

Practices Among the Local Disaster Risk Reduction and Management Responders

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ABSTRACT

This research investigates the extent of practices among Local Disaster Risk Reduction and Management (LDRRM) Responders in Bukidnon, specifically focusing on the development of comprehensive welfare programs. Using descriptive research design and quota sampling, insights were gathered from 100 community respondents in Bukidnon, a vital developing, producing province in the Philippines prone to diverse natural hazards. Results from descriptive and inferential statistics provide a nuanced understanding of the lived experiences of LDRRM Responders, revealing commendable practices. Most of the respondents are Younger Adults (20 to 39 years old), male, married, and with varying lengths of service, with a significant proportion having 1 to 3 years of experience. These demographic insights provide a foundation for understanding the composition of the respondent group and can inform targeted programs in areas such as training, support, and engagement based on the identified demographics. The assessment of employee engagement among Local Disaster Risk Reduction and Management Responders in Bukidnon reveals nuanced insights across pre-deployment, deployment, and post-deployment phases. In pre-deployment, the overall engagement level is marked as "Practiced" (3.07), indicating a foundational approach, yet opportunities for improvement exist. The prioritization of communities during pre-deployment is highly practiced, showcasing effective leadership. However, the absence of regular Hepatitis B vaccination, marked as "Partially Practiced," calls for focused enhancements. In deployment, the engagement level is rated as "Entirely Practiced" (3.38), underscoring positive engagement and well-established practices, particularly in providing Personal Protective Equipment. Nevertheless, the existence of an Exposure Control Plan is marked for improvement. Post-deployment engagement is moderate (3.23), with commendable systematic recordkeeping but a need for refinement in post-incident medical evaluations. These findings guide targeted interventions, emphasizing the optimization of vaccination protocols, exposure control planning, and medical support to bolster the overall well-being and effectiveness of responders in Bukidnon. In conclusion, Practices among Local Disaster Risk Reduction and Management Responders, offers valuable insights into the local context of disaster risk reduction in Bukidnon, providing actionable recommendations for policymakers, emergency responders, and stakeholders. The study envisions a more resilient region through the implementation of strategic measures that prioritize responder well-being and enhance the overall effectiveness of disaster risk reduction initiatives.

Keywords: Disaster Risk Reduction, Local Disaster Risk Reduction, Emergency Responders, Comprehensive Welfare Programs

INTRODUCTION

As calamities become increasingly common worldwide, people are continually exposed to them. These disasters might be natural or caused by humans. A natural disaster is a catastrophic event that occurs as a result of natural processes and forces of the Earth. Earthquakes, floods, tsunamis, volcanic eruptions, landslides, and droughts are some examples of natural disasters. Human-caused disasters, also known as anthropogenic or man-made disasters, are events that result from human actions, negligence, or intent. Human-caused disasters include chemical spills, nuclear explosions, war, pollution, and fire.

While disasters do exist, so do emergency responders. Responding to catastrophes and other

emergencies is crucial, and while it can be satisfying, it can also have negative consequences for responders. Emergency responders are important members of our community, and they must be safeguarded to return home safely each night and respond again the next day. Community-based disaster management is a risk reduction program that can be designed with the local people in disaster-prone areas. Using government interventions alone in mitigating disaster is often insufficient due to the lack of recognition of the community's vulnerabilities and capacities (Dales et al., 2020).

Dealing with disasters or other types of emergencies is difficult. A disaster is a severe disruption of a community's or society's functioning, resulting in widespread human, material, economic, or environmental losses and impacts surpassing the afflicted community's or society's ability to manage using resources (Republic Act No. 10121, 2010). Responders at our Local Government Units' Local Disaster Risk Reduction and Management Offices (LDRRMO) are the emergency responders especially targeted in this study. The Philippines has a law (R.A., 10121) that covers all phases of disasters, as well as a Magna Carta for public health workers (R.A. 7305). It does not, however, have formal legislation regulation, or comprehensive programs at the Local Disaster Risk Reduction and Management Offices (LDRRMOs) that protect and uphold the rights of these groups or workers.

