MANAGEMENT OF MAN-MADE DISASTERS IN SECONDARY SCHOOLS IN RANCHI DISTRICT, WITH SPECIAL REFERENCE TO PREVENTION AND PREPAREDNESS

Doctoral Thesis
Submitted
In partial fulfillment of the requirements
for the award of the degree of
DOCTOR OF PHILOSOPHY
IN
MANAGEMENT
BY
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ICFAI UNIVERSITY JHARKHAND
RANCHI
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1. Introduction

The Disaster Management Act, 2005 defines disaster as “a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area”.

Man-made Disasters also termed as human-induced disasters or of anthropogenic origin are man-made events, of sudden or progressive nature, which impact the affected community adversely. Children are the most vulnerable group in any type of disasters, whether naturally occurring or man-made, which result in injuries, deaths, disruption of normal lives, trauma, stress and adversely affect their overall development. They are future generation citizens of the society.

School Safety is very essential, as school is the center of major academic and community activities and a culture of disaster prevention and mitigation can be created in case of natural as well as man-made disasters. A disaster resilient society can be created by educating children in schools on different types of disasters and their prevention.

Both Government and Private secondary schools of Ranchi district face major disaster threats due to manmade causes. Moreover, some additional factors like the Naxalite attacks, quality related issues in mid-day meals, safety issues in schools etc. increase the risk many fold. The present study focuses on the man-made disasters that affect secondary Government and Private schools and their stakeholders such as students, teachers, non-teaching staff, parents and overall society. The different types of man-made disasters affecting schools include building fire, road accidents, transport safety, midday meal disasters, theft, Naxalite attacks, building collapse, electrical short circuits etc.

The research has been motivated by losses due to man-made disasters in schools. Children are the major sufferer of the various events of man-made disasters in terms of their lives and health. There has not been much research in the field of man-made disasters especially in Ranchi district of Jharkhand. If the students can be made aware of the preventive measures, then they will be better prepared for the coming threats and respond to them effectively, thus saving their lives as well as save the lives of fellow students and other staff.
2. Relevance of the Topic

Existing school safety plans need a major upgradation in strategies in the form of effective preventive measures and from conventional to the modern approach. This can be done by identifying the gaps in the existing disaster management policies and replacing it by modern approaches in disaster management. The conventional system was based on post-disaster management, rehabilitation, and relief, but the modern strategy is focused on prevention and preparedness about the incoming disaster.

This is done by early warning system, response and human resource management, the formation of a school disaster management committee and task action force with clear roles and responsibilities and monitoring of alerts given by government sites and experts would form the basis for modern strategies.

Formation of a school disaster management committee and task action force with clear roles and responsibilities, development of alert mechanism before disasters and continuous monitoring of alerts given by government sites and experts would form basis for modern strategies.

The school management would make calendar of preparedness activities for disaster management, detailed version of school maps, evacuation plans and mock drills with the involvement of parents and government officials to be conducted in the school. The task of the school management to prepare a disaster management plan taking into consideration the disability and gender based needs of the community. The periodical review of the disaster management plan and risk audit by the school management and assured by the government officials can largely contribute in upgrading strategy towards the modern approach.

The present study focuses on the man-made disasters that affect secondary Government and Private schools and their stakeholders such as students, teachers, non-teaching staff, parents and overall society. The different types of man-made disasters affecting schools include building fire, road accidents, transport safety, midday meal disasters, theft, Naxalite attacks, building collapse, electrical short circuits etc.

The research compares the scenario of pre-disaster preparedness and prevention as well as the response to the disasters and post-disaster activities in Government and Private schools.
3. Objectives, Scopes, Limitations and Historical data

The objectives of this research topic are as follows:

a) To identify the types of man-made disasters in Government and Private Secondary Schools in Ranchi.

b) To identify the sources and causes of man-made disasters in Government and Private Secondary Schools in Ranchi district.

c) To analyze different approaches for Prevention and Preparedness for identified man-made disasters in Secondary Schools.

d) To analyze the Perceptions of the school head, students, and teachers with regard to management of man-made disasters.

e) To analyze the Psychological behavior of School students with regard to management of man-made disasters.

f) To analyze disaster preparedness planning for man-made disasters by parents, experts, staffs, and school management.

