

Mobile Application Design to Develop a Healthy Lifestyle with Balanced Nutrition for Young Adults

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ABSTRACT

Covid-19 creates new challenges for the health world besides the risk of being exposed to the virus. Our eating habits are one of the new challenges that need to be resolved, especially for the young adult. This new eating habit appears triggered by stress, anxiety, boredom or just to feel happy. Generations of young adults are aware of the need for healthy food and are starting to get used to eat supplements and avoiding certain foods that are felt to have a negative impact on the body. All of this is done to build immunity to prevent Covid-19. However, now is not the right time to run a diet program with a fear, it is time for us to focus more on a better diet and make sure we no longer eat foods that can trigger cholesterol, diabetes and obesity, because all these diseases are the biggest risk factor for someone is having a high level of severity when exposed to Covid-19 infection. Now, we need to know exactly what, when and how to focus on what goes into the body to have a good and fit immune and most importantly happy. Therefore, an innovation is needed to help the young adult in growing awareness for healthy living. The use of smartphones is a technology that cannot be separated, smartphones are able to be present in every aspect of daily life in young adults, as a means of communicating, seeking information or just entertainment. The author analyzes several health applications based on healthy eating and living on smartphones using the Design Thinking Method. The purpose of writing this article is to build and start healthy living habits for young adults. With the hope that in the future young adults can avoid various chronic diseases caused at old age.

Keywords: *Telehealth, Mobile Application, Technology, Nutrition, Design Thinking*

1. INTRODUCTION

At the beginning of 2020, all over of the world including Indonesia were shocked by the serious pandemic, the dangerous infectious disease caused by new variant of flu virus named Coronavirus Disease 2019 or better known as (COVID-19). The Coronavirus disease 2019 (COVID-19) itself is an infectious disease caused by the acute respiratory syndrome coronavirus (SARS-CoV-2). On March 11, 2020, the World Health Organization (WHO) declared the 2019 coronavirus is an outbreak pandemic. This disease has shaken more than 200 countries in all parts of the world, including Indonesia. Various ways have been taken to break the spread of the virus, starting from social distancing and physical distancing where all activities such as work, discussions, and meetings have to be done through internet connection so, the previous activities

before the pandemic appears could remain as usual. The policy of activity restrictions imposed during the pandemic have a serious impact on the economy downturn, food availability, nutritional intake, and people's lifestyles. The current coronavirus (COVID-19) pandemic has forced many countries across the world to enforce a lockdown policy in their areas which resulting in services closure except for essential sectors such as hospitals, pharmacies or mini markets [1]. The temporary closure policy of the area has a predictable effect on the availability and choice of food for the community. The pandemic has limited people's options in food fulfilment needs both in terms of time and dietary habit. The pandemic has restricted food selections, which may impact mealtimes and diet, as well as having a general effect on both physical and psychological health [2]. The opportunity to do outdoor activities such as exercising, visiting the gym or going to the doctor for

a health consultation becomes arduous. Various activities starting to be replaced with online following the restricted activations policy developments during the pandemic. Smartphones become one of essential and inseparable gadgets during the lockdown period for most people. Various new type of applications appears to support indoor activities whose replace everyday activities which usually done by offline.

In dealing with dietary problem in current situation, young adults need someone as motivator or a friend who can be relied on as a partner to share roles to get back together to improve a healthy lifestyle in the midst of this pandemic. In the meanwhile health, diet or exercise applications currently still have some drawbacks. Food tracking apps can be a great tools for educational and awareness in running on diet program but it can also be a sign of danger that points towards excessive obsession [3]. The latest applications that are currently emerge have had a psychological effect on society, it created an obsessive behaviour and gives a feeling of discomfort when using those applications and drive the users get bored easily by using these applications for a certain term of time. The purpose of this research is to create a new compatible application which can be a personal application for young adults back to start a healthy life style once more and improve the connection between the food they feed into the body, including habits and way of eating with more healthier lifestyle and balanced nutrition.

2. THEORY STUDY

2.1 Apps and UI/UX

Mobile applications in general are applications runs on a mobile device such as smartphones which are designed to meet the requirements, either simplify or to increase flexibility, the daily activities of users. User interface (UI) refers to the system and users who connected to each other through instructions or techniques to operate the system, input data, and applying the contents. User interfaces start from systems such as computers, mobile devices, games, and more for programs applications and content usage [4].

