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Design and Evaluation of User Interface Module for Psychological Services in a Mobile Application

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ABSTRACT

***Background**: Mental health among university students requires institutional support through accessible and user-friendly services. This study aimed to design and evaluate the user interface (UI) of a mobile application module that provides psychological services for students at the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada.*

***Methods:** The study comprised three phases: requirement analysis, UI design, and UI evaluation using the User Experience Questionnaire (UEQ). The requirement analysis was conducted through a literature review and observation. The evaluation phase involved 30 active students from undergraduate, postgraduate, and professional programs.*

***Results:** The measurement results using the UEQ showed average scores ranging from 0.98 to 1.58 across six dimensions. The aspects of attractiveness, efficiency, dependability, and stimulation were categorized as Good, while the aspects of perspicuity and novelty were categorized as Above Average.*

***Conclusions:** The designed UI demonstrated good usability and positive user experience. Further refinement is recommended to enhance novelty and perspicuity, ensuring continuous improvement of the application's interface and usability.*

***Keywords:** Mobile Application, Psychological Service, UEQ, User Interface*

ABSTRAK

***Latar belakang:** Kesehatan mental pada mahasiswa merupakan aspek penting yang memerlukan dukungan institusi melalui layanan yang mudah diakses dan ramah pengguna. Penelitian ini bertujuan untuk merancang dan mengevaluasi antarmuka pengguna (user interface/UI) dari modul aplikasi mobile yang menyediakan layanan psikologis bagi mahasiswa di Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan, Universitas Gadjah Mada.*

***Metode:** Penelitian ini terdiri dari tiga tahap, yaitu analisis kebutuhan, perancangan UI, dan evaluasi UI menggunakan instrumen User Experience Questionnaire (UEQ). Analisis kebutuhan dilakukan melalui tinjauan pustaka dan observasi. Tahap evaluasi melibatkan 30 mahasiswa aktif dari program sarjana, pascasarjana, dan profesi.*

***Hasil:** Evaluasi UI menggunakan instrumen UEQ (User Experience Questionnaire) yang terdiri atas 26 item pernyataan terhadap 6 aspek. Pada aspek attractiveness, effectiveness, dependability, dan stimulation menunjukkan kategori hasil Good sedangkan pada aspek perspicuity dan novelty menunjukkan kategori hasil Above Average.*

***Kesimpulan:** Antarmuka pengguna yang dirancang menunjukkan tingkat kegunaan dan pengalaman pengguna yang baik. Pengembangan lebih lanjut direkomendasikan untuk meningkatkan aspek kebaruan dan kejelasan, sehingga kualitas antarmuka dan kegunaan aplikasi dapat terus ditingkatkan.*

***Kata kunci:** Antarmuka Pengguna, Aplikasi Seluler, UEQ Layanan Psikologis*

INTRODUCTION

Mental health among students is becoming one of the pressing issues that needs to be prioritized in university life. Academic facilities within universities play a crucial role in supporting students' mental health.[1] Universitas Gadjah Mada (UGM), as an institution that pays special attention to the mental well-being of its students, continuously strives to enhance services and facilities that support students' mental health. One of the initiatives is through an extension provided by the Faculty of Medicine, Public Health, and Nursing (FMPHN), which houses Psychological Services.

The Psychological Services at FMPHN are relatively new but have been extensively utilized by students over the past five years. These services encompass various forms, including individual and group counseling, psychoeducational classes, and peer counseling, all available to students at all levels of education, from undergraduate to professional programs.

However, the registration process still faces several challenges, including decentralized data and cumbersome registration procedures through online forms or direct visits. Similarly, counseling scheduling management poses a challenge, with the potential imbalance between the number of registrants and available counselors.

Starting from the new academic year, UGM has initiated mental health screenings for students, although the results are not yet accessible to students directly, which could be an opportunity to promote mental health awareness. FMPHN, as one of the major faculties at UGM with numerous departments, still relies on online forms for service data collection, resulting in multiple separate links for each service. To address these various challenges, a more integrated system is needed to accommodate needs and streamline processes for service providers and recipients, such as a mobile application that can be easily accessed from anywhere and anytime. User interface is a part of a system that directly communicates with users, encompassing physical appearance, color usage, and animations.[2] A well-designed user interface has a significant positive impact on the performance and user satisfaction of an application.[3] Unappealing or confusing application interfaces can lead to user boredom, resulting in the failure of the developed application.[4] Consistency in user interface design is also crucial so that users can easily understand the application; consistency can stem from the use of fonts, colors, and icons in the application.[5] Mobile applications focusing on mental health should be designed clearly, based on scientific and valid information, and should stimulate learning.[6] The user interface that has been created needs to be evaluated to measure user experience when viewing the application interface.

METHODOLOGY

This research was conducted as a form of fulfillment of one of the courses. This research consists of 3 phases:

1. Phase 1: Requirement Analysis

The System Requirement Document (SRD) was developed based on a literature review and direct observation of the existing conditions within the Faculty of Medicine, Public Health, and Nursing (FMPHN) Universitas Gadjah Mada. The analysis focused on identifying gaps in the current psychological service system, including data management and registration processes. The SRD outlined both functional and non-functional requirements for the Psychological Services Module to ensure that the proposed design met user and institutional needs.

