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PRACTICES OF MDRRMO BAY LAGUNA TO VEHICULAR ACCIDENTS; INPUT TO POLICY FORMULATION

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ABSTRACT

The United Nations General Assembly has set an ambitious target of halving the global number of deaths and injuries from road traffic crashes by 2030. This study supports this UN Goal by aiming to improve vehicular accident response of MDRRMO, Bay, Laguna. The study determined MDRRMO Bay's level of practice and their levels of efficiency and effectiveness. It also looked the correlation of their level of practice as against the details of the accident and their levels of efficiency and effectiveness. From these results, policy recommendations were formulated.

The researcher used Quantitative Research using Survey Method. Respondents were the injured casualties of vehicular accidents that happened from January-December 2024 in Bay, Laguna. The researcher surveyed 30% of the 140 injured casualties which totals to 42 respondents.

Result revealed that vehicular accidents in Bay, Laguna usually happen in Barangay Dila, in between 2pm-10pm, and in May and September. Their average response time usually falls under 6-10 minutes.Self-accidents are the usual type of occurring accidents in Bay, Laguna.The study concludes that MDRRMO Bay, Laguna is very effective and efficient but needs improvement in crowd control. Their level of practice is exemplary. The results showed that the risks present in the vehicular accidents in their area are less to moderate and the respondents rated them as highly trained, equipped, efficient and effective. It is recommended that MDRRMO Bay enhance the safety of responders by addressing the need to keep up with changing techniques, enhance skills, increase knowledge, and improve decision-making abilities.

KEYWORDS – *Details of accident, MDRRMO, Road Traffic Crashes, Vehicular Accidents, Vehicular Accident Response.*

INTRODUCTION

Road traffic injuries or vehicular accidents are the leading cause of death among children and young adults aged 5–29 years. Around 92% of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have around 60% of the world's vehicles. And more than half of all road traffic deaths are among vulnerable road users, including pedestrians, cyclists and motorcyclists. The United Nations General Assembly has set an ambitious target of halving the global number of deaths and injuries from road traffic crashes by 2030 (WHO, 2023)

These numbers spike up even higher every year as the number of vehicles grow. Sadly, fatalities and injuries are aggravated due to improper to none first aid measures. In a study on National Road Traffic Safety Master Plan in the Socialist Republic of Vietnam in 2020, only 30.16% of traffic accident victims received first aid onsite. Most of the victims didn't receive first aid and were transferred immediately to the hospitals. These situations however either increased the risk of fatality or more serious side effects for the victims. (JICA, 2020).

In the Philippines, data from the Philippine Statistics Authority (PSA) indicates that road traffic deaths increased by 39% from 7,938 deaths in 2011 to 11,096 deaths in 2021. It is said to be leading cause of death among Filipinos 15-29 years old and a major killer among children. It is said to costs about 2.6% of the country's Gross Domestic Product. To address this the government has launched the Philippine Road Safety Action Plan 2023-2028. This serves as the blueprint for the country's road safety initiatives, and seeks to reduce the number of road traffic deaths by 35% in 2028. (WHO, 2023)

In addition to this, the signing of the RA 10121 which provides a comprehensive all-hazard, multi-sectoral, inter-agency, and community-based approach to disaster risk management through the formulation of the National Disaster Risk Management Framework. Under this framework, PDRRM (for the provincial level and MDRRM (for the municipal level) where formed. These teams are obligated to respond to all hazard situations such as vehicular accidents. This law emphasized the development and enhancement of systems, processes and procedures towards a safer, climate-change adaptive, and disaster resilient nation. (DSWD, 2024)

The high incidence of vehicular accidents could still be reversed with the discipline of responsible drivers and pedestrians. And the high casualty rates could diminish with proper and immediate response from the MDRRMO when a vehicular accident happens. Thus, the researcher decided to do this thesis to give light to possible policy changes to enhance the Vehicular Accident Response Rate of MDRRMO Bay, Laguna.

OBJECTIVES OF THE STUDY

The objectives of the study are to identify the existing practices of the MDRRMO in Bay, Laguna, in responding to vehicular accidents, and to enhance the efficiency and effectiveness of their response.

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MATERIALS AND METHODS

This study employed a descriptive-correlational quantitative design to systematically describe and analyze the practices of the MDRRMO in Bay, Laguna, concerning vehicular accident responses.

The survey method was utilized to observe trends and patterns across various demographics and responses. The study targeted 30% of vehicular accident victims responded to by the MDRRMO from January to December 2024, totaling 42 out of 140 incidents. A random sampling technique was applied, ensuring each individual had an equal chance of selection. This approach aimed to capture unbiased assessments from grassroots-level victims regarding the MDRRMO's response effectiveness.

