

# An Innovation of Children Outdoor Clothing to Increase the Risk of Playground Injuries

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## ABSTRACT

Children need clothes that are suitable to play. Clothing worn not just giving comfort to move, but it will guarantee the safety of the child's body from susceptible to injury. Variety of children's clothing brand now produced according to the needs and comfort of the children. Especially in terms of design, the use of fabrics, clothing accessories capable captivate consumers, such as parents. In the process create a new ideas and design to produce specific clothing for the children play at the playground, various factors and important features should be applied. Appropriateness of clothes according to the age of the child, the use of appropriate materials and fabrics, styles and designs, use of colour and motive is very important. In addition, other factors such as safety, protection and functions of clothing should be preferred. The quality clothing is not just showing the uniqueness of design and comfort, but also has its advantages and importance to the user.

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## 1. INTRODUCTION

Children, especially toddler needs attention and care when playing. Parents should be concerned about their child's safety when playing, as well as ensuring that their child clothing does not contribute to the accident or injury while playing in the playground. Toddlers especially do not understand the situation around and the dangers that can occur on them. They move with comfort and follow gestures an adult such as a parent or their siblings. Toddlers are also susceptible to injuries such as falls due to a physical condition that still small and not balanced. In the process of learning and playing, the toddler body susceptible to injury that may adversely affect their health. According to Consumer Product Safety Commission U.S, thirty (30) percent of the victims reported through the current study were of preschool age under five (5) year. Female were injured slightly more frequently (55 percent) than male (45 percent) recorded related to injuries involving playground equipment, (Donald, 2001).

According to the World Health Organization (WHO) and UNICEF, each year over 2,000 children die in accidental injuries, (Priya, 2011). Playground is one of the places that to contribute most injuries to children while playing. Playground injuries are common and present an important cause of childhood injury most countries in developed world, (M Mackay, 2003). The accident on the playground mostly due to the impact of a children fall from playground equipment. Besides, clothing is a one of the recorded injuries happened on the playground was when the children did not wear appropriate clothing such as stringed. Drawstring can cause a child to choke on playground. According to Consumer Product Safety Commission U.S 2001, "eighteen (18) deaths and 38 non-fatal incidents associated with neck/hood drawstring on children's outerwear between January 1985 and September 2009 involving children eighteen (18) month to ten (10) years of age. Public playground is an area that mainly contributed to children's injuries. This is because some public playground equipment is not well-kept and not properly maintained. "Each year, over 200,000 children are treated in emergency department for playground-related injuries. Over 70% of these injuries occur on public playgrounds", (Diane Winn,

2011). “Public playgrounds form a significant part of the play opportunities for children’s”, (Norton, 2004).

## 1.1. Statement of Problem

Play is fun activities which give children feel freedom and do what they want also imaginative. “Play it’s not just for kids, but for adult too. It is because play give benefit for human besides for relax, play also connect us to others, fosters creativity, flexibility, and learning, antidote to loneliness, isolation, anxiety, and depression, teach us perseverance, makes us happy, relationships, helps us develop and improve our social skills, teaches us how to cooperate with others, play can heal emotional wounds, also the key to productivity and innovation” (Kemp, 2013). Children play on the playground with their family especially their parent that become a valuable experience while still small. Children play with filled happy feelings while learning and understanding things. However, some children and also their parents have bad experience when their child is injured while playing and this injury may lead to death. “Children injuries are an important public health and development issue. In addition to the 830 000 deaths every year, millions of children suffer non-fatal injuries that often require long-term hospitalization and rehabilitation, (Margaret Chan, 2008). One of the causes of accidents involving is used of inappropriate clothing while playing especially on playground. According to Consumer Product Safety Commission, “drawstring on children’s jackets and sweatshirts, hooded t-shirts and capes that caught on the playground equipment”, (Shields, 1996). This can be seen, some of children’s clothing do not apply the safety features and standard. However, not all types of children clothes and design are suitable to wear at playground.