Under the Joint Memorandum Circular No. 2014-1 dated April 4, 2014, with the subject "Implementing guidelines for the establishment of Local DRRM offices (LDRRMOs) or Barangay DRRM Committees (BDRRMCs) in Local Government Units (LGUs), it mandated the establishment of LDRRMOs in provinces, cities, and municipalities, and BDRRMCs in barangays. The established LDRRMO with DRRM positions (DRRMD Officer, Administration and Training Section Chief, Research and Planning Section Chief, and Operations and Warning Section Chief), within their area of jurisdiction, are responsible for setting the direction, development, implementation, and coordination of disaster risk reduction and management programs (Mirasol ET AL., 2021). Each DRMM section has its functions and other functions that may be authorized by the Local Disaster Risk Reduction and Management Council (LDRRMC).

Data from the 2017-2019 Provincial Disaster Risk Reduction and Management Plan shows 106 natural disaster occurrences across the province, including but not limited to flash floods, landslides, earthquakes, typhoons, tornadoes, strong winds, whirlwinds, lightning, and drowning incidences (de Torres, 2022). It also includes 62 cases of human-caused disasters around the province, including but not limited to the displacement of families, fires, explosions and bombings, armed conflicts, simultaneous harassment by the NPA, diarrhea outbreaks, and vehicular accidents. From 2018 to 2022, the Provincial Disaster Risk Reduction and Management Division of Bukidnon's responders have logged 210 different types of emergency operations, 119 medical stations, and sixteen (16) search and rescue operations.

These events were responded to, attended to, and augmented by responders from Bukidnon's respected local government units. Responders are exposed to potentially fatal infectious diseases, traumatic events, and other physical and mental health issues as a consequence. The significance of this study is to gather data that can provide appropriate recommendations for comprehensive programs that will protect the responders and formulate practical guidance in implementing the programs.

The objective of this study is to examine the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon according to the Emergency Responder Health Monitoring and Surveillance (ERHMS) system which is a framework that includes recommendations and tools specific to the protection of emergency responders during all phases of a response including pre-deployment, deployment, and post-deployment phases (Funk, 2018)

MATERIALS & METHODS

The research design used in the study is descriptive, which aims to describe the characteristics, behaviors, or phenomena under investigation. This type of research design is particularly useful in addressing the what, when, where, and how questions related to the research problem. To accomplish the study's objective, a quota sampling of 100 participants from the Bukidnon province community was utilized. The research focused on the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon with Developing Comprehensive Welfare Programs.

The efficiency of quota sampling is evident as it allows for the targeted inclusion of individuals who meet specific criteria, streamlining the research process and highlighting the significance of the selected individuals and their crucial roles in shaping disaster risk reduction and management programs within the LDRRMO (Gabriel et al., 2021) and "Assessing social resilience in disaster management. International Journal of Disaster Risk Reduction" (Saja et al., 2021)..

RESULTS AND DISCUSSION

1. Profile of the Respondents

The data revealed that 20 to 39 years old or Younger Adults had 69 or 69.00 percent, 40 to 59 years old or Middle Age had 29 or 29 percent, and 60 years old and above or Older Adults had 2 or 2.00 percent. This means that most respondents are 20 to 39 Years Old or Younger Adults. In terms of sex, the data revealed that males had 73 or 73.00 percent and females had 27 or 27.00 percent. This means that the majority of the respondents are male.

Moreover, in terms of Civil Status, the data revealed that a single had 37 or 37.00 percent, married had 60 or 60.00 percent, widowed had 0 or 0.00 percent, and separated had 3 or 3.00 percent. This means that most of the respondents are married. Lastly, in terms of Length of Service the data revealed that in 1 to 3 years of service had 33 or 33.00 percent, in 4 to 6 years of service had 20 or 20.00 percent, in 7 to 9 years of service had 26 or 26.00 percent, and in 10 years of service and above had 21 or 21.00 percent. This means that some of the respondents are 1 to 3 years in service.

2. What are the practices among the Local Disaster Risk Reduction and Management Responders in terms of Pre-deployment, Deployment, and Post-deployment?

Table 1 presents the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Pre-Deployment. The data exposed the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Pre-Deployment is 3.07 and the SD of 0.57 or "Practiced". This suggests a foundation of practiced pre-deployment activities among Local Disaster Risk Reduction and Management Responders in Bukidnon, with opportunities for improvement and a focus on employee engagement for enhanced performance (Ogra et al. 2021).

Moreover, the highest item on the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Pre-Deployment is "The management prioritized the communities that required immediate attention during the pre-deployment phase." with a mean of 3.52 and SD of 0.54 or "Entirely Practiced". This indicates a strong commitment to community prioritization during the pre-deployment phase, highlighting effective leadership, alignment with the mission, and potential positive impacts on employee engagement and community relationships. (Amaratunga et al. 2018).