Following topic approval from the Laguna State Polytechnic University - Sta. Cruz Main Campus, the researcher identified research problems and formulated objectives. A self-constructed survey questionnaire was developed and underwent pilot testing, reliability testing using Cronbach's alpha, and validity testing. Upon finalization, data collection was conducted through the administration of the survey to selected respondents. Collected data were then tabulated and statistically processed to derive results, conclusions, and recommendations. The primary instrument was a self-made survey questionnaire, structured into four sections: 1. Details of the vehicular incident 2. Levels of practice of the MDRRMO 3. Efficiency and effectiveness of the MDRRMO's response 4. Suggestions for policy design recommendations

The questionnaire items were formulated based on the study's objectives and relevant literature. Data were analyzed using the weighted mean to assess the efficiency and effectiveness levels of the MDRRMO's vehicular accident response. Responses were measured on a Likert scale, facilitating the quantification of perceptions and experiences.

RESULT AND DISCUSSION

On the details of Vehicular accidents, results showed that most vehicular accidents took place in between 2pm-10pm (46%), at Barangay Dila (41%) and in the months of May and September (15.4%). In the description of vehicular accident, topping the rank are those who have Self Accident with a frequency of 13 and a percentage of 30.95%. This was followed by Pedestrian vs Motor with a frequency of 7 and a percentage of 16.67. Results showed that around 90.48% of the respondents experienced risks that are less to moderate than the ones enumerated above. Bleeding ranked second at 4.76%. It is worth noting that less to moderate incidents were responded to by the MDRRM Bay, Laguna. Results showed that most responders arrive after 6-10 minutes with a frequency of 20 or 47.62%. This is followed by response time of 1-5 minutes with a frequency of 12 or 28.57%. This is the mostly accepted ideal response time. There was just one case that reached 21-25 minutes before responder arrives.

On the level of practices of the MDRRMO Bay, Laguna in responding to Vehicular Accidents. Results yielded a mean of 3.57 (for a 4-scale Likert) which is interpreted as Very Much Practiced. This means that the MDRRMO of Bay, Laguna are practicing the basics procedures of Vehicular Response. Ensuring optimal safety of the team members as well as the victims yielded the highest mean of 3.83. However, performing crowd control seems to be a challenge for them since the mean is slightly lower than the rest and is interpreted as practiced.

On the level of Efficiency and Effectiveness of Vehicular Response in terms of response time. Results yielded a mean of 3.75 (for a 4-scale Likert) which is interpreted as Highly Efficient and Effective.

In Table 12, Significant Relationship between MDRRMO Practices and Details of Accident. The correlation between these two variables is relatively very weak except for the use of Personal Protective Gear and Description of vehicular accident (r=0.383, p=0.042, Moderate); Methodical gathering of information and Description of vehicular accident (r=0.308, p=0.047, Weak); Readiness of Necessary Equipment and Description of Vehicular Accident (r=-0.251ns, p=0.109, Weak); Crowd Control and Description of vehicular accident (r=0.369, p=0.043, Weak) and Crowd Control and Response Time (r=0.321 p=0.038, Weak). These variables showcased Moderate to Weak Correlations.

In Table 13 shows the result of the test of Significant Relationship between the Level of Practices of the MDRRMO and their level of efficiency and effectiveness. The correlation between these two variables ranges from Very Weak to Strong. Those with strong correlations are Use of Protective Gear and Response Time, Use of Protective Gear and Training and Skills of Responder, Readiness of Necessary Equipment and Response Time, Readiness of Necessary Equipment and Public Awareness and Compliance, Assisting EMT and Nurse when necessary and Response Time, Assisting EMT and Nurse when necessary and Training and Skills of Responder, and Crowd Control and Public Awareness and Compliance.

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Table 1. ***Frequency and Percentage Distribution of the Details of the Vehicular Accident According to Accident Location, Month when Incident Happened and Time***

Location (Place of Accident)	Time When Vehicular Accident Took Place			Month When Accident Happened as Per Record												Sub/ Grand Total
	6:01 am - 2:00 pm	2:01pm - 10:00 pm	10:01pm - 6:00 AM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Calo	3	3	1'	1	0	1	2	0	0	1	0	1	0	1	0	7
Dila	4	8	4	0	3	0	1	2	2	0	0	3	0	2	3	16
Puypuy	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Maitim	2	1	1	0	0	2	0	0	1	0	0	1	0	0	0	4
San Agustin	0	2	3	0	0	0	1	2	1	0	0	1	0	0	0	5
Sto. Domingo	2	2	0	0	0	0	1	2	1	0	0	0	0	0	0	4
Calauan	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Sub-Total	11	**18**	10	1	4	4	5	**6**	5	2	0	**6**	0	3	3	**39**
Percentage	28%	**46%**	26%	2.6%	10%	10%	12.8%	**15.4%**	12.8%	5%	0	**15.4%**	0	7.7%	7.7%	

Table 1 shows the Frequency and Percentage Distribution of the Details of the Vehicular Accident According to Accident Location, Month when Incident Happened and Time. Basing on the responses, most accidents took place in between 2pm-10pm (46%), at barangay Dila (41%) and in the months of May and September (15.4%).

