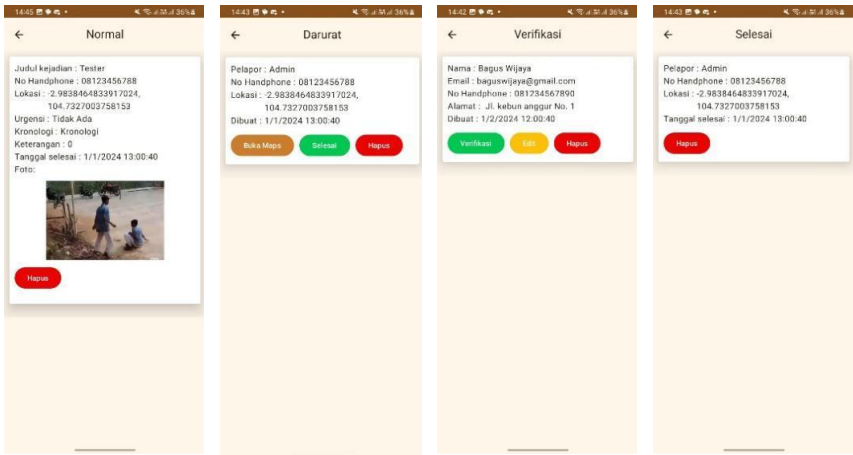


Fig.4. Admin Page for Controlling Reports.

From the left to the right in Fig.4. show a normal report has been sent from the user which contains information or identity user chronology as description, date, and evidence taken from the picture. Then if the user clicks an emergency button, the admin will receive a notification soon and information about information of the user and location in maps. Admin can also verify if data is valid and under the handling of the party. Then admin can view the reports that have been handled by the KPAD team.

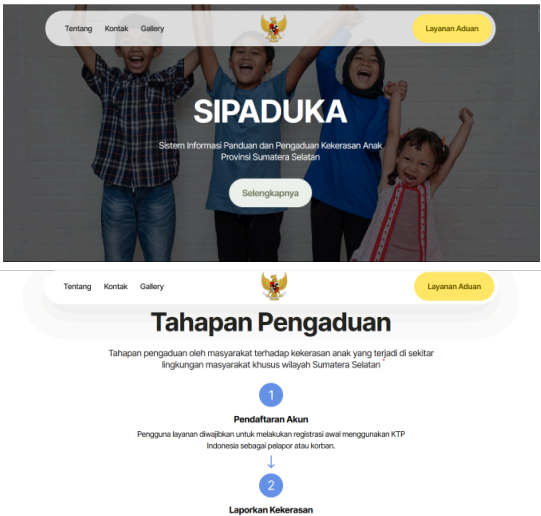


Fig. 5. Landing Page of KPAD SUMSEL

Fig.5. show the landing page of KPAD SUMSEL, the page on the website can be accessed at the URL <https://kpadsumsel.or.id>. The application is not also built for mobile but on the website, people can access it anywhere and anytime on many platforms of the Internet.

When people click complaint service on the top right corner, the user will be directed to the form of registration and can send evidence reports or emergencies by clicking on the emergency button on the page.



Fig.6. Main Page of SIPADUKA on Website

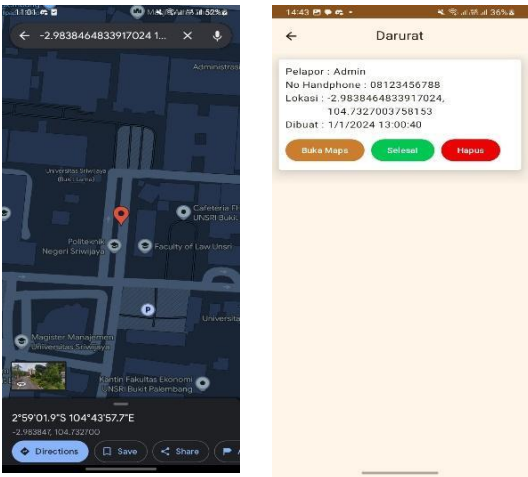


Fig.7. Geotagging Location on Application

Fig 7 shows the geotagging location when the user clicks the emergency button, the administrator handled by KPAD will get the notification on the application and get data user containing of phone number, location latitude and longitude, date and time created. The administrator can open specific locations by the map button which is integrated with API Google Maps. The administrator can see the tag and specific location sent by the user.

Table I. Black Box Testing of SIPADUKA

No.	Subject Item	Action	Expected Results	Results	Validation
1	Main Page	Home click button	Show the SIPADUKA main page	SIPADUKA page is shown	Valid
2	About Page	About button click	Show the information about KPAD SUMSEL	Information about KPAD SUMSEL shown	Valid
3	Rules Page	Click stages menu	Show the stages of report evidence	Shown rules of report	Valid
4	Information Contact	Click information menu	Show the information about the contact of KPAD SUMSEL	Information contact of KPAD SUMSEL is shown	Valid
5	Gallery Page	Click gallery menu	Show the activities picture of KPAD SUMSEL	Picture shown by the gallery	Valid
6	Video Activities Page	Click video menu	Show the video activities of KPAD SUMSEL	Video activities are shown	Valid
7	Registration Success	Fill that form completely	Registration success and the user can login	Users can log in by username and password registered	Valid
8	Registration Failed	Fill that form with a password of less than 5 characters or not the same	Registration failed with a notification at the bottom of the page	Notification of failed registration is shown	Valid
9	Login Success	The user inputs the correct username and password	Users will be directed to the main page of the report form	The report form and emergency button appear	Valid
10	Login Failed	User input an incorrect username or password	Notification of wrong username or password appear	Notification appears at the bottom	Valid

11	Report Form	Fill form completely	Reports description will be sent to admin	Admin gets the data of reports form	Valid
12	Emergency	Click emergency button	Information location will be sent to the admin	Admin gets the data of user and location in real-time	Valid
13	Admin Page	URL admin	Show the information about admin and data reports	Information of admin is shown as data of reports	Valid
14	Verification	Verification clicks	Users can get the notification	Notification was sent	Valid
15	Done Report	Admin or user main page	Admin or user can see the done reports	Done reports are shown in the main page	Valid

5 Conclusion

This research is about SIPADUKA - Information System and Guidelines for Reporting Child Violence to Reduce Bullying Cases in South Sumatera Province. The application that was built was made to make it easier for users, especially the public, to make reports related to child abuse. The public will easily send reports and get direct handling, precisely and quickly. The black box testing the results shows that 100 % of the application is valid for use. Trying and error have occurred while the application is building, so the test results can be a benchmark in system development.

The suggestions in this study will then be developed and widely socialized so that they can continue to be used by the public as digital complaints. It is hoped that the public will no longer be afraid to report incidents of child abuse that occur around them and will also reduce cases of bullying that appear on social media, both against victims and their families.

Acknowledgement

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