User Experience (UX) refers to the whole experience which associated with perceptions (emotions and thoughts), reactions, and the response the users experienced and think through their direct or indirect usage of a system, product, content, or service [4]. UI/UX is an interface through which a

person be able to be connected with a system or application inside a computer environment and communication, which is classified into software interfaces and hardware interfaces [5]

2.2 Young Adult Motivation, Psychology and Lifestyle

Motivation is one of the prime movers of the heart to achieve or do something with a purpose. Motivation is also a purpose or desire to achieve success and avoid all failures in life. in general, motivation is a process to achieve a goal. Motivation are divided into two type, the first type is intrinsic, in example when the character of the task itself makes a person feel motivated, getting satisfaction by doing it without external stimulation such as status and money. And extrinsic motivation is the element outside the task that accompanies the task and makes the main factor for someone wanting to achieve it. Young adults have the urge to feel connected to others by create warm, close, and communicative relationships. The use of social networks is important for a young adult to require their individual and interpersonal needs. other than to expanding their network by meeting new people, this service can also find people who are in their network of friends they has built before. Young adulthood is a period of transition from adolescence to adulthood. This age is a period of self-development by establishing wider social relationships. This urgency is useful for exchanging information, sharing experiences, or collaborating on certain projects or plans [6], regarding the appearance the maturity, a person decides to develop their life through formal and non-formal education, work, and engages in social activities to establish the relationships.

2.3 Design Method

For the design development, the author using the Design Thinking Method, therefore the given rules by this method has the character of generating the new innovative and solutive ideas which are inflexible and rough standardized, therefore researchers are able to explore and have the ability to improving their creativity in producing creations or products that required the demands. The following below are the stages that have been traversed by Design Thinking (figure 1).

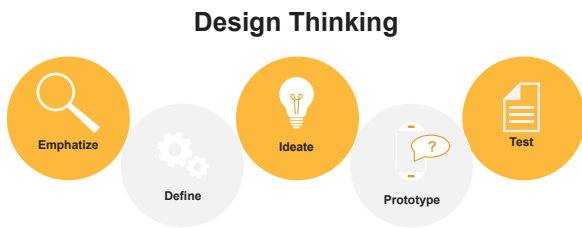


Figure 1. Design Thinking.

Empathized is the stage where the researcher make observations regarding a problem and sense the phenomenon itself. In discovering the subject requires observation, interviews and meeting with the experts, regarding who and what the researchers need to discover the needs of the research subject. Define at this stage the researcher begins to describe what kind of products are in match the needs required by the user for the product or application that will be made. Ideate in this process, researchers will select ideas that are approaching to the results from previous defined by performing brainstorming. Prototype is the stage of producing a product scale model or example of incomplete work to make a trial sample that required more sample test and then proceed to the next stage, specifically conduction trial to the user, at this trial stage the researcher must obtain bunch of input from the user to detect and capture the defect of the product that has been designed.

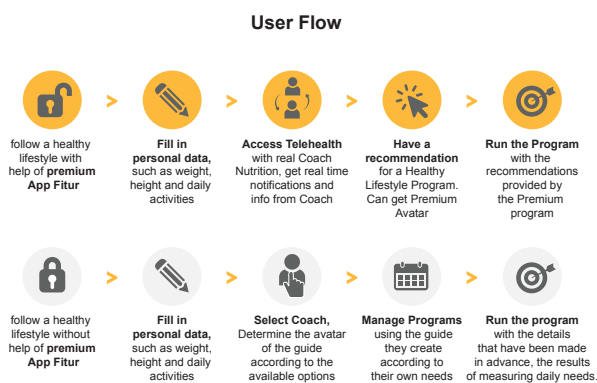


Figure 2. User Flow.

3. RESEARCH RESULT AND DISCUSSION

Using Design Thinking, the authors are trying to delineate it into the form of diagram or flowchart, to obtained the design results and overcome the main problems (figure 2).

And as a structured strategy in communication so that the application could be simply acknowledge in the community, the application has named "Dear

Dietary". It is a representative from the beginning of opening word when start writing a diary, a diary itself is a book where a person keeps a daily record of their occasion and experiences - everyday.

This represents how the application worked, where the users could write down, recording their various progress in running a healthy lifestyle program with balanced nutrition.