As for the time of incident, 2pm-4pm is known to Filipinos as Siesta Time while 7pm-10pm is ideally the sleeping time for Filipinos. These time block may have received the most number of incidents since it is the time that drivers may have dozed off. The night time is also prone to accidents due to the darkness. Some unlighted areas may have caused miscalculations or confusion to the driver. As for the location of the accidents, results showed that most of the incidents happened at Barangay Dila followed by Barangay Calo. These two barangays are closest to the National Highway and where intersections are. These attributes could be the reason why they have so much vehicular accidents. But looking at the total number of incidents, it is fairly low since the National Highway in Bay, Laguna is wide and traffic is not that heavy. Thus, it has lesser incidents.

Table 2. ***Frequency and Percentage Distribution of the Details of the Vehicular Accident According to description of vehicular accident***

Description	Freq	%
1-Pedestrian VS Tricycle	0	0.00
2- Pedestrian VS Car	1	2.38
3-Pedestrian VS Motor	7	16.67
4-Motorcycle VS Car	5	11.90
5-Self Accident	13	30.95
6-Motorcycle VS Motorcycle	6	14.29
7-Pedestrian VS Jeep	0	0.00
8-Bicycle VS Car	1	2.38
9-Motorcycle VS Jeep	3	7.14
10- Motorcycle VS Van	3	7.14
11-Motorcycle VS Tricycle	1	2.38
12-Vehicle Brake	0	0.00
13- Van VS Tricycle	1	2.38
14-Motorcycle VS Ambulance	1	2.38
Total	42	100.00%

Table 2 shows the Frequency and Percentage Distribution of the Details of the Vehicular Accident According to description of vehicular accident. Topping the rank are those who have Self Accident with a frequency of 13 and a percentage of 30.95%. This was followed by Pedestrian vs Motor with a frequency of 7 and a percentage of 16.67.

The state of Road Safety in the Philippines was briefly described by Sigua (2022) The major causes of accidents were found to be related to the road, the driver and the vehicle. While safe vehicles and good roads are vitally important /or safety, the key element in accident prevention is still the driver him/herself. A vehicle or highway defect may also play a part, but the principal cause is generally human failure.

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Table 3. ***Frequency and Percentage Distribution of the Details of the Vehicular Accident According to Risks present during the incident***

Risks	Freq.	%
Fuel	0	0.00
Bleeding	2	4.76
Head Trauma	0	0.00
Fractures	1	2.38
Unconscious	1	2.38
Others	38	90.48
Total	42	100.00

Table 3 shows the Frequency and Percentage Distribution of the Details of the Vehicular Accident According to description of risks present during the incident. Results showed that around 90.48% of the respondents experienced less to moderate risk than the ones enumerated above. Bleeding is second in rank at 4.76%. It is worth noting that less to moderate incidents were responded to by the MDRRM Bay, Laguna.

Kraft and Associates (2024) enumerated the common risk of injuries resulting from car accidents. Among these are Traumatic Brain injuries, spinal cord injuries, back injuries, burns, internal injuries, fractures broken bones, disfiguring facial injuries and scars, limb loss and amputation, neck injuries and whiplash, knee injuries, joint injuries, lacerations and bruises, post-traumatic stress disorder, soft tissue injuries, and crush injuries. These are the more alarming and serious risks.

Table 4. ***Frequency and Percentage Distribution of the Details of the Vehicular Accident According to Response Time***

Response Time	Freq.	%
1 Minute – 5 Minutes	12	28.57
6 Minutes – 10 Minutes	20	47.62
11 Minutes – 15 Minutes	5	11.91
16 Minutes – 20 Minutes	2	4.76
21 Minutes – 25 Minutes	1	2.38
26 Minutes and Above	2	4.76
Total	42	100.00

Table 4 shows the Frequency and Percentage Distribution of the Details of the Vehicular Accident According to response time. Results showed that most responders arrive after 6-10 minutes with a frequency of 20 or 47.62%. This is followed by response time of 1-5 minutes with a frequency of 12 or 28.57%. This is the mostly accepted ideal response time. There was just one case that reached 21-25 minutes before responder arrives.

The Response Time theory suggests that faster response times in emergencies lead to better outcomes, including reduced fatalities and injuries. This is particularly relevant in the context of vehicular accidents, where timely intervention is critical.