Furthermore, the lowest item on the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Pre-Deployment is "There is a regular vaccination for Hepatitis B vaccination." with a mean of 2.29 and SD of 1.04 or "Partially Practiced. Thus, this item is recommended for further improvement since it does not meet the highest mean standard deviation.

Table 1
The extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Pre-Deployment

Items	Mean	SD	Description	Interpretation
1. Management has established an effective working arrangement.	3.42	0.57	Strongly Agree	Entirely Practiced
2. Management conducts regular capacity development activities for the team.	3.31	0.72	Strongly Agree	Entirely Practiced
3. There is the conduct of regular training on rescue operations and safe handling.	3.47	0.63	Strongly Agree	Entirely Practiced
4. There is a conduct of annual physical examination for all responders.	2.75	0.91	Agree	Practiced
5. There is a regular vaccination for Hepatitis B vaccination	2.29	1.04	Disagree	Partially Practiced
6. There is the conduct of regular Stress debriefing in a year.	2.76	1.01	Agree	Practiced
7. The management prioritized the communities that required immediate attention during the pre-deployment phase.	3.52	0.54	Strongly Agree	Entirely Practiced
Overall Mean	3.07	0.77	Agree	Practiced

Legend: 1.0-1.75 (Not Entirely Practiced), 1.76-2.50 (Partially Practiced), 2.51-3.25 (Practiced), 3.26-4.00 (Entirely Practiced)

Table 2 presents the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Deployment. The data exposed the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Deployment is 3.38 and the SD of 0.66 or "Entirely Practiced". This suggests that Local Disaster Risk Reduction and Management Responders in Bukidnon exhibit positive employee engagement and highly practiced deployment processes. (Cvetković et al. 2021).

Moreover, the highest item on the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Deployment is "There is a provision for Personal Protective Equipment or PPE." with a mean of 3.59 and SD of 0.51 or "Entirely Practiced". This signifies a commitment to responder safety, legal compliance, and overall operational readiness, contributing to effective disaster response and community well-being. (Kanyasan et al. 2018).

Furthermore, the lowest item on the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Deployment is "There is an existing Exposure Control Plan." with a mean of 2.79 and SD of 0.91 or "Practiced". Thus, this item is recommended for further improvement since it does not meet the highest mean standard deviation.

Table 2
The extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of Deployment

Items	Mean	SD	Description	Interpretation
8. There is safety equipment of all types available.	3.43	0.70	Strongly Agree	Entirely Practiced
9. There is a provision for Personal Protective Equipment or PPE.	3.59	0.51	Strongly Agree	Entirely Practiced
10. There is post-incident reporting available within 24 hours after filing exposure.	3.32	0.69	Strongly Agree	Entirely Practiced
11. A "Buddy System" is present to monitor teammates' well-being.	3.56	0.54	Strongly Agree	Entirely Practiced
12. There is an existing Exposure Control Plan.	2.79	0.91	Agree	Entirely Practiced
13. There is an application of the Incident Command System	3.43	0.70	Strongly Agree	Entirely Practiced
14. There is support for affected communities while deployed.	3.52	0.54	Strongly Agree	Entirely Practiced
Overall Mean	3.38	0.66	Strongly Agree	Entirely Practiced

Legend: 1.0-1.75 (Not Entirely Practiced), 1.76-2.50 (Partially Practiced), 2.51-3.25 (Practiced), 3.26-4.00 (Entirely Practiced)

Table 3 presents the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of post-deployment. The data exposed the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of post-Deployment is 3.23 and the SD of 0.72 or "Practiced". This suggests a moderate level of employee engagement in post-deployment activities among Local Disaster Risk Reduction and Management Responders in Bukidnon. (Ecolin-Campilla 2017).

Moreover, the highest item on the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of post-Deployment is "There is systematic recordkeeping of all emergency operations." with a mean of 3.53 and SD of 0.66 or "Entirely Practiced". This implies that the highly practiced nature of systematic recordkeeping in post-deployment activities indicates a commitment to learning, improvement, accountability, and compliance among Local Disaster Risk Reduction and Management Responders in Bukidnon. (Yusay III and Caelian 2022).

