



ازدینو کرمینو بندگانو کرمینو
UNIVERSITI
TEKNOLOGI
MARA

BACHELOR OF NURSING

TECHNOPRENEURSHIP (ENT 600)

GROUP ASSIGNMENT:

PRODUCT: PORTABLE EASY PHOTOTHERAPY

No.	STUDENTS NAME	ID NO
1	NORJAH BINTI OTHMAN	2014657036
2	NOR-MARINI BINTI MOHAMED	2014280922
3	LAILATUL HAZZLIZA BINTI MUSA	2014247236
4	MAZIRAN BINTI MUHAMAD	2014267128

LECTURER: MADAM ZANARIAH BINTI ZAINAL ABIDIN

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COMPANY'S LOGO





CHAPTER 1

1.0 PRODUCT DESCRIPTION

1.1 Introduction

The results from our observations, the percentage of baby jaundice tend to rise over the time. The number of beds was insufficient and the rate of infection also increasing. Therefore, we have decided to produce 'Portable Easy Phototherapy' to solve the problem. Phototherapy is an effective treatment to decrease bilirubin levels in infants with severe jaundice. It is widely used method of treating neonatal jaundice as it is far safer and it is easier to perform than exchange transfusion.

The action of LED UV light has been shown to break down bilirubin thereby effectively reducing its concentration and preventing brain damage. It is generally accepted that light in the visible blue spectrum with wavelength 420 to 480 nanometer is of most therapeutic value and hence blue tube lights transparent filter or white tube light with blue filters are used in phototherapy units.

It is believed that if the distance of 45cms between phototherapy source and neonatal child is kept then the wave length of 420 to 480 nanometer is achieved.

1.2 Background

Jaundice is a common condition in newborn babies. Jaundice is caused by the build-up of bilirubin in the blood. Bilirubin is a yellow substance produced when red blood cells are broken down. Jaundice is common in newborn babies because babies have a high level of red blood cells in their blood, which are broken down and replaced frequently. The liver in newborn babies is also not fully developed, so it's less effective at removing the bilirubin from the blood.



Other symptoms of newborn jaundice include:

- yellowing of the palms of the hands or soles of the feet
- dark, yellow urine – a newborn baby's urine should be colourless
- pale-coloured stool – it should be yellow or orange

1.3 Purpose of development

- This Portable Easy Phototherapy is built for baby jaundice that is taken care by the nurse to treat Jaundice.
- It helps to decrease the level of bilirubin.

1.4 Product Concept

- It has LED UV light above the baby.
- It consists of timer for the treatment, sensor and alarm to detect if the temperature is increased suddenly.
- It can be folded, light, comfortable, friendly to use and easy to carry like a briefcase. (4 inch x 50cm)
- It has a holder for easy to carry.

1.5 Application

Phototherapy to treat jaundice in Nursery, NICU and paediatric ward in the hospital.