PNP Chief Rommel Marbil has intensified 911 emergency response calls within three minutes. He added "Our citizens rely on us during emergencies, and we must ensure that every 911 call receives the swift and effective response it deserves. This directive is more than just a procedural requirement—it reflects our unwavering commitment to serve and protect the Filipino people, ensuring peace and safety across the nation," They have incorporated technology to further "reduce response times and improve coordination among emergency services". (Philstar, 2024)

Table 5. ***Level of Practices of the MDRRMO Bay, Laguna in Responding to Vehicular Accidents***

Indicative Statement	Mean	SD	Remark
Ensure optimal safety of the team members as well as the victims	3.83	0.38	Very Much Practiced
Use personal protective gear e.g. latex gloves and mask	3.57	0.63	Very Much Practiced
Keep all necessary equipment ready for an emergency	3.64	0.58	Very Much Practiced
Assist EMT & nurse as necessary (wound dressing, splinting, lifting and moving)	3.76	0.43	Very Much Practiced
Methodically gather information on injured/casualty's condition	3.38	0.73	Very Much Practiced
Perform crowd control as necessary	3.05	0.82	Practiced
Perform other tasks as instructed by the team leader	3.79	0.47	Very Much Practiced
Overall Mean	3.57	0.58	Very Much Practiced
Overall Interpretation			

The mean is interpreted as follows: 3.25-4.00 = Very Much Practiced, 2.50-3.24= Practiced, 1.75-2.49= Sometimes Practiced, 1.00-1.74= Not Practiced

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Table 5 shows the Mean and the Standard Deviation of the Indicative Statements pertaining to Practices in Vehicular Response. Results yielded a mean of 3.57 (for a 4-scale Likert) which is interpreted as Very Much Practiced. This means that the MDRRM of Bay, Laguna are practicing the basics procedures of Vehicular Response. However, performing crowd control seems to be a challenge for them since the mean is slightly lower than the rest and is interpreted as practiced. The standard deviation of 0.58 measured how dispersed the data is in relation to the mean. The standard deviation is considered low, it suggests that the data points tend to be closer to the mean, indicating low variance. It is considered good in context where consistency or predictability is desired.

Clark, S. et al (2023). When EMS personnel respond to a crash site, they assess scene safety before they proceed onto the scene. This scene safety survey determines if it is safe for EMS responders to proceed to the scene and what safety equipment is required. Crash sites are highly dynamic environments and may change from safe to unsafe. EMS responders must continuously monitor scene safety and if the situation becomes unsafe, personnel should be withdrawn.

Table 6. ***Level of Efficiency and Effectiveness of the MDRRMO Bay, Laguna in Responding to Vehicular Accidents in terms of Response Time***

Indicative Statement	Mean	SD	Remark
The MDRRMO team immediately assessed the situation	3.86	0.35	*Highly Efficient and Effective*
The MDRRMO team immediately checked on the victims.	3.81	0.51	*Highly Efficient and Effective*
The MDRRMO team immediately endorsed us to other institutions for better care	3.81	0.51	*Highly Efficient and Effective*
The MDDRMO performed first aid before transporting us to the hospital	3.79	0.52	*Highly Efficient and Effective*
The MDRRMO team immediately reported the incident to the PNP.	3.48	0.77	*Highly Efficient and Effective*
Overall Mean	3.75	0.53	*Highly Efficient and Effective*
Overall Interpretation			

The mean is interpreted as follows: 3.25-4.00= Highly Efficient and Effective, 2.50-3.24= Efficient and Effective, 1.75-2.49= Inefficient and Ineffective, 1.00-1.74= Highly Inefficient and Ineffective.

Table 6 shows the Mean and the Standard Deviation of the Indicative Statements pertaining to Efficiency and Effectiveness of Vehicular Response in terms of response time. Results yielded a mean of 3.75 (for a 4-scale Likert) which is interpreted as Highly Efficient and Effective. The standard deviation of 0.53 measured how dispersed the data is in relation to the mean. The standard deviation is considered low, it suggests that the data points tend to be closer to the mean, indicating low variance. It is considered good in context where consistency or predictability is desired.

Emergency Response Time is absolutely critical, for excellence in patient care and the safety of staff and visitors, that the healthcare organization provide the resources to effectively respond to critical incidents. These incidents may be criminal in nature, exposure to hazardous materials, weather related, fires, or accidents. Staff response time can be the major difference between life and death or other damage control. The healthcare facility must maintain a capability to respond to critical incidents in a timely manner and such response should provide a competent skill level of action. The response time goal should be within 3 to 5 minutes of notification. (York and MacAlister, 2015)

Table 7. ***Level of Efficiency and Effectiveness of the MDRRMO Bay, Laguna in Responding to Vehicular Accidents in terms of Resource Availability***

	Indicative Statement	Mean	SD	Remark
1.	The responders are equipped with a transport vehicle.	3.83	0.38	*Highly Efficient and Effective*
2.	The responders carry with them medicines for wounds treatment.	3.71	0.51	*Highly Efficient and Effective*
3.	They have stretchers to transport the patient carefully.	3.88	0.33	*Highly Efficient and Effective*
4.	They have communication tools for coordination with other agencies.	3.95	0.22	*Highly Efficient and Effective*
5.	They have enough manpower to attend to our accident.	3.17	0.85	*Highly Efficient and Effective*
Overall Mean		3.71	0.46	*Highly Efficient and Effective*
Overall Interpretation				

The mean is interpreted as follows: 3.25-4.00= Highly Efficient and Effective, 2.50-3.24= Efficient and Effective, 1.75-2.49= Inefficient and Ineffective, 1.00-1.74= Highly Inefficient and Ineffective.