The fore purpose found in the logogram is the chat icon, where it represented that the application also functionate as a place to communicate as one of the main features of the application, that is Telehealth, and Community. Users can simply communicate about their daily activities, not only through the diaries they make for themselves but can be shared with others as encouragement and inspiration for others.

3.1 Empathize

In the stage of observing collecting comprehend the behavior of young adults today, by conducting interviews with nutrition experts, distributing questionnaires to 55 young adult correspondents who have previously has experienced with health-based applications. From the results of the data collecting, it were found there several main problems to be formulated and resolved, the first one of whom is still most sense by application users to remain consistent in using the application, since some user are still trapped with the old habit of giving up effortless whereas the application experience monotonous when using the application. For the nutritionists, the main hindrance is there are still many people who think they are smart by dealing with nutrition using a research from the internet or by searching at an influencer, famous figure, books about the nutrition content and undergo with the same pattern that they are suggesting, even though not all of the instructions can be implement out to other people effectively. Young adults still has not found the applications that are Indonesian trait based. Since all the health-based applications mostly come from overseas applications. Meanwhile, users expecting there will be an application that are more local and more exempt to follow the daily habits of Indonesian people in general. At the end the difficulty of urgency to visit a nutritionist or start a healthy life, due to lack of access to this information, or indolent and limited access to visit a nutritionist in the midst of this pandemic.

3.2 Define

In the define process, it could be focused on several main problems, is that there that there are still no personal informative applications for young adults who are Indonesian based whom able to facilitate access to find and live a healthy lifestyle with a balanced nutritional pattern. Therefore, the solution obtained is to create an application that is specifically designed for users to facilitate as needed in obtaining personal and local health information, the target user is determined to be aged 25-35 years. Several other factors that form the basis for strengthening and design deliberation is to establish the habits, consistency of young adults to be aware and know the benefits of living a healthy lifestyle as well as knowledge about health and habits to live a healthy life for now and in the future. Adults who find it difficult to process the information that much acquired from the internet to new habits while at home that make some routines change and force people to do everything from home and remotely.

3.3 Ideate

The purpose of this process is focusing on the main problems whose liable and specify the type of application which is more suitable with the results of the define process stage. In applying hook model as process to discovering and attract the users. The application is equipped with the main features of a healthy virtual guide, which provides information about new needs and habits that users will try when using the application. With this feature, anticipate the young adults will no longer be puzzle to start a healthy life. The main menu on the application design has three push buttons that are integrated into the next landing page.



Figure 3. Logo Breakdown.

The first are Profile and Diary, and Coach. The profile button contains Goal, current body condition, personal information such name, gender, weight, height as well as food items/recipes and selected option planning for living a healthy life program. And also have a social media sharing and help button. In The Diary menu contained daily calorie goals, needs or previews of body condition, activities, food and drink. On the Coach Button, several options will show up regarding weekly menu updates, to-do lists or sports challenges from users - assign result, and the rewards they receive. This Coach feature eventually have an avatar to select as a motivator to accompany undergo a healthy lifestyle program, on the coach page will have a premium access to receive service from nutrition expert which will monitoring the nutritional needs. This coach feature will appear in the form of a reminder notification as well.

3.4 Prototype

After going through the process in the empathize stage, conclusions should be drawn regarding to the user experience whom formulated by designing this application. Through the user flow chart, it possible to developed it into a wireframe for application design where it will be a diary feature as a record track progress who will recorded by the user as a reminder mode for a healthy lifestyle, plans made with the help of a virtual coach, also notifications on smartphones, for meal plans itself, it will have several features to search recipes, location finder to buy foods, and also be able to upload cooking food result. The coach feature has a beneficial feature as a motivator who come up with a reminder in the form of quotes, reminders, by selecting the standard features the user could adopt a coach with the chosen avatar, while in premium or paid features the user be able to choose an avatar from famous figures, but standard users can have trial for 10 days to experience the premium features, if the users interesting with premium feature the user be able to change access from standard to premium, if the user has no interest in continuing or change into premium feature the avatar will back into the standard feature, this coach feature is also integrated with social media, so the users be able to share on the social media, their current sport program will support by certain figures, and then the figures will be able to give the respond to encouraging the users so the user will more motivated.