Furthermore, the lowest item on the level of employee engagement in terms of employees' performance and the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of post-deployment is "There is a free medical evaluation and laboratory check-up done after post-incident exposure." with a mean of 2.55 and SD of 0.96 or "Practiced. Thus, this item is recommended for further improvement since it does not meet the highest mean standard deviation.

Table 4 presents the summary results in the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in relation to the phases of response: Pre-deployment, Deployment, and Post-deployment. The data presented reveals the mean scores and standard deviations for three sub-variables (Pre-deployment, Deployment, Post-deployment), along with an overall average mean, using a scale ranging from "Not Entirely Practiced" to "Entirely Practiced."

Table 3
The extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon in terms of post-deployment

Items	Mean	SD	Description	Interpretation
15. There is a post-deployment debriefing after field responses.	3.08	0.79	Agree	Practiced
16. Management encourages opinions or suggestions from team members during post-deployment debriefings.	3.21	0.76	Agree	Practiced
17. There is an annual evaluation of LDRRMO accomplishments.	3.37	0.68	Strongly Agree	Entirely Practiced
18. There is systematic recordkeeping of all emergency operations.	3.53	0.66	Strongly Agree	Entirely Practiced
19. There is a free medical evaluation and laboratory check-up done after post-incident exposure.	2.55	0.96	Agree	Practiced
20. There are lessons learned from post-deployment experiences that led to improvements in future disaster response efforts.	3.42	0.67	Strongly Agree	Entirely Practiced
21. There is management support for affected communities while post-deployed.	3.43	0.56	Strongly Agree	Entirely Practiced
Overall Mean	3.23	0.72	Agree	Practiced

Legend: 1.0-1.75 (Not Entirely Practiced), 1.76-2.50 (Partially Practiced), 2.51-3.25 (Practiced), 3.26-4.00 (Entirely Practiced)

The Deployment phase stands out with the highest mean score of 3.38, categorized as "Strongly Agree" and interpreted as "Entirely Practiced," indicating a robust implementation of practices during this stage. Both Pre-deployment (mean: 3.07) and post-deployment (mean: 3.23) phases also show positive scores, categorized as "Agree" and "Practiced," suggesting effective implementation, albeit not as strong as in the Deployment phase.

The overall average mean is 3.23, reflecting an "Agree" level and a "Practiced" interpretation across all phases. The lower standard deviations imply a consistent level of agreement or practice within each phase, indicating stability in implementation. While the findings suggest successful practices, further exploration of specific practices within each phase can uncover areas for refinement or improvement. Continuous monitoring and feedback mechanisms are crucial for maintaining or enhancing these practices over time, especially in the dynamic context of deployment scenarios.

Table 4
The Summary of the extent of Practices among the Local Disaster Risk Reduction Responders

Sub-variables	Mean	SD	Description	Interpretation
Pre-deployment	3.07	0.77	Agree	Practiced
Deployment	3.38	0.66	Strongly Agree	Entirely Practiced
Post-deployment	3.23	0.72	Agree	Practiced
Overall Mean	3.23	1.67	Agree	Practiced

Legend: 1.0-1.75 (Not Entirely Practiced), 1.76-2.50 (Partially Practiced), 2.51-3.25 (Practiced), 3.26-4.00 (Entirely Practiced)

3. Is there a significant difference in the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon when grouped according to profile?

Table 5 depicts the significant difference in the extent of practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon when grouped according to profile. The analysis

of the extent of practices among local Disaster Risk Reduction and Management (DRRM) responders in Bukidnon has provided insights into the influence of demographic profiles on their practices. The study examined variables such as sex, age, civil status, and length of service.

The findings indicate that there is no significant difference in the extent of practices based on sex, age, or civil status, as evidenced by the failure to reject the null hypotheses for these factors. This suggests that variations in practices among DRRM responders in Bukidnon are likely due to random chance rather than being influenced by these demographic characteristics. However, the analysis reveals a noteworthy result concerning the length of service. The significant difference in practices based on the length of service, as indicated by the rejection of the null hypothesis, implies that responders with varying lengths of service exhibit different extents of practices.