Table 7 shows the Mean and the Standard Deviation of the Indicative Statements pertaining to Efficiency and Effectiveness of Vehicular Response in terms of resource availability. Results yielded a mean of 3.71 (for a 4-scale Likert) which is interpreted as Highly Efficient and Effective. The standard deviation of 0.46 measured how dispersed the data is in relation to the mean. The standard deviation is considered low, it suggests that the data points tend to be closer to the

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mean, indicating low variance. It is considered good in context where consistency or predictability is desired.

This Resource Availability theory posits that organizations rely on resources to perform their functions effectively. In the context of MDRRMO Bay, the availability of resources (e.g., personnel, equipment, vehicles) is crucial for a successful response to vehicular accidents. The healthcare organization or MDRRM should provide the resources to effectively respond to critical incidents. Accident & Emergency Equipment and supplies for First Aid Care, Emergency response, are as follows: Transport Ventilator, Anaesthetic machine, Patient monitor, Airway management, Stretcher and Emergency trolley, ICU bed, Infusion pump. (Halomedicals, 2024)

Table 8. Level of Efficiency and Effectiveness of the MDRRMO Bay, Laguna in Responding to Vehicular Accidents in terms of Training and Skills of Responder

	Indicative Statement	Mean	SD	Remark
1.	The responders are knowledgeable of the steps to do in a vehicular accident.	3.83	0.38	*Highly Efficient and Effective*
2.	They have managed to perform the proper first aid treatment.	3.71	0.64	*Highly Efficient and Effective*
3.	They have the skills to make sure not to aggravate our condition.	3.74	0.59	*Highly Efficient and Effective*
4.	They are able to make medical decisions to undertake after first aid was given.	3.79	0.52	*Highly Efficient and Effective*
5.	They are knowledgeable of the legal repercussions and actions that we need to undertake.	3.83	0.38	*Highly Efficient and Effective*
Overall Mean		3.78	0.50	*Highly Efficient and Effective*
Overall Interpretation				

The mean is interpreted as follows: 3.25-4.00= Highly Efficient and Effective, 2.50-3.24= Efficient and Effective, 1.75-2.49= Inefficient and Ineffective, 1.00-1.74= Highly Inefficient and Ineffective

Table 8 shows the Mean and the Standard Deviation of the Indicative Statements pertaining to Efficiency and Effectiveness of Vehicular Response in terms of Training and Skills of Responder. Results yielded a mean of 3.78 (for a 4-scale Likert) which is interpreted as Highly Efficient and Effective. The standard deviation of 0.50 measured how dispersed the data is in relation to the mean. The standard deviation is considered low, it suggests that the data points tend to be closer to the mean, indicating low variance. It is considered good in context where consistency or predictability is desired.

Fire Rescue Australia (2024) reiterated that the first few minutes of vehicular accidents are often critical. And knowing what to do during this crucial period can mean the difference between life and death. They added that responders should know basic lifesaving techniques such as CPR, wound management, and fracture stabilization. These skills can help you provide immediate assistance while waiting for professional medical help to arrive, increasing the chances of survival for accident victims. The basics in roadside emergencies means knowing how to assess the situation, ensure personal safety, and call for help. These foundational skills are critical. They enable responders to effectively gauge the severity of the incident and take the necessary steps to assist. Basic knowledge in handling common injuries, such as cuts or fractures, is crucial. This not only helps in providing immediate care but also in preventing further harm.

Table 9. ***Level of Efficiency and Effectiveness of the MDRRMO Bay, Laguna in Responding to Vehicular Accidents in terms of Coordination with Other Agencies***

	Indicative Statement	Mean	SD	Remark
1.	They seek the assistance of the barangay for traffic management.	2.52	0.83	*Efficient and Effective*
2.	They have contacted our loved ones.	2.57	0.80	*Efficient and Effective*
3.	They have advised PNP of the incident report.	3.57	0.59	*Highly Efficient and Effective*
4.	They have coordinated with their mother base for further assistance.	3.88	0.40	*Highly Efficient and Effective*
5.	They have endorsed to the hospital properly.	3.98	0.15	*Highly Efficient and Effective*
Overall Mean		3.30	0.55	*Highly Efficient and Effective*
Overall Interpretation				

The mean is interpreted as follows: 3.25-4.00= Highly Efficient and Effective, 2.50-3.24= Efficient and Effective, 1.75-2.49= Inefficient and Ineffective, 1.00-1.74= Highly Inefficient and Ineffective

Table 9 shows the Mean and the Standard Deviation of the Indicative Statements pertaining to Efficiency and Effectiveness of Vehicular Response in terms of Coordination with Other Agencies. Results yielded a mean of 3.30 (for a 4-scale Likert) which is interpreted as Highly Efficient and Effective. The standard deviation of 0.55 measured how dispersed the data is in relation to the mean. The standard deviation is considered low, it suggests that the data points tend to be closer to the mean, indicating low variance.