Premium users be able to get a telehealth as an additional feature, as a direct two-way communication mode between users and nutritionists,

and the coach role in this application more optimal because the program created by taking the advice from experts for users who previously have been tested to earn the fit formula. The Community feature in this design is as a medium to share ideas, progress and knowledge for users with outsiders, it help to find encouragement and as an alternate communication which has been done directly so far but currently has to be done in strict way, with this community users can also communicate with friends. friends into groups and create challenges or programs together with other friends.

recommendation, on this page also connected to an online food ordering application which also has a standard calculated calorie, or a restaurant who sells healthy food, besides that, the user can simply put some of the food ingredients they have and then receive a guide reference recipes. users also be able to upload recipes or meal schedules they owned to share with the community. The Meal Plan premium feature has the opportunity to, the user's entire daily diet has been managed by a nutritionist, also has the opportunity to get more intense consultations.

Meal Plan, on this page the user will be able to find various food recipes, with calculated calories

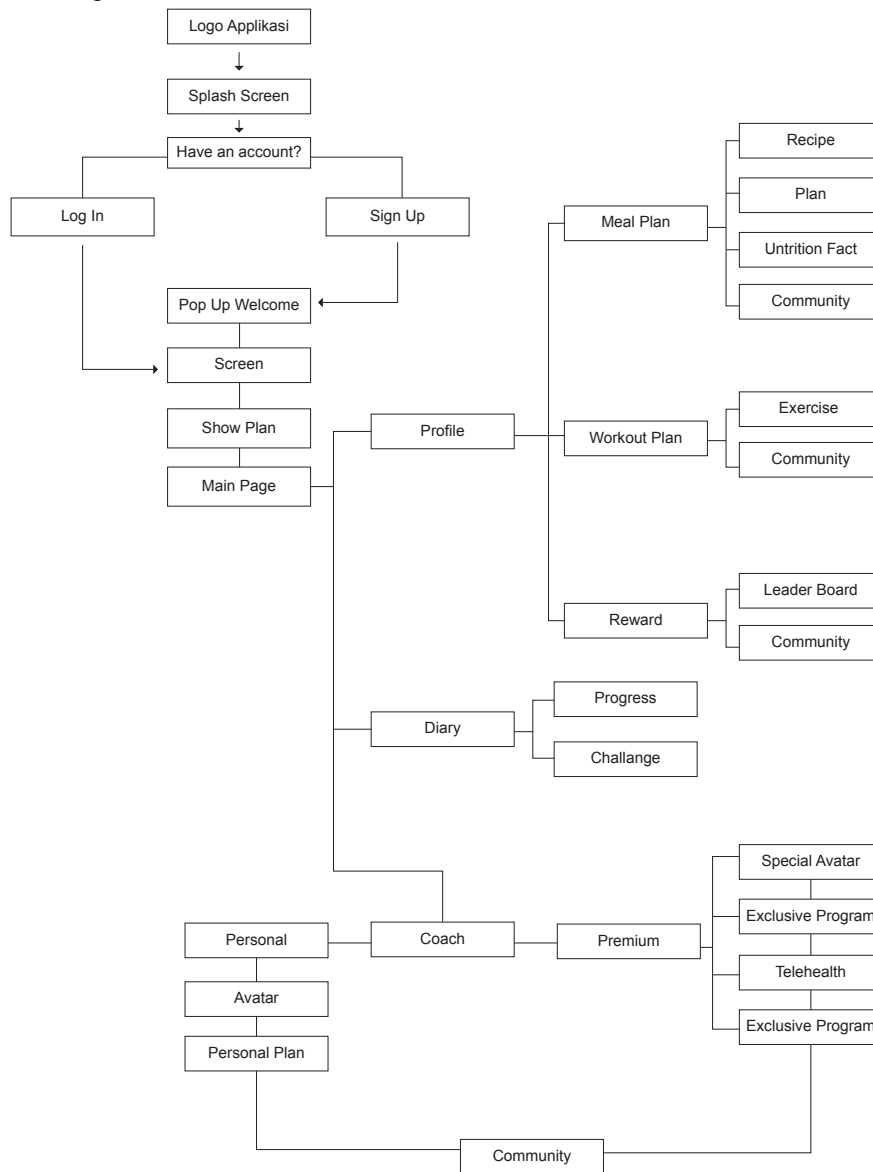


Figure 4. Flow Chart

Workout, giving the user the opportunity performs a sports activity accompanied by a coach with sports activity recommendation, afterward it will be able to integrated with YouTube or the sports tutorial session that already available, while for premium features, alongside with being accompanied by a coach, users have the opportunity to get exclusive classes directly from sports experts or personal trainers.