The scopes of this research topic are as follows:

a) Various types of manmade disasters in Ranchi district which affect the stakeholders of Government and Private secondary Schools such as students, teachers and staffs, parents, disaster management experts etc.

b) Sources and causes of manmade disasters in Government and Private Schools of Ranchi district of Jharkhand.

c) Analysis of different approaches for Prevention and Preparedness for qualified manmade disasters in Government and Private Schools.

d) Analysis of the perceptions of school head, students, teachers, disaster management experts etc.

e) Analysis of psychological responses, stress management responses, panic management responses, disaster preparedness measures, disaster preparedness planning etc. of the stakeholders of Government and Private secondary Schools.
The limitations of this research topic are as follows:

- The research covers only Man-made disasters confined to Government and Private Schools while the there are many Man-made disasters which are not applicable for schools.
- The research does not take into account the Natural disasters which are more destructive in comparison to Man-made disasters.
- The research is restricted to Ranchi district only having a small sample space of 373 respondents while the research could be performed in larger geographical area having more respondents so that more quantitative data could be gathered.
- There are many types of schools like kindergarten, primary, secondary and senior secondary, while the present research is limited to secondary schools and other types of schools are not covered.
- The research is qualitative perception analysis and psychological behavior of different respondents and can be quantified with different statistical tools in the form of quantitative study.

Some historical data related to school disasters happened in past:

- In August 2018, 8 staff members of Sapphire International School including Principal, Vice Principal, wardens and two guards were accused by the court for killing of student.
- In April 2015, a 9 year old girl in St. Thomas school Ranchi died in the school campus as the school management was unaware of the diseased condition of the girl.
- In January 2015, a 12 year boy of class VI of Rise academy Ranchi was killed by a running bus.
- In July 2013, 40 students of Gurukul school in Ranchi were admitted in hospital after a lizard was found in the mid day meal.
- In Feb 2012, a school bus was met with accident in Ranchi in which three were injured.
- In May 2006, a student of class XII of DAV public school, Ranchi was crushed by school bus.
- In 2004, Kumbakonam fire accident in Tamil Nadu, 93 children lost their lives in Sri Krishna middle school.
- In 1995, Dabwali in Haryana, 425 lost their lives due to flames in a prize ceremony.
## 4. Concepts/Theories/Philosophies

