

## Research Article

# Alternative Designs of Coat for Pharmacists

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**Abstract.**

To date, a pharmacist's coat cannot be distinguished from a doctor's coat. In general, people still identify the profession of pharmacist with that of a doctor, because the color and attributes of their coats are still the same. The purpose of this research is to design a special pharmacist's practice coat that can differentiate it from a doctor's practice suit with new innovations and designs that are more ergonomic and equipped with the right pocket placement and more functional. A practice coat is formal attire worn by professionals in the health or medical field with white or light blue characteristics, is designed to be easy, and gives a clean and professional look. Design thinking was implemented using the Hasso Plattner model through five stages, namely empathize, define, ideate, prototype, and evaluation. The results of the research are clothing in the form of a pharmacist's coat with inner pocket and a model that can increase the efficiency and comfort of a pharmacist's work.

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## 1. INTRODUCTION

Every health worker is required to wear a personal protective equipment (PPE) uniform such as the practice coat used by pharmacists and doctors to make the work area safer, protect body parts, and prevent cross contamination (Sari, 2020). Based on questionnaire data from 50 respondents, pharmacists have several service locations, divided into three, namely health centers, pharmacies and hospitals. Pharmacists belong to the official professional organization that oversees all pharmacists in Indonesia since September 16 1965, namely the Ikatan Apoteker Indonesia (IAI).

Many health workers cannot be identified as pharmacists, because their color and attributes still look the same as doctors. Because white coats have become the hallmark of doctors (Hidayat, 2017). However, the IAI (Ikatan Apoteker Indonesia) has determined the color for pharmacist coats, namely Ivory White. This decision was taken at the first IAI national working meeting, 2014-2018 management period. Therefore, IAI is socializing that pharmacists are required to wear practice jackets when carrying out pharmaceutical

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practice. However, based on questionnaire data, the majority of pharmacists do not wear coats when providing services. In fact, according to respondents, practical coats are very important to wear when providing services. Pharmacist practice coats are worn so that the public is aware of the professional role of pharmacists and ultimately in hopes of improving the quality of service for the public (Source: Journal of the Ikatan Apoteker Indonesia).

Based on the above problems, the Ikatan Apoteker Indonesia (IAI), represented by Mrs. Tresnawati as representative of the IAI General Secretariat, asked the author to carry out a design with a designer and trendy touch so that it could elevate the identification of pharmacists and not just differentiate the professional practice jackets of pharmacists from doctors. Respondents need new designs and innovations in the practice jackets they will use to provide services. Mrs. Tresnawati conveyed the characteristics determined by the IAI to be included in a practice jacket, such as a pen holder, front opening of the jacket, simple jacket collar, pharmacist writing on the chest, pockets, etc. This common thread will be validated through questionnaires to pharmacists. In this case, Mrs. Tresnawati needs a practice coat that can show the pharmacist's identity to the public (Tresnawati, 2023).

In the next stage, the partner who will produce practice suits is PT. Nina Nugroho International. The author partners with PT. Nina Nugroho International, which has long been known for designing work clothes, represents a good image for pharmacist workers, and has competent standards in making work clothes in mass production (Wanfiyani, 2023). Through the problems above, the author hopes to be able to create a practice suit that can identify the pharmacist profession with functional, detailed, material according to the pharmacist's attribute requirements that have been provided by IAI, help the public and health workers in identifying pharmacists at their place of service, and can create clothing constructions that easy to produce by PT. Nina Nugroho International.

## 2. METHODOLOGY/ MATERIALS

This research uses exploration, observation, literature study, interviews, questionnaires adapted to the Design Thinking approach. Design Thinking is a method that focuses on the sense of empathy felt by users. Design Thinking is generally used to develop renewable products or services, or improve existing products. Creating products or services by observing and paying attention to the needs of users of a product or service,

using the results of observations to determine the suitability or feasibility and success of the product or service.