2. Phase 2: User Interface Creation

The UI design followed the official Visual Brand Guideline of FMPHN, ensuring consistency in color, layout, and visual identity with existing institutional applications. The design process emphasized usability and accessibility principles to support intuitive user navigation. The color palette consisted of FMPHN's standard colors; green, yellow, black, and white, representing institutional familiarity. The prototype was developed using Figma to visualize user interactions and screen transitions.

3. Phase 3: User Interface Evaluation

The evaluation phase utilized the User Experience Questionnaire (UEQ) instrument, which contains 26 items measuring six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The evaluation involved active students from undergraduate, postgraduate, and professional programs within FMPHN. Participants were selected based on their active enrollment status and experience using university digital systems.

Respondents assessed each item using a seven-point Likert scale ranging from -3 (very bad) to +3 (very good), which was converted to a 1–7 scale for analysis. Data were processed using the official UEQ Data Analysis Tool to generate mean values and compare them with benchmark datasets.

Additionally, the mental health screening module integrated the SRQ-20 (Self Reporting Questionnaire) instrument, as recommended by the World Health Organization [8], to categorize mental health levels into three group; green (normal), yellow (mild concern), and red (emergency and requires professional consultation).

RESULT

The result of this research represents in each its phases:

1. Phase 1: Requirement Analysis

The target users of this application are the academic community of FMPHN, especially students, psychologists in the Psychology Service, and faculty members as Academic Advisors (DPA) for each student. The System Requirement Document is created to identify the needs in the development and implementation of this application. The purpose of creating this document is for various stakeholders of FMPHN, such as administrators and the IT Internal Team of FMPHN, who will provide support and maintain the system.

The development scope of this project, as stated in the SRD, focuses on designing the user interface for the Psychology Service Module of the application, which has the potential to be implemented within FMPHN. The emphasis will be on the development of the Psychology Service Module with the aim of increasing students' self-awareness of their mental health. This includes providing mental health screenings with results and simple tips for mental health care, offering up-to-date information and daily quotes to promote mental health, and improving the efficiency of students in accessing psychology services.

This application is expected to operate on both iOS and Android systems on various types of devices with different screen sizes.

User classes in this application are divided into 4 classes:

a) Operator, to manage user data including students, psychologists, and faculty.
b) Psychologist as Admin, to update counselling schedules, post various information on the Psychology Service Module, and view detailed data filled by students.
c) Students, to perform mental health screening and choose counselling schedules.
d) Lecturer (Academic Advisor), to view counselling results of students summarily and see aggregate results of students' mental health screening, which are under their responsibility.

On this document also included features that need to be developed in the module:

a) Appointment Scheduling, this allows scheduling counseling sessions, showing available and booked time slots.
b) Mental Health Screening, this provides mental health screening with specific instruments and give triage results and simple tips for mental health care based on the screening results.
c) Counseling Appointment, this provides options for counseling registration based on mental health screening results indicating the need for professional intervention.
d) Information and Promotion, this provides up-to-date information on mental health and promotional content aimed at increasing students' self-awareness and mental well being.

2. Phase 2: User Interface Design

The user interface of this application is designed to reflect the identity familiar to FMPHN, especially in the use of colors following FMPHN's Visual Brand Guideline. The colors used in the development of the user interface are shown in Figure 1.

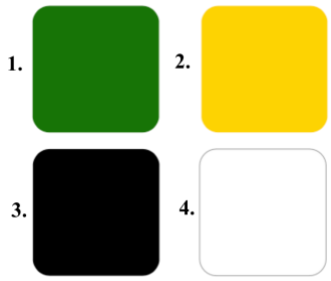


Figure 1. FMPHN Color Visual Brand Guideline

2.1 Color 1

Color Name : Green
HEX Code : #187407
CMYK Code : C089 M043 Y100 K007
RGB Code : R024 G116 B007

2.2 Color 2

Colour Name : Yellow
HEX Code : #FDD300
CMYK Code : C000 M018 Y100 K000
RGB Code : R253 G211 B000

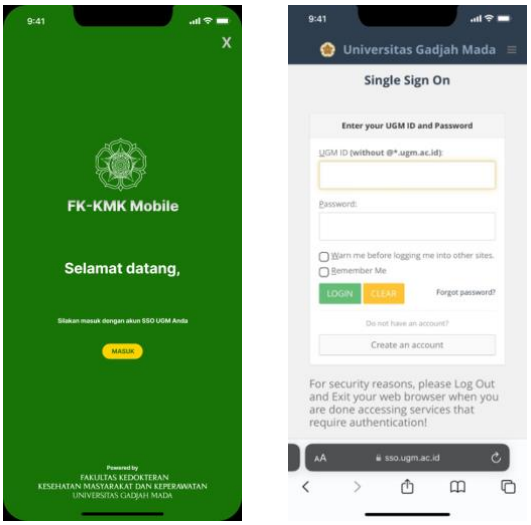
2.3 Color 3

Colour Name : Black
HEX Code : #000000
CMYK Code : C000 M00 Y000 K100
Code RGB : R000 G000 B000

2.4 Color 4

Colour Name : White
HEX Code : #FCFCFC
CMYK Code : C000 M000 Y000 K002
RGB Code : R252 G252 B252

The colors have been used in various print and online media owned by FMPHN, so the academic community of FMPHN is already familiar with these colors. As shown in Figure 2, the user interface creation begins right from the opening of the application, and users need to log in using the Single Sign-On (SSO) system.