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<th>Type of literature</th>
<th>Author</th>
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<th>Linkage to own research</th>
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<td>Book</td>
<td>National Institute of Disaster Management (NIDM)</td>
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<td>2014</td>
<td>State vulnerability to disasters, institutional setup and initiatives</td>
<td>Need for the disaster management in Jharkhand</td>
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<td>Ministry of home affairs</td>
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<td>2011</td>
<td>Disasters in India, institution framework, policies and guidelines, capacity developments</td>
<td>Overview of the different types of disasters in India and Govt policies to face them.</td>
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<td>3</td>
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<td>Book</td>
<td>Prof A S Arya, G Padmanabhan and Anup Karanth</td>
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<td>School safety programme, primary strategies and management structures</td>
<td>Application of disaster management in schools, its necessity and role.</td>
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<td>Omar D. Cardona</td>
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<td>Various indexes related to disaster, risk management, prevalent vulnerability.</td>
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<td>Disaster Management in Hospitals: Shifting Strategy Towards Systems Approach</td>
<td>Muzaffar Ahmad, J.S. Murli</td>
<td>Research paper</td>
<td>System approach to address gaps in disaster management from the conventional to modern approach in various schools.</td>
<td>2012</td>
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<td>Earthquake disaster risk management planning in schools</td>
<td>Mahmod Hosseini, Yasamin O. Izadkhah</td>
<td>Research paper</td>
<td>Development of earthquake disaster management system for the schools.</td>
<td>2006</td>
<td>Basis for the emergency management system for the schools.</td>
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<td>Daya Kaul, Md. Ayaz., Lohitkumar SN</td>
<td>Research paper</td>
<td>Mitigation and prevention of various natural disasters in india</td>
<td>2005</td>
<td>Approaches to tackle various disasters and development of models.</td>
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<td>De Guzman, E. M., &amp; Unit</td>
<td>2003</td>
<td>Different aspects of disaster management approach</td>
<td>Risk management aspect of the disaster management approach</td>
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<td>Internet</td>
<td><a href="http://www.jsdmd.in/">http://www.jsdmd.in/</a></td>
<td></td>
<td>State disaster management plan, IEC materials etc.</td>
<td>Need for the development of disaster management system.</td>
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<td>National institute of disaster management (NIDM)</td>
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<td><a href="http://nidi">http://nidi</a> md.gov.in/</td>
<td></td>
<td>Disaster management at national level, disaster updates etc.</td>
<td>NIDM periodicals gave the base for the research.</td>
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<td>17</td>
<td>National disaster management authority (NDMA)</td>
<td>Internet</td>
<td><a href="http://ww">http://ww</a> w.ndm a.gov.in/en/</td>
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<td>National policy, plans, capacity building etc.</td>
<td>Literature source, DM organisations for the basis of research.</td>
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<tr>
<td>18</td>
<td>National disaster response force (NDRF)</td>
<td>Internet</td>
<td><a href="http://n">http://n</a> dfandc d.gov.in/</td>
<td></td>
<td>Concept of civil defense, home guards and fire cell in disaster management</td>
<td>Role during disasters and strategy development.</td>
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<td>19</td>
<td>National disaster management division (NDM)</td>
<td>Internet</td>
<td><a href="http://ww">http://ww</a> w.ndmindia.nic.in/</td>
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<td>Plans, norms, reports about disaster management, implementation.</td>
<td>Basis for upgradation of traditional strategy for school safety</td>
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<td>Indian meteorological dept (IMD)</td>
<td>Internet</td>
<td><a href="http://www.imd.gov.in/">http://www.imd.gov.in/</a></td>
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<td>Weather forecasting, press release and alerts.</td>
<td>Aid to the disaster management system</td>
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<td>The Telegraph Newspaper</td>
<td>Correspondent</td>
<td>2015</td>
<td>Student’s death due to lack of information by school management on diseased conditions.</td>
<td>School database for diseased children and special care to be taken.</td>
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<td>23</td>
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<td>Road accidents kill many students.</td>
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<td>Quality issues in mid day meals.</td>
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<td>The Hindustan Newspaper</td>
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<td>2004</td>
<td>School fire accident was met.</td>
<td>School fire plan should be developed.</td>
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<td>28</td>
<td>The Hindu Newspaper</td>
<td>Correspondent</td>
<td>2001</td>
<td>School safety in natural disaster like earthquake.</td>
<td>Infrastructure should be developed for future disasters.</td>
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<td>29</td>
<td>The Times of India Newspaper</td>
<td>Correspondent</td>
<td>1995</td>
<td>School fire disaster.</td>
<td>Fire evacuation plan and strategies to be developed.</td>
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</table>
5. Research work that was done on the topic, so far

Under Disaster management Act 2005, various plans and organizations have been developed by the Govt. of India to combat the various types of disasters. At the national level as well as state level we have different types of organizations like National disaster management authority (NDMA), National institute of disaster management (NIDM), national disaster management division (NDM), National disaster response force (NDRF), Indian Meteorological department (IMD), Disaster management department, Govt. of Jharkhand etc which on coordination and integration with each other are generating positive responses in managing disasters.

Disaster management is a continuous process and its application is diverse in different fields like natural disasters, manmade disasters and pandemics. Various researches have been done by Government agencies and officials in order to constitute various programs and plans. External researchers have done many works on integration of various plans for disaster management.

The table presented under the heading concepts/theories/philosophies gives a detailed description of the research work done on the topic so far.

6. Problem Statement

On the basis of literature review, research gap is figured out in the research topic which is described in following points:

- A lot of studies have been conducted in similar line of research. However, there is lack of empirical and field based research on Man-made disasters in schools.
- Research gap regarding formulation and planning of disaster management Strategies and its implementation in secondary schools.
- Research gap regarding comparison of Prevention and Preparedness activities in Government and Private schools in Ranchi district, with special reference to Man-made disasters.
- Research gap in perception analysis of school heads, teaching staffs, nonteaching staff and students.
- Research gap in behavior analysis of students, teachers, non-teaching staffs, parents, disaster management experts etc.
7. Methodology Proposed

The present research is qualitative study which deals with immeasurable aspects of prevention and preparedness in case of man-made disasters in government and private schools in Ranchi district of Jharkhand. The qualitative aspect of present study follows concept of deduction which implies process of reasoning in which conclusion is drawn from the stated objectives with the help of evidences as provided by the respondents and the case studies in the related events.

Other aspect of present study follows inductive approach of qualitative study which involves drawing conclusions about all members of community such as school management, school staffs, students etc by examining a few members of the community (a small sample) by means of conducting personal interviews with the respondents, asking open ended questions, focused group discussion etc.