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It is considered good in context where consistency or predictability is desired.

Despite the benefits of inter-agency collaboration, challenges remain. Research by Kappes et al. (2018) identifies barriers such as bureaucratic inefficiencies, lack of trust among agencies, and insufficient training in collaborative practices. Addressing these challenges is vital for enhancing the effectiveness of MDRRMOs.

Table 10. ***Level of Efficiency and Effectiveness of the MDRRMO Bay, Laguna in Responding to Vehicular Accidents in terms of Public Awareness and Compliance***

Indicative Statement	Mean	SD	Remark
1. They have cordoned the area so as not to tamper evidences for police investigation.	2.33	0.72	*Inefficient and Ineffective*
2. They have managed the traffic that was disrupted by the accident.	3.55	0.63	*Highly Efficient and Effective*
3. They have filed the necessary police report.	2.98	1.00	*Efficient and Effective*
4. They have logged the incident in their MDRRMO logbook.	3.98	0.15	*Highly Efficient and Effective*
5. They have reviewed their action for possible loopholes and further improvement.	3.83	0.44	*Highly Efficient and Effective*
Overall Mean	3.33	0.59	*Highly Efficient and Effective*
Overall Interpretation			

The mean is interpreted as follows: 3.25-4.00= Highly Efficient and Effective, 2.50-3.24= Efficient and Effective, 1.75-2.49= Inefficient and Ineffective, 1.00-1.74= Highly Inefficient and Ineffective

Table 10 shows the Mean and the Standard Deviation of the Indicative Statements pertaining to Efficiency and Effectiveness of Vehicular Response in terms of Public Awareness and Compliance. Results yielded a mean of 3.33 (for a 4-scale Likert) which is interpreted as Highly Efficient and Effective except for Cordoning the area which has a mean of 2.33 and is interpreted as Inefficient and Ineffective. The standard deviation of 0.59 measured how dispersed the data is in relation to the mean. The standard deviation is considered low, it suggests that the data points tend to be closer to the mean, indicating low variance. It is considered good in context where consistency or predictability is desired.

Road safety helps protect everyone who uses the road: drivers, passengers, roadside workers, cyclists, and pedestrians. Road Safety helps protect an organization's best assets: its people. It helps employers meet their legal obligations. And, it can have a significant impact on workplace culture and the bottom line. (Road Safety at Work, 2023)

Table 11. Frequency and Percentage Distribution of Suggested Policy Recommendations by the Respondents to Improve the Efficiency and Effectiveness of Vehicular Accident Response

No.	Particular	Freq.	%
1	Equipped	16	38.10
2	Trainings	8	19.05
3	Quick Response Time	6	14.29
4	Manpower	3	7.14
5	Satisfied/None	5	11.90
6	Complete PPE	3	7.14
7	Additional Ambulance	1	2.38
Total		42	100.00

Table 11 shows the Frequency and Percentage Distribution of Suggested Policy Recommendations by the Respondents to Improve the Efficiency and Effectiveness of Vehicular Accident Response. Results showed that most recommendations are geared on equipping the responders with a frequency of 16 or 38.10%. Second in rank are trainings with frequency of 8 or 19.05%.

Accident & Emergency Equipment and supplies for First Aid Care, Emergency response, are as follows: Transport Ventilator, Anaesthetic machine, Patient monitor, Airway management, Stretcher and Emergency trolley, ICU bed, Infusion pump. (Halomedicals, 2024)

Fire Rescue Australia (2024) reiterated that the first few minutes of vehicular accidents are often critical. And knowing what to do during this crucial period can mean the difference between life and death. They added that responders should know basic lifesaving techniques such as CPR, wound management, and fracture stabilization. These skills can help you provide immediate assistance while waiting for professional medical help to arrive, increasing the chances of survival for accident victims. The basics in roadside emergencies means knowing how to assess the situation, ensure personal safety, and call for help. These foundational skills are critical. They enable responders to effectively gauge the severity of the incident and take the necessary steps to assist. Basic knowledge in handling common injuries, such as cuts or

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fractures, is crucial. This not only helps in providing immediate care but also in preventing further harm.

Table 12. ***Significant Relationship between MDRRMO Practices and Details of Accident***