Further exploration is warranted to understand the specific nature of this relationship and whether longer-serving responders demonstrate more extensive practices or the inverse. Practically, these findings can inform the development of targeted training and development programs for DRRM responders, taking into account the identified significant factor of length of service. It is essential to recognize that statistical significance may not necessarily imply practical significance, emphasizing the need for additional qualitative research to uncover the nuances behind the observed variations in practices among DRRM responders in Bukidnon

Table 5
Test of Significant Difference in the Extent of Practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon when grouped according to profile

Extent of Practices among the Local Disaster Risk Reduction and Management Responders in Bukidnon			
Profile	T-Value	P-Value	Decision on Ho
Sex	-.566	.573	Failed to Reject
Profile	F-Value	P-Value	Decision on Ho
Age	-.697	.487	Failed to Reject
Civil Status	-1.201	.233	Failed to Reject
Length of Service	-2.112	.037	Failed to Reject

Significant if P-value <0.05

Legend: Ho is rejected if Significant

Ho is failed to reject if Not Significant

4. What are the challenges encountered by the responders during pre-deployment, deployment and post-deployment?

Res_1: I encountered a flooded society at San Martin where one of my colleagues got a contusion of his leg and we didn't have any medicine or bring a trauma bag because we forgot to bring it.

Res_2: People with severe injuries and people with mental illness.

Res_3: The personnel lack of equipment during post-deployment personnel are blaming each other for their response.

Res_4: Lack of tools and equipment. Lack of communication.

Res_5: During pre-deployment the challenges we encounter are immediate assembly for responders due to the on-call status of day-off personnel especially during bad weather conditions and during response the monitoring of delayed responders in the field on post-deployment. There is no stress debriefing after the response.

The feedback provided reflects the real-life experiences of those who have gone through the various phases of response: pre-deployment, deployment, and post-deployment. Based on this data, it is recommended that programs and activities be implemented to support responders, existing best practices be improved upon, and the well-being of responders be given top priority to ensure they can continue their important work.

5. What are the comprehensive welfare programs that can be developed for Local Disaster Risk Reduction and Management Responders in Bukidnon?

Developing comprehensive welfare programs for Local Disaster Risk Reduction and Management (DRRM) Responders in Bukidnon involves addressing various aspects of their well-being, support, and professional development. Here are several key components that can be considered: (a) Ensure access to regular health check-ups and medical support; (b) Offer mental health support services, including counseling and stress management programs; (c) Design and implement ongoing training programs to enhance skills and knowledge; (d) Provide opportunities for professional certifications and advanced training; (e) Promote the importance of work-life balance and encourage time off after intense deployment periods; (f) Implement policies that support flexible working arrangements when feasible (g) Develop a system for recognizing and appreciating responders' efforts and achievements; (h) Foster a sense of community among responders through team-building activities; and (i) Collaborate with local communities to build mutual understanding and support.

By integrating these comprehensive welfare programs, organizations can create a supportive and resilient environment for Local Disaster Risk Reduction and Management Responders in Bukidnon, ultimately contributing to their overall well-being and effectiveness in disaster response efforts.

CONCLUSION

In conclusion, the study employed stratified random sampling with 100 respondents to investigate the practices among Local Disaster Risk Reduction and Management Responders in Bukidnon. The demographic profile of the respondents revealed that the majority are Younger Adults, male, married, and with varying lengths of service, with a notable proportion having 1 to 3 years of experience. These demographic insights provide a foundational understanding of the respondent group, informing targeted programs in training, support, and engagement based on identified demographics. The assessment of practices across pre-deployment, deployment, and post-deployment phases unveiled nuanced insights.

While pre-deployment practices were deemed "Practiced" with opportunities for improvement, highly practiced elements included effective community prioritization. Deployment practices were rated as "Entirely Practiced," emphasizing positive engagement and well-established procedures, yet improvements were suggested for an Exposure Control Plan. Post-deployment engagement was moderate, with commendable systematic recordkeeping but a need for refining post-incident medical evaluations. Overall, the study offers valuable insights to guide targeted interventions, optimize protocols, and enhance support for the well-being and effectiveness of responders in Bukidnon.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are drawn:

1. Prioritize the health and safety of responders by ensuring regular health check-ups, comprehensive health insurance coverage, and the provision of up-to-date Personal Protective Equipment (PPE).
2. Provide opportunities for professional certifications and advanced training to keep responders updated on the latest practices and technologies.

3. Develop programs that provide support to the families of responders, including access to information, counseling, and assistance during emergencies.
4. Use feedback to identify areas for improvement and implement changes as needed.
5. Implement wellness programs that focus on physical health, mental well-being, and stress reduction.
6. Involve responders in community engagement initiatives to strengthen ties with local populations.
7. Provide financial planning and counseling services to support financial well-being.

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