The subsequent steps for the research design include asking questions to the respondents about the management of man-made disasters, collecting data from the respondents by means of questionnaire, open ended questions, case studies which were done by personal interview, recording and processing information which was done through bar diagrams for different types of man-made disasters, analyzing the information which was done through fish bone analysis for the root and cause analysis of man-made disasters, giving report or recommendations which were done by drawing conclusions from the data analysis, giving intellectual contributions from the research study about management of man-made disasters in secondary schools and highlighting limitations about the study.

In order to achieve research objectives, primary data was collected using structured questionnaires. The respondents included school management head, teachers, non-teaching staff, students, parents, disaster management experts etc.

The methodology will consist of following steps:

- **Pilot study**

A pilot study in the line of the subject would be conducted for testing the research design as well as the feasibility of application of data collection techniques of a small sample say 2 Government schools and 2 Public Schools in Ranchi area of Jharkhand.
Research design

The research would be a qualitative research or which would require extensive survey of the 5 Government schools and 5 Private secondary Schools of Ranchi district of Jharkhand. The research would be a diagnostic evaluation of government plans and policies regarding disaster management and current preventive strategies for manmade disasters.

Research Techniques

The primary sources of data includes primary stakeholders of schools such as school management, Principal, teachers, non teaching staffs, supporting staffs, students etc.

The secondary sources of data includes research papers, Government reports related to disasters, Thesis related to disasters, newspapers citations, books, online information related to various disasters.

The following research techniques would be used in course of research study:

a) Rapport establishment: It is the process of creating the feeling of trust and confidence among the respondents during the initial visits in the field work.

b) Observation: It is the process of scientific and systemic recording of details during the field visit which were observed through naked eyes.

c) In-depth interview: It is a process of less structured, long term discussion with the respondents with the investigator.

d) Case studies: To provide in-depth and comprehensive insights about the experiences of the respondents about those cases within the framework of sample universe.

e) Focused Group Discussion: This method is used to collect information such as perceptions of various stakeholders of schools, psychological behaviors of students, stress management, panic management etc.

For effective and flawless data collection, survey method would be used. The questionnaire would be prepared for the effective data collection and will be based on survey method.
8. Data proposed to be collected and Analysis Techniques to be used

The study aims at obtaining critical information about disaster management in Government schools and Private schools in Ranchi district of Jharkhand. The data collected would be primary data and will be collected by conducting personal interview with help of structured questionnaire, focused group discussion and case studies.

Following approaches would be used for the data analysis:

a. **Familiarization**: The collected data, observations, case studies were studied in order to get key points, so that concept can be figured out and later relationships could be developed.

b. **Identifying Thematic Framework**: Key issues were identified and concepts were developed out of the collected data by which data can be examined and referenced.

c. **Indexing**: In this phase, all data were condensed to get some numerical values out of the texts obtained at the time of in-depth interviews, case studies and focused group discussion.

d. **Charting**: The indexed data were rearranged according to various thematic frameworks to which they relate and charts, fish bone diagrams etc.

e. **Mapping and interpretation**: In this phase, different charts were used to define the concepts; mapping was done to draw some insightful conclusions and recommendations.

9. Relevance of Projected Findings

The research findings would serve value addition to the society in terms of current assessment for the management of disaster in schools. Based on research findings, Government and private secondary schools could adopt the disaster management plan for effective risk analysis, disaster prevention and preparedness. The research findings would present comparative disaster management strategies of Government and Private secondary schools, perception analysis of respondents, behavior analysis of respondents, findings from focused group discussion and root cause analysis by means of case studies.
10. Challenges / difficulties anticipated taking up the study and how to address them

Challenges that might come up during the research survey are given as:

- Getting permission from the Government and Private school authorities to conduct survey in their schools. This can be addressed by getting one permission letter from the competent authority.
- Survey in around 10 schools to complete the research and this can be addressed by classifying the schools in different strata and then start survey from one end to the other.
- Interviewing of all the stakeholders related with disaster management- including the school heads, teachers, non-teaching staffs, students, disaster management experts, parents etc.

11. Proposed time frames for completion of the major milestone

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<th>Topic to be covered</th>
<th>Time duration</th>
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<td>7</td>
<td>Extensive data survey</td>
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<td>Presentation of Data Surveyed</td>
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12. Help required from the University

Help in the form of analysis of surveyed data and continuous guidance from research supervisor as well as research guide in the process of research.
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