Toddler are physically, have small body and disproportionate body especially when playing. They also do not know recognize and understand the dangers around them. Each activity should be monitored closely by their parents. However, children also need specific protection against themselves while playing. Clothing is a one of appropriate protection for the child's body. “Many popular designs of children’s clothing have been developed for the comfort and safety of child”, (Harris, 2006) and “safe clothes that can improve reliability and freedom of motion”, (Cho, 2011). There is a need to design special clothes for children when they play. Playsuit gives the small ones the invaluable advantage of being allowed to romp around freely, without reminder that they have to be careful with their clothes”. Therefore, this study is performed to ensure the important features that need to be displayed on children’s clothing when they play (Torell, 2010).

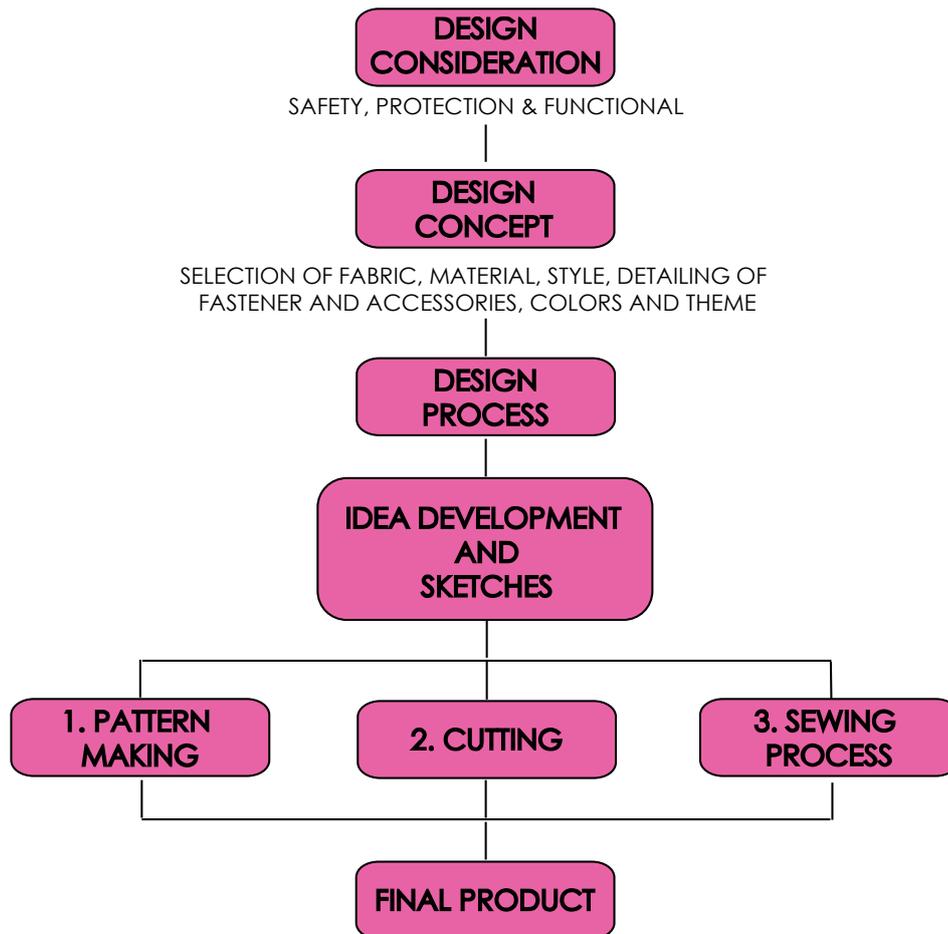
## 1.2. Objectives

1. To explore the new design for body protection using a technique, material and fabric which suitable for toddler.
2. To produce new safety styles clothing design that give comfort for toddlers specifically for playground.
3. To create awareness among parents about the need of having safety and protection features on the clothes when playing.

