

ERGONOMIC RISK ASSESSMENT OF LABOURS IN RICE MILL

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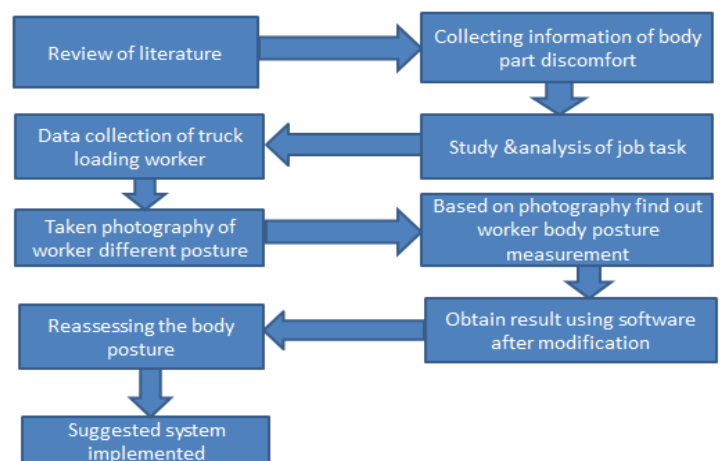
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Abstract— The process of shifting material manually has the potential for injury to employees. The purpose of this study is to assess and analyze the injury risk level in manual material handling activity, as well as to improve the condition. Truck loading & unloading activity is carried out by the employees.

The body discomfort level was analyzed by using the method of Rapid entire body assessment (REBA). In this study 6 male truck loading operators were taken as subjects, they are loading paddy bags from truck to stacking area manually. The task involved small repetitive movement while handling material, due to this the load man has faced work related musculoskeletal problems. When the REBA method the major discomfort was found in the body parts such as neck pain, lower back, forearm, upper arm, shoulder pain, shoulder blade pain. People, especially load mans, are unaware of the importance of having the right attitude when doing their work on loading and unloading process. For this reason, this study is conducted to help labours in order to identify the risk level material handling with awkward posture during their rice mill. This is done using the REBA method, and the scores reveal that some steps are needed to further improve it. Some ergonomic tips are given to help labours. The risk assessment study was conducted on 10 labours by observing the videos and photos taken. Different postures are selected and REBA scores are given to assess the risk level. In addition to general ergonomics tips, some specific tips are provided for those particular posters, which can help to reduce the risk.

generates an action list which indicated the level of intervention required to reduce the risks of injury due to physical loading on the operator. REBA is intended to be used as part of a broader ergonomic study. The risk assessment study was conducted on 6 labours by observing the videos and photos taken. Different postures are selected and REBA scores are given to assess the risk level. In addition to general ergonomics tips, some specific tips are provided for those particular posters, which can help to reduce the risk.

METHODOLOGY



REBA Worksheet

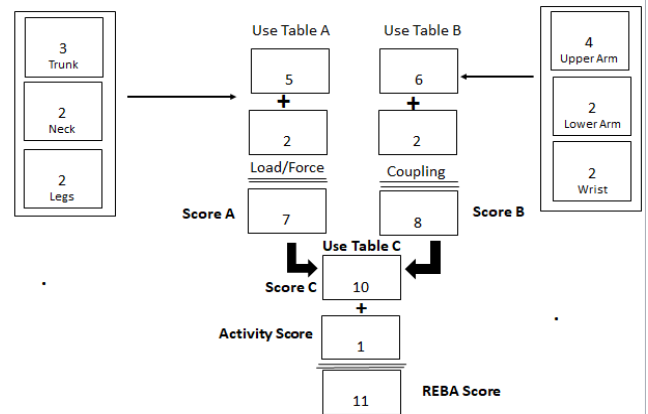
Keywords—Ergonomic, REBA, truck loading conveyor,

I. INTRODUCTION

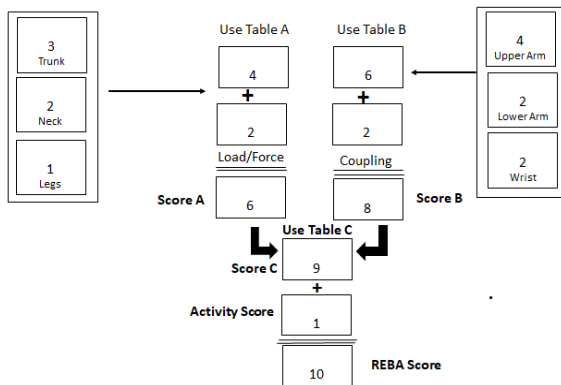
The purpose of this study is to present a strategic plan for conducting an ergonomic risk assessment of labours in rice mill. The study is conducted to help labours in order to identify the risk level of carrying load with awkward posture during their loading & unloading process. This is done using the REBA method. Rapid Entire Body Assessment (REBA) is a survey method developed for use in ergonomic investigations of workplaces where work related Musculoskeletal disorder reported. REBA is a screening tool that assesses biomechanical and postural loading on the whole body with particular attention to the neck, trunk, leg, upper arm, lower arm and wrist. A REBA assessment requires little time to complete and the scoring