MDRRMO Practices	Details of Accident			
	Location	**Description of VA**	**Risk**	**Response Time**
Optimal Safety of Team Members	r=0.078ns Very Weak *p*=0.622	r=0.050ns Very Weak *p*=0.756	r=0.154ns Very Weak *p*=0.332	r=0.069ns Very Weak *p*=0.665
Use of Personal Protective Gear	r=-0.056ns Very Weak *p*=0.726	r=-0.383* Moderate *p*=0.042	r=-0.030 Very Weak *p*=0.849	r=-0.048ns Very Weak *p*=0.760
Readiness of Necessary Equipment	r=-0.063ns Very Weak *p*=0.694	r=-0.251ns Weak *p*=0.109	r=0.003ns Very Weak *p*=0.983	r=0.003 Very Weak *p*=0.983
Assisting EMT and Nurse when necessary	r=0.039ns Very Weak *p*=0.805	r=-0.064ns Very Weak *p*=0.688	r=-0.064ns Very Weak *p*=0.590	r=-0.095ns Very Weak *p*=0.552
Methodical gathering of information on injured/casualty person	r=-0.095ns Very Weak *p*=0.452	r=-0.308* Weak *p*=0.047	r=0.080ns Very Weak *p*=0.614	r=0.265ns Weak *p*=0.090
Crowd Control	r=0.115ns Very Weak *p*=0.468	r=0.369* Weak *p*=0.043	r=-0.015ns Very Weak *p*=0.923	r=0.321* Weak *p*=0.038
Performing other tasks as instructed	r=0.035ns Very Weak *p*=0.825	r=-0.075ns Very Weak *p*=0.639	r=0.093ns Very Weak *p*=0.556	R=0.030ns Very Weak *p*=0.853

Significant Correlation Value and its Relationship: *±1=Perfect, ±0.80-±0.99= Very Strong, ±0.60-±0.79=Strong, ±0.40-±0.59=Moderate, ±0.20-±0.39= Weak, ±0.01-±0.19= Very Weak, 0.0= No Relationship*

Table 12 shows the result of the test of Significant Relationship between MDRRMO Practices and Details of the Vehicular Accident. The correlation between these two variables is relatively very weak except for the use of Personal Protective Gear and Details of vehicular accident (r=0.383, p=0.042, Moderate); Methodical gathering of information and Description of vehicular accident (r=0.308, p=0.047, Weak); Crowd Control and Details of vehicular accident (r=0.369, p=0.043, Weak) and Crowd Control and Response Time (r=0.321 p=0.038, Weak). These variables showcased Moderate to Weak Correlations.

Rahul, G. et al. (2024, January). As indicated by the distribution of studies across world regions, among all the impact evaluations and systematic reviews included in this EGM, less than 10% were conducted in LMICs. As a result, the types of interventions that have been studied more frequently are biased towards road safety needs of high-income countries with high levels of car use. Much of the historical reduction in road deaths in these countries starting in the 1970s was achieved through interventions focused on car occupants such as car design or seatbelts.

Table 13. ***Significant Relationship between the Level of Practices of the MDRRMO and their level of efficiency and effectiveness***

MDRRMO Practices	Efficiency and Effectiveness of MDRRMO				
	Response Time	**Resource Availability**	**Training and Skills of Responder**	**Coordination with Other Agencies**	**Public Awareness and Compliance**
Optimal Safety of Team Members	r = 0.471** Moderate *p*=0.002	r=0.530** Moderate *p*<0.001	r=0.257ns Weak *p*=0.100	r=0.480** Moderate *p*=0.001	r=0.527** Moderate *p*<0.001
Use of Personal Protective Gear	r=0.618** Strong *p*<0.001	r=0.244ns Weak *p*=0.120	r=0.599** Strong *p*<0.001	r=0.045ns Very Weak *p*=0.779	R=0.379* Weak P=0.013
Readiness of Necessary Equipment	r=0.610** Strong *p*<0.001	r=0.519** Moderate *p*<0.001	r=0.443 Moderate *p*=0.003	r=0.338* Weak *p*=0.029	r=0.600** Strong *p*<0.001

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Assisting EMT and Nurse when necessary	r=0.689** Strong p<0.001	r=0.415** Moderate p=0.006	r=0.652** Strong p<0.001	r=0.221ns Weak p=0.160	r=0.461** Moderate p=0.002
Methodical gathering of information on injured/casualty person	r=0.451** Moderate p=0.003	r=0.325* Weak p=0.036	r=0.306* Weak p=0.049	r=0.247ns Weak p=0.115	r=0.446** Moderate p=0.003
Crowd Control	r=0.334* Weak p=0.031	r=0.414** Moderate p=0.006	r=0.416** Very Weak p=0.005	r=0.434** Moderate p=0.004	r=0.733** Strong p<0.001
Performing other tasks as instructed	r=0.538** Moderate p<0.001	r=0.362* Weak p=0.018	r=0.467** Moderate p=0.002	r=0.337* Weak p=0.029	r=0.330* Weak p=0.033

Significant Correlation Value and its Relationship: *±1=Perfect, ±0.80-±0.99= Very Strong, ±0.60-±0.79=Strong, ±0.40-±0.59=Moderate, ±0.20-±0.39= Weak, ±0.01-±0.19= Very Weak, 0.0= No Relationship*