## 2. DESIGN AND EXPERIMENTATION

At the beginning of the design process, the researcher must specify design consideration; design consideration is where information obtained from the data collection. Design consideration is the result of the research done such as what the community wants and ideas derived of research. This information is important to assist in the design process of clothing for toddler. Design consideration appropriate characteristics to be applied on design such as safety element or detail, selection of material in term fabric selection and protection material, practicality, detailing, aesthetic and enhancement of accessories.

After obtaining information from design consideration, researcher began to express design concept based on information from design consideration and forecasting. After that, researcher will be starting to design process of idea development such as drawing and sketches also make some sampling especially protection. Besides that, researcher have to know the characteristics of design such as color, type of fabric and material to be used, styles, and trend following current forecasting. After the selection of the final design, another process is pattern making based on suitable sizing for toddler, cutting fabric, and lastly, sewing process. This process will be conducted by the researcher at the Universiti Teknologi Mara Shah Alam besides guidelines from the supervisor and lecturers. The following is a flow chart for design process:



### 3. SKETCHES AND IDEATION

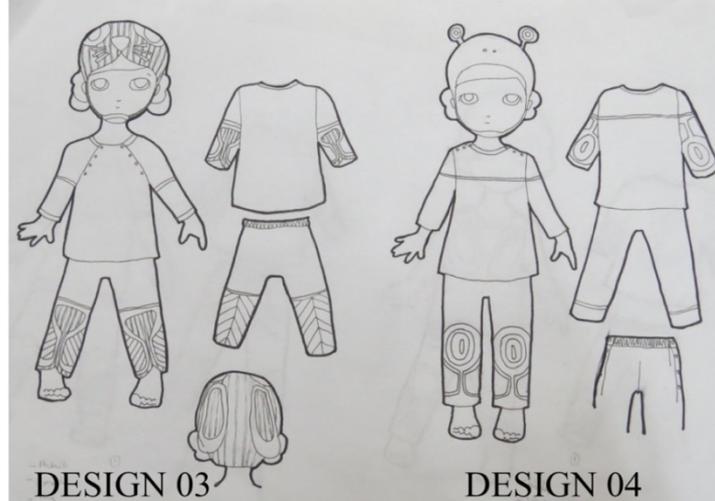
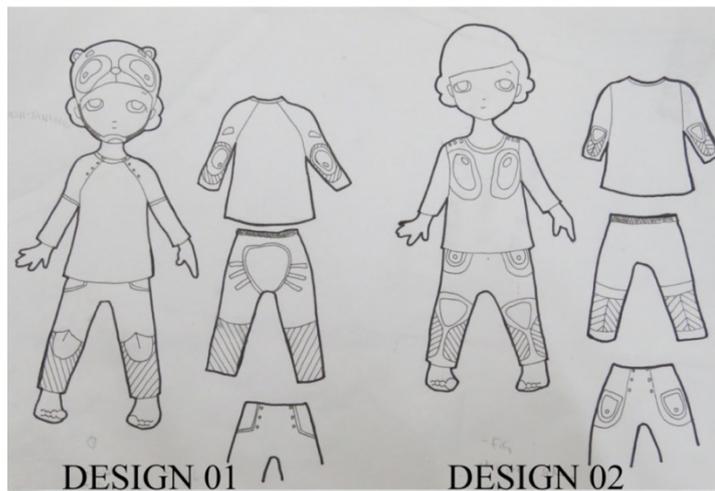


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## 4. FINAL DESIGN









## RECOMMENDATIONS

For a future study, researcher hopes the new researcher do the research in more depth in this study. The outfit involving safety features and the protection for children is widespread, especially clothing for play. However, there is still much research should be carried out and given attention follow the passage of time.

In addition to the use of material, fastener and accessories, safety features may also involve technologies such as the production of higher quality fabrics also innovative new technologies that can be applied to clothing. Additionally, they apply the latest technologies such as security tool that is able to produce sound or light and can controlled with using control device as a safety device on clothing or children's products.

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