Hasso Plattner Institute of Design is the most widely used design thinking scheme for research methods. Quoting Thedailystar, the Hasso Plattner model has five stages that can be adjusted and do not always have to be sequential. Hasso Plattner's Design Thinking approach includes five main activity stages, namely, (1) *Empathy* or exploring user or partner problems; (2) *Define* or determining the problem based on the results of empathy; (3) *Ideate* or search for ideas as solutions to predetermined problems, including conducting experiments and designing products or designs; (4) *Prototyping*, namely making a prototype based on design ideas; (5) *Evaluation or Test*, namely conducting tests on users regarding the resulting prototype to get feedback. One of the advantages of the design thinking approach is the non-linear literacy process in all stages until reaching a product or prototype that is considered feasible.

1. Empathize is a stage used to find out the root of the problem or understand the problem for which a solution will later be provided. At this stage the author conducted an interview with the Ikatan Apoteker Indonesia, namely Mrs. Tresnawati as Deputy Secretariat General to find out the needs, problems and what the organization really wants. At this stage it can be seen that there is a request to make practice coats to identify the pharmacist profession because it is difficult to differentiate pharmacist practice coats from doctor practice coats. From the results of the literacy study, it can be seen that people still have difficulty identifying the profession of pharmacist because there are similarities in the attributes of practice coats. The next stage that the author will carry out for data collection is to distribute questionnaires to pharmacists and the public to validate the design characteristics that have been provided by IAI for the author's research as well as asking questions regarding the functionality, details, material of the practice jacket desired by the user. Looking for a qualified manufacturer to produce practice suits. A manufacturer that is qualified to produce pharmacist practice coats is PT. Nina Nugroho International.
2. Define is the stage to find out what problems are occurring through user conditions and activities by analyzing the problems that will be identified further. At this stage the author determines the problem according to IAI interviews, literacy studies, and questionnaires. At this stage, all the information obtained from the empathize stage will be analyzed by the author and grouped to find the core problems of the respondents that will be identified. From interview data by Mrs.

Tresnawati, the Ikatan Apoteker Indonesia granted a patent for the practice coat design. Based on this data, a practice coat was designed to identify the pharmacist profession. Determine the design brief which will be a reference for creating ideas and prototypes based on the data that has been obtained.

3. Ideate is the stage for finding solutions, whether ideas that can later become solutions to existing problems. At this stage the author designs a practical jacket by developing ideas and putting them into a moodboard and design concept chart to express all the inspiration in the form of images that fit the frame of mind then arrange them to look attractive, designing 30 alternative designs, exploring inner pockets, texture details, placement of motifs for pharmacist practice jacket in accordance with the data obtained. Looking for practical suit construction (sewing patterns and techniques) that make it easy and fast for mass production of pharmacist suits, calculating pre-production prices and selling prices, looking for materials.
4. Prototype is the stage for implementing the idea of making a product as a solution to the problem taken. After going through the ideation stage by designing 30 alternative designs, the next stage is selecting the design that will be realized into a fashion product. At this stage the author discusses the designs that have been made with partners by selecting 10 selected designs, then selects the designs resulting from discussions with these partners to users via a questionnaire as a data collection method. At this stage the author realizes the idea by designing a Pharmacist Practice Coat based on the data obtained. Using data-based materials and details. At this stage, the author makes product samples based on designs chosen by users and partners to represent the Ikatan Apoteker Indonesia logo on practice jackets. The prototype that will be made consists of three practical jackets with exploration of quilting embroidery and details such as pockets, collars and cuffs.
5. Evaluation is the testing stage of the solution that has been implemented by conducting tests on several panelists or the target market regarding the product that has been created. At this stage the author met with several panelists to carry out assessments and evaluations to get input on the fashion products that the author had created.

### 3. RESULTS AND DISCUSSIONS

Using the Hasso Plattner model of design thinking approach, the following is a description of the activities carried out by the author in the research.