Table 13 shows the result of the test of Significant Relationship between the Level of Practices of the MDRRMO and their level of efficiency and effectiveness. The correlation between these two variables ranges from Weak to Strong. Significant findings can be found between that of Optimal Safety of Team and Response Time (r = 0.471, Moderate, p=0.002); Optimal Safety of Team and Resource Availability (r=0.530, Moderate, p<0.001); Optimal Safety of Team and Coordination with Other Agencies (r=0.480, Moderate, p=0.001); Optimal Safety of Team and Public Awareness and Compliance (r=0.527, Moderate, p<0.001); Use of Personal Protective Gear and Response Time (r=0.618, Strong, p<0.001); Use of Personal Protective Gear and Training and Skills of Responder (r=0.599, Strong, p<0.001); Use of Personal Protective Gear and Public Awareness and Compliance (R=0.379, Weak, P=0.013); Readiness of Necessary Equipment and Response Time (r=0.610, Strong, p<0.001); Readiness of Necessary Equipment and Resource Availability (r=0.519, Moderate, p<0.001); Readiness of Necessary Equipment and Coordination with Other Agencies (r=0.338, Weak, p=0.029); Readiness of Necessary Equipment and Public Awareness and Compliance (r=0.600, Strong, p<0.001); Assisting EMT and Nurse when necessary and Response Time (r=0.689, Strong, p<0.001); Assisting EMT and Nurse when necessary and Resource Availability (r=0.415, Moderate, p=0.006); Assisting EMT and Nurse when necessary and Training and Skills of Responder (r=0.652, Strong, p<0.001); Assisting EMT and Nurse when necessary and Public Awareness and Compliance (r=0.461, Moderate, p=0.002); Methodical gathering of information on injured/casualty person and Response Time (r=0.451, Moderate, p=0.003); Methodical gathering of information on injured/casualty person and Resource Availability (r=0.325, Weak, p=0.036); Methodical gathering of information on injured/casualty person and Training and Skills of Responder (r=0.306, Weak, p=0.049); Methodical gathering of information on injured/casualty person and Public Awareness and Compliance (r=0.446, Moderate, p=0.003); Crowd Control and Response Time (r=0.334, Weak, p=0.031); Crowd Control and Resource Availability (r=0.362, Weak, p=0.018); Crowd Control and Training and Skills of Responder (r=0.467, Moderate, p=0.002); Crowd Control and Coordination with Other Agencies (r=0.337, Weak p=0.029) and Crowd Control and Public Awareness and Compliance (r= 0.330, Weak, p=0.033)

CONCLUSION AND RECOMMENDATION

The study revealed that Vehicular Accidents are very common at night because of limited vision, driver fatigue and reaction time. And at times that drivers are most probably feeling sleepy like the time block of 2pm-4pm which is Siesta time for Filipinos.Vehicular Accidents are most commonly occurring in Brgy. Dila and Calo since these are barangays near roads, intersections and highways. May and September are the most common month of occurrence of accidents. Accidents are inevitable but determining the highest incidence and when it happened helps in preparing for risk mitigating better.Topping the rank are those who have Self Accident followed by Pedestrian vs Motor. Results showed that the respondents experienced risks that are less to moderate ones. Bleeding ranked second. It is worth noting that less to moderate incidents were responded to by the MDRRM Bay, Laguna. Results showed that most responders arrive after 6-10 minutes.There was just one case that reached 21-25 minutes before responder arrives.Efficiency and Effectiveness of Vehicular Response in terms of resource availability is deemed as Highly Efficient and Effective. Efficiency and Effectiveness of Vehicular Response in terms of Training and Skills of Responder is deemed as Highly Efficient and Effective.

Based on the assessed practices of MDRRMO Bay, Laguna it is recommended to ensure that the response time is maintained at 3-5 minutes or 6-10 minutes during emergency situations to achieve better outcomes, including reduced fatalities and injuries. The MDRRMO Bay Laguna must ensure complete Accident & Emergency Equipment and supplies for First Aid Care, Emergency response, such as follows: Transport Ventilator, Anaesthetic machine, Patient monitor, Airway management, Stretcher and Emergency trolley, ICU bed, and Infusion pump. The MDRRMO Bay Laguna must conduct Simulation exercises that focus on accident scene evaluations that are not yet encountered by MDRRMO Bay, Laguna. This could enhance responders' observational skills and improve their ability to document and communicate vital information. The MDRRMO Bay Laguna must increase inter-agency collaboration. It emphasizes that effective communication and partnership between MDRRMOs and national agencies like the NDRRMC, PNP, BFP, RHU and the likes enhance resource allocation and response efficiency. The MDRRMO Bay Laguna must use cordons when necessary to avoid tampering with

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evidence during police investigations. The MDRRMO Bay Laguna must conduct educational campaigns to raise awareness about vehicular safety, emergency procedures, and traffic regulations. The MDRRMO Bay Laguna must engage the community in training programs such as Basic Life Support (BLS) and Standard First Aid (SFA). The MDRRMO Bay Laguna must hire more traffic enforcers and police officers to prevent violations by road users. The MDRRMO Bay Laguna must capacitate the Barangay Disaster Risk Reduction and Management Office (BDRRMO) to lead initial emergency response efforts, especially for vehicular accidents, given their proximity to the location, thereby reducing response time.

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