RESULT

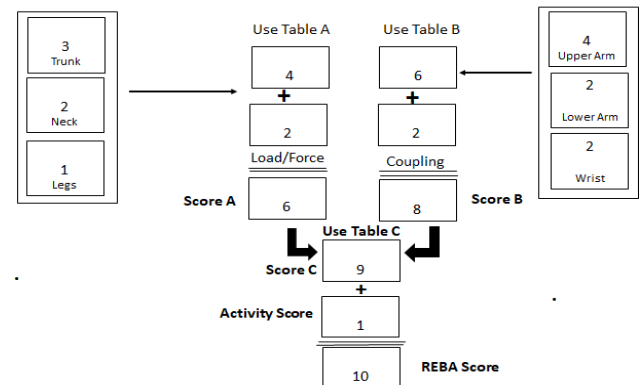
posture 1



POSTURE 3

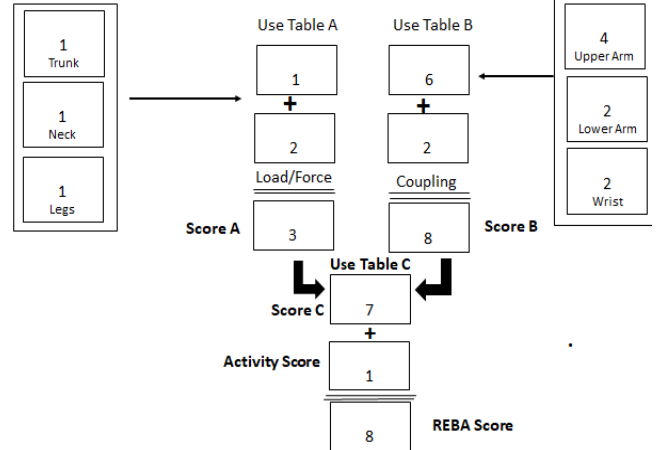
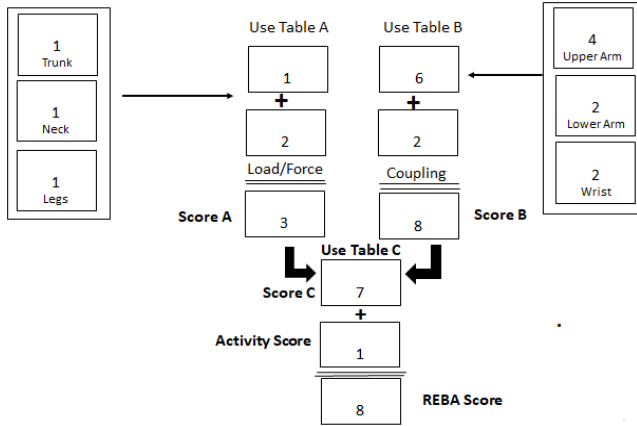


Posture 2



Posture 4





POSTURE 5

SCORE TABLE



Table 1.Score A

	Neck	Trunk	Leg	Table A	Load	Score A
Sample 1	2	3	1	4	2	6
Sample 2	2	3	2	5	2	7
Sample 3	2	3	1	4	2	6
Sample 4	1	1	1	1	2	3
Sample 5	2	3	1	4	2	6
Sample 6	1	1	1	1	2	3

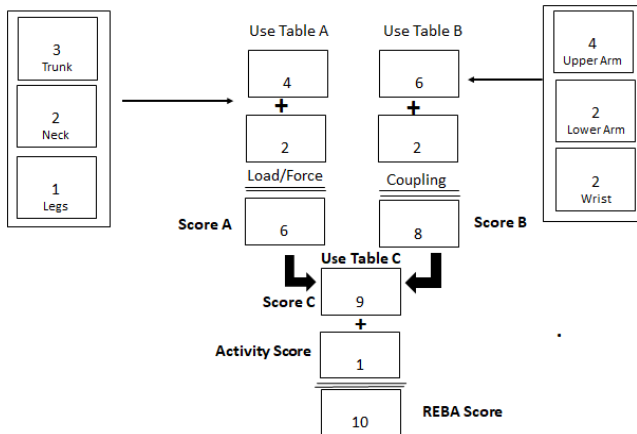


Table 2. Score B

	Upper Arm	Lower Arm	Wrist	Table B	Load	Score B
Sample 1	4	2	2	6	2	8
Sample 2	4	2	2	6	2	8
Sample 3	4	2	2	6	2	8
Sample 4	4	2	2	6	2	8
Sample 5	4	2	2	6	2	8
Sample 6	4	2	2	6	2	8

POSTURE-6



Table3. REBA score

	Score C	Activity	REBA
Sample 1	9	1	10
Sample 2	10	1	11
Sample 3	9	1	10
Sample 4	7	1	8
Sample 5	9	1	10
Sample 6	7	1	8

Posture	REBA score
Posture 1	high risk , investigate and implement change
Posture 2	Very high risk , implement change
Posture 3	high risk , investigate and implement change
Posture 4	high risk, investigate and implement change
Posture 5	high risk, investigate and implement change
Posture 6	High risk, investigate and implement change



RESULT AND DISCUSSION

Report is provides ergonomic risk assessment on labours in rice mill, here clearly analysis systematic REBA score for 10 postures. These 6 postures is for load carrying operation. In his **REBA scores** are randomly 8, 10, 11. Namely high risk, investigate & implement change and very high risk, implement change. After assessing the risk, the labours are given some economic tips which will help them to overcome the health problems they face during their material handling, thus reducing the risk.

This research may provide useful information for labours who experience neck pain, back pain, lower back pain, weak of back muscles, upper arm pain, shoulder pain and shoulder blade pain. So the risk associated with manual material handling is greatly increased if labours working different posture. A study can be conducted in using new mechanical devices for handling the material mechanically. Designing efficient way of handling materials mechanically by use of truck loading conveyor to load and unload rice bags.

We are using this method effectively on loading and unloading areas, so that risk level can be reduce. These truck loading conveyors are height adjustable and can be easily portable. This conveyor have Noiseless operation, Large length of conveying path, Lower power consumption, Long life, Adaptability to different types of goods, Ability to carry almost any bulk material, High reliability of operation, Can transport material in any direction. The conveyor, when placed efficiently in loading & unloading areas, will drastically reduce the adverse impact on workers i.e., musculoskeletal disorder

TRUCK LOADING CONVEYOR



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