#### 3.1. Emphasize

At this stage the author conducted interviews with partners to find out the needs of the problem, and what the partners actually wanted, namely the Indonesian Pharmacists Association. After conducting interviews, it was discovered that the Ikatan Apoteker Indonesia needed a clothing design to identify the pharmacist profession through practice jackets because they were still the same as doctors' practice jackets. With the characteristics of practice jackets provided by partners such as pen holders, pharmacist writing on the chest, pockets, ivory white and red. Then the author approaches users to find out their needs in terms of functionality, details, color and other characteristics through a questionnaire as a data collection method. Questionnaires were distributed to pharmacists under the Ikatan Apoteker Indonesia. Based on the results of the questionnaire, 65.1% of respondents answered that the coat they wore during the service was still the same as the doctor's practice coat. During the initial interview with Mrs. Tresna, she said that there was a need for new designs, innovations and characteristics for pharmacist practice jackets. Then, the author validated the respondents through a questionnaire by asking questions about their needs for innovation, design and characteristics of Indonesian practice suits.

The author asks questions about how important a suit is in carrying out services, what kind of characteristics it requires, what equipment is needed when carrying out services. Based on the results of the questionnaire, respondents answered the needs that must be included in a practice jacket when providing services. Such as stationery, name tags, pens, cellphone holders and notebooks.

The respondents' hopes for the pharmacist's practice coat which will be designed by the author are that the color of the coat should not be the same as a doctor's practice coat, there will be a symbol of the Ikatan Apoteker Indonesia logo's, plus a pharmacy logo's, the practice coat will be able to represent the pharmacist profession. Therefore, based on these data it can be concluded that apart from the addition of the characteristics determined by the Ikatan Apoteker Indonesia. The author will add, the quilt embroidery technique with a hexagonal motif to represent the logo of the Ikatan Apoteker Indonesia, makes the color feel like another characteristic of pharmacists'

coats besides ivory white, and makes the design of pharmacists' practice coats different from other health workers

### 3.2. Define

At this stage, the author analyzes the data that has been collected to find solutions for designing pharmacist practice coats so that they are not the same as doctor practice coats. The author also uses the "six thinking hat" method to evaluate and process the information that has been obtained at the empathize stage and validated with a questionnaire to pharmacists. The results of this analysis are outlined in a design concept chart which will serve as a guide in the process of developing and manufacturing pharmacist practice jackets.

From the concept of the design chart that has been created, it can be formulated that the author designed a pharmacist's practice jacket which was made as ready-to-wear women's clothing, with the aim of identifying the practice jacket as a pharmacist's profession. This section begins with the morphology of designing practice coats because pharmacists in providing services do not yet have characteristics in their clothing because the colors and attributes still look the same as doctors.

Through requests from the Ikatan Apoteker Indonesia and conducting a questionnaire to validate the need for new designs and innovations for pharmacist coats. After obtaining sufficient valid information, a design concept chart was created which contained components including classic casual style, office look, which were appropriate to the intended target market and right on target. The use of characteristics that represent a pharmacist, neutral and primary colors according to the IAI logo, pants silhouette, princess line, and H-silhouette, the materials used are belinni semi wool and premium bridal cotton. The clean and characteristic nature of clothing that tends to look well maintained, emphasizes good quality materials, gives an elegant but still comfortable impression, very suitable for classic casual style. Classic, neat and professional clothing can make it easier for pharmacists to match various clothes with a pharmacist jacket which will create an Office Look appearance with a small touch of color that can give a characteristic to the pharmacist jacket. In connection with this problem, the author collaborates with PT. Nina Nugroho International in designing pharmacist practice jackets using clothing that will be produced by the PT. Nina Nugroho International from the data obtained, it can be concluded that it is true that pharmacists need new designs and innovations for the practice jackets they wear during service.

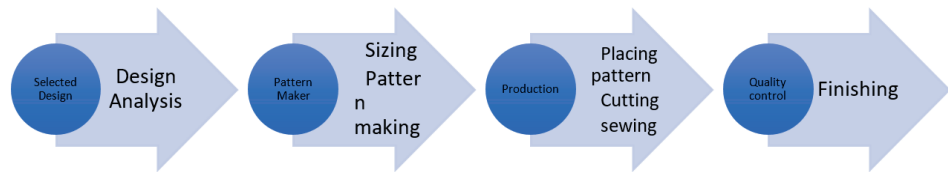
### 3.3. Ideate

In the ideation process, the author used a moodboard as a reference in developing a pharmacist practice coat design. Moodboard provides an overview of reference funds in designing as well as a basis for researching materials and fabrics that will be used, what designs will be made, and as a collection of images of ideas to communicate the concept of making this practical suit

