

**ESSENTIAL TRAINING NEEDS FOR INJURY REDUCTION
IN WATER AND WASTEWATER PROJECTS
IN SRI LANKA**

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Degree of Master of Science in Occupational Safety and Health

Management

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Declaration

I hereby declare that I compiled this thesis and it is a record of the work I completed. I have read all references cited here (unless otherwise stated) and that it has not been previously accepted by a degree or diploma in any other university or institute of higher learning. To the best of my knowledge and belief, it does not contain any material previously published or written by another person except where acknowledgement has been made in the text.

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A.G.Amarananda

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Date

The candidate mentioned above has conducted the research for the dissertation for the Degree of Masters under my supervision.

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Dr.(Mrs.) Nayanthara De Silva

.....

Date

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Essential training needs for injury reduction in water and wastewater projects in Sri Lanka.

Abstract: Water and wastewater projects have been recognized as one of the most vulnerable types of projects and with a reported number of annual injuries due to high involvement of underground / trenching work and crowded and congested sites. Therefore, it is required to maintain proper safety measures in those projects for the reduction of injury. This research is established to investigate the essential training needs that are required to educate on occupational safety and health to reduce injuries of the employees of water and the wastewater projects in Sri Lanka.

Five projects located in Colombo North, Colombo East, Colombo West, Colombo South, and Thimbirigasyaya Divisional secretariat area were selected for the research. Random sampling technique was utilized to select 210 respondents from 401 of the total workforce, which is a 52% sample. A questionnaire survey was carried out to collect data. Printed copies of questionnaires were distributed among the respondents.

This study is able to identify that first-aid type injuries occur frequently in the water and wastewater projects in Sri Lanka. Minor accidents and injuries take place occasionally. Major accidents and injuries seldom occur. Permanently disabling / fatal type accidents happen extremely rarely in the water and wastewater projects in Sri Lanka. It was identified that the risk levels of trench collapsing accidents and electrocution accidents seemed to be relatively high compared to falling from heights, being hit by falling or flying objects, slipping and tripping, traffic, chemical exposures, fire and such other accidents. Further, it was identified that, there is an extreme training demand for trench protection methods. Twelve number of training needs are proposed as essential training areas for the floor level workers in the water and wastewater projects.

Accident preventive actions were categorized as management aspects and employee aspect. Limited time, cost allocations and high number of workforce are the challenging factors of training. Knowledge management strategy can be implemented by forming construction groups to able to share the experience and knowledge with the team as a part of on the job training.

Key words: construction accidents, essential training needs, construction industry, risk assessment, safety in construction site.

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LIST OF ABBREVIATIONS

| Abbreviation | Description |
|--------------|---|
| CMC | Colombo Municipal Council |
| CPF | Construction Project Features |
| ESH | Environmental Safety and Health |
| GDP | Gross Domestic Product |
| HIRA | Hazards Identification and Risk Assessment |
| LTA | Lost Time Accident |
| NWSDB | National Water Supply and Drainage Board |
| OSH | Occupational Safety and Health |
| PPE | Personal Protective Equipment |
| Sig | Significance |
| SOPs | Safe Operation Procedures |
| SPSS | Statistical Package for the Social Sciences |
| Std | Standard |

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