Community has a role as a complement media so that the users will interesting to try and using it, and performing various healthy lifestyles more passionate. On this page, users can share photos, updates or quotes to inspire the community, where the premium features users be able chatting with other users, not only giving notifications in the form of badges or congratulations icons when seeing progress.

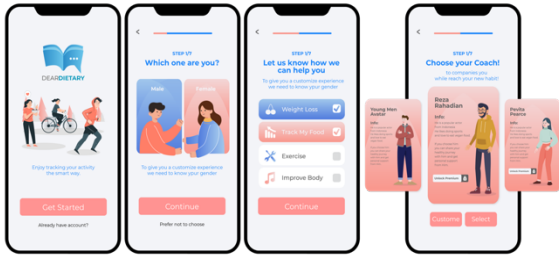


Figure 5. Sign up Interface.

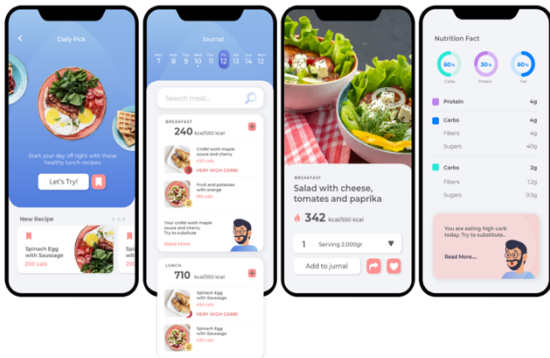


Figure 6. Meal Plan.



Figure 7. Activity and Community.

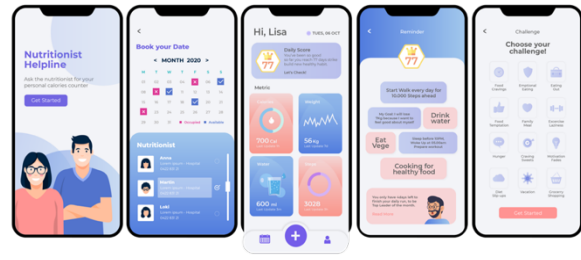


Figure 8. Telehealth and Feature Challenge.

3.5 Test

The trial stage is the last stage from the design thinking method, using digital prototyping and questionnaires to earned criticism and suggestions from potential users. The feedback later on become a benchmark in completing and improving the design. It will be tested on young adults aged around 25-35 year old. The results from the trials data will be processed to re-teased through the empathy stage to find new potentials to be applied into the application.

4. CONCLUSION

The design of this application has a purpose for the society, especially young adults in the midst of this pandemic condition, to be able creating new routines to build their a better lifestyle. by following a healthy lifestyle with balanced nutrition. This application has a role to become a tool which can be used as a two-way communication as a learning tools or as accompanies to do activities in the middle of a situation where everyone requires to taking care of themselves in their own home, with this application they be able to share and having a long distance communication which is connecting in one tools, also has the opportunity to communicate directly with nutrition experts with long distance based on telehealth which they can use the chat feature. The whole concept in this application is expected to open up opportunities for anyone, especially young adults to start a healthy life anytime and anywhere.

By practicing the habit using this application, has a purpose to form a new habits, culture, relationships between people and what they consume to their body, and assisting during and after the pandemic. Design Thinking method is a method with a long process with repetitions in cycles to achieve the suitable application. This application capable to continue to grow in the future and looking forward that application users will not only use this application during the pandemic but become essential utility in using the application to live a healthy lifestyle. The

post and share feature capable to trigger criticism and recommendation from application users, hoping it will continue to grow and improving. The utilizing of this comprehensive application will brings a great expectation to be applying as a health countermeasure to the health problems for young adults in the future.

This design capable to get connected to other various platforms/gadgets that support data needs for this application, start from tracking on body weight, sport exercises or sleep activities, and menstrual cycles for women. The current research is based on the design of applications for Android, the authors considering that in the future this application should be operating on various other platforms such as iOS.

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