The author pours ideas from the theme into a moodboard which is used to determine goals, direction and guidance in designing ready-to-wear clothing with the concept created by the author. From several data sources that have been obtained, it is able to make it easier for writers to express these concepts into sketches. The author took the theme "Elegance in Pharmaceuticals". This theme can represent pharmacists in terms of the color ivory white which can be associated with elegance, its soft and calm presence gives an elegant feel and implies refinement. Classic elegance can symbolize something classic and long-lasting for this pharmacist practice jacket, with the hope of a timeless design. The calm and simplicity of the pharmacist practice jacket design is expected to create a calming atmosphere and provide a feeling of balance. After determining the theme, the author explored the placement of several models of inner pockets which were placed on the arms in a hidden way, on the inside of the chest and bottom. With the sewing techniques that have been explored previously, it was found that patch and inner pockets are the most appropriate types of pockets. Adding quilting embroidery by applying a hexagonal shape that represents the logo of the Ikatan Apoteker Indonesia, the author also created a fashion design appearance by representing the IAI logo on the pocket, clothing pieces with additional piping to provide firmness with a functional design and provide maximum possible benefits. The hexagonal design also provides dimension and texture to the practice jacket, which can represent the IAI logo on clothing, characterizing the pharmacist profession, increasing the visual and aesthetic appeal of the practice jacket. The hexagonal shape is embroidered with a layer of underlining so that it is not too thick when placed on the collar and other motif placements. In this process, the author also created 30 alternative designs using moodboard references, the IAI logo, and hexagonal motifs, which were combined on several parts of the pharmacist's practice jacket.

### 3.4. Prototype

At the prototype stage, the author carried out the production process of selected suit designs which had gone through a questionnaire and partner selection with the following production flow:



**Figure 1:**

#### 1. Design Analysis

Design analysis is used to simplify the production process and minimize errors in reading designs that have been created

#### 2. Material Design

The material used by researchers in the regular design is bellini semi wool in ivory white and red. Researchers added another material to the white semi-wool bellini, namely embroidery of the same color. The author includes a table of fabric colors and descriptions of fabric characteristics as follows

#### 3. Material Design

Designing materials is done to determine the material requirements that the writer will need.

#### 4. Sewing Work Steps

The sewing process plays an important role in making products, here are the sewing work steps.

#### 5. Product Photos

After carrying out all the production processes above, here are the prototype results

### 3.5. Evaluation

The final stage is evaluating what the author has implemented by conducting user tests on the products that have been created through a questionnaire with several questions



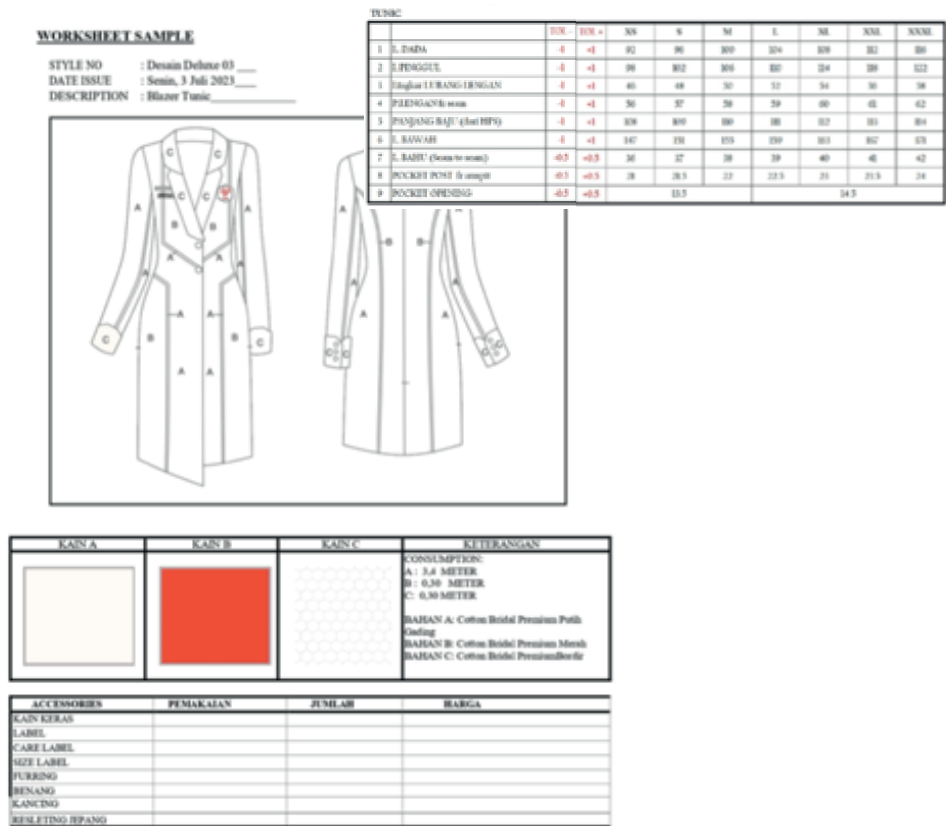


Figure 2:



Figure 3:

regarding functionality, color, detail and design suitability. It must be presented as a solution for users of pharmacist practice jackets to obtain user opinions about the products produced. In this way, the author can test the function of clothing that is late in making. The aim at this stage is to check whether the function of the prototype is appropriate or not. The author asks questions about the comfort of practice jackets when providing services.

In the questionnaire results, respondents answered that pharmacist practice jackets could answer pharmacists' complaints that were conveyed in the background. The

TABLE 1:

No	Work Step	Description	Time
	Prepare the sewing machine, main material, facing, underlining, and lining/furing that has been cut and marked with a pattern.	Make sure all the materials for the blazer to be sewn are complete.	10 minutes
	Ironing the main material with underlining.	Make sure the underlining layer and the main material adhere perfectly.	8 minutes
	Sewing the main material of the front body, making paspoile pocket details and piping.	The front	15 minutes
	Sew the main material of the back body, sew the piping details and blazer slits	-	15 minutes
	Sew the facing and lining, then sew the paspoile pocket for the inside of the blazer.	Seam allowens must be exposed	5 minutes
	Sewing main material and lining	Seam allowens must be exposed	5 minutes
	Sew the collar of the blazer and combine it with the body.	The front and back	10 minutes
	Sew the blazer sleeves from the main material and the lining material, make cuffs with piping details, then combine the cuffs with the sleeves	Sleeves righ and left	10 minutes
	Sew the sleeves to the body, sew the bottom hem of the sleeves.	Sleeves righ and left	10 minutes
	Sew the bottom hem of the blazer to the front and back of the body	The front and back	10 minutes
	Attach embroidery details, buttons and studs to the sleeves.	-	15 minutes
	Finishing	Checking everything and cut off the remaining thread	10 minutes
<b>Sum</b>			113 mnt

design of this suit also answers the needs of pharmacists in terms of their needs, namely innovation and new designs for the characteristics of pharmacist practice coats that they will wear when providing services. According to questionnaire data, respondents agree that the motif, color and pocket are functional for providing services.

#### 4. CONCLUSION AND RECOMMENDATION

Based on the writing of this final assignment, the researcher came to the conclusion that designing practice coats can help pharmacist health workers find characteristics for their practice coats in providing services. The results of the exploration of the right

inner pocket shape are patch pockets and slip pockets as well as the addition of a hexagonal motif design carried out by researchers which is also very suitable for pharmacist practice jackets because it still contains elegant qualities. The majority of potential target markets do not wear practice coats when providing services, the results obtained from distributing questionnaires are the type of clothing that is desired by respondents with the most answers not wearing practice coats when providing services and the need for new design innovations to differentiate pharmacist practice coats from doctor practice coats. From the results of the questionnaire, the author determined a classic casual style and office look that can be used in formal activities when providing services. Researchers applied patch and inner pocket shapes as well as embroidered hexagonal motifs with a combination of semi-wool material on ready-to-wear clothing with neutral and primary color compositions which were realized as prototypes or product samples

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