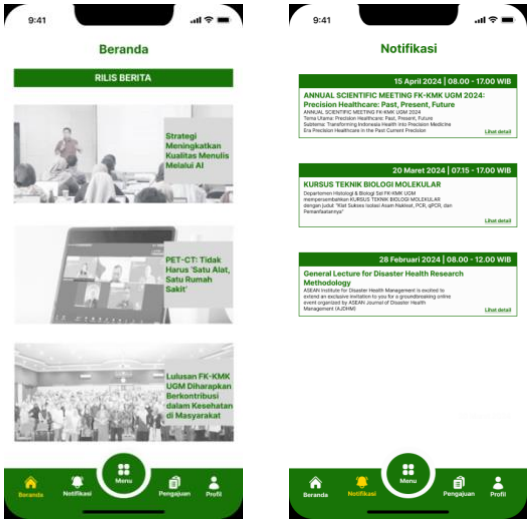


(a) **(b)**

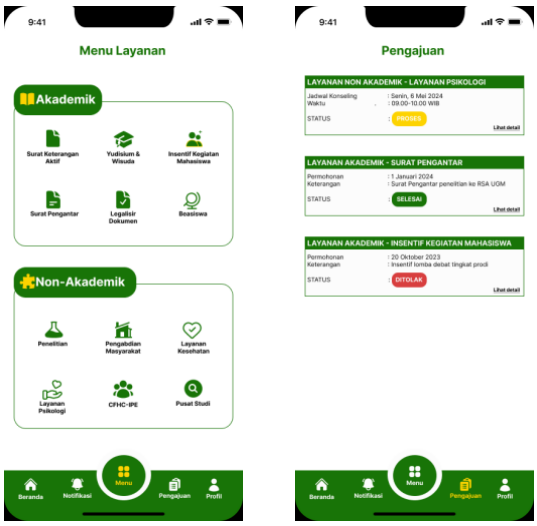
Figure 2. (a) Initial Screen, (b) SSO Login Screen

There are 5 main menus in this application (Figure 3): (a) Home, users can view the latest news from FMPHN, (b) Notifications, users can see reminders for upcoming events or activities, (c) Menu, users can access various service menus, both Academic Services and Non-Academic Services, (d) Requests, users can monitor service requests that are in progress or have been submitted, (e) Profile, users can view and edit their user profile such as the avatar used.

This research focuses on developing the user interface for the Psychology Service Module, which is located within one of the Non-Academic Service menus. In the Psychology Service Module, there are 5 available sub-menus (Figure 4).



(a) (b)



(c) (d)

(e)

Figure 3. Main Menu Interface of the Application

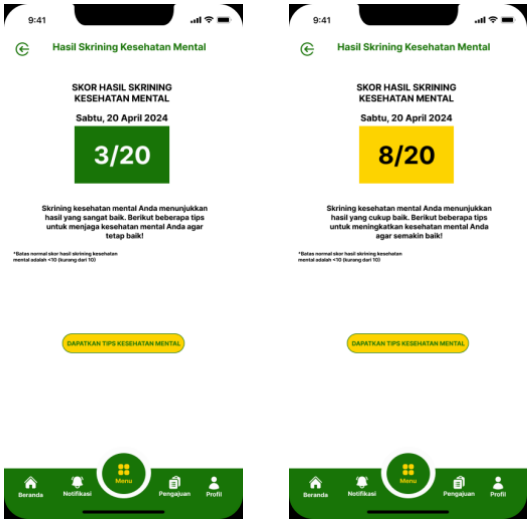
Figure 4. Psychology Service Menu Interface

Figure 5. Mental Health Tips Sub-Menu Interface

In the Psychology Service Menu, there are 5 sub-menus, each with its functions:

1. Sub-Menu "*Tips-tips Kesehatan Mental*" or Mental Health Tips (Figure 5), users can view and read various simple tips for maintaining mental health. Mental health tips are written using questions to make them more interactive for users.
2. Sub-Menu "*Skrining Kesehatan Mental*" or Mental Health Screening, users especially students can perform mental health screening anytime and anywhere. The screening questionnaire is based on the Self-Report Questionnaire (SRQ) instrument containing 20 questions recommended by the World Health Organization [8] (Figure 6). After the student completes the screening, triage results will appear based on the calculated scores. The triage results are divided into three colors (Figure 7); (a) Green, (b) Yellow, and (c) Red, each with descriptions and recommendations that students can choose form.

Figure 6. Mental Health Screening Questionnaire Interface



(a) **(b)**

(c)

Figure 7. Triage Result Interface

3. Sub-Menu "Hasil Skrining Kesehatan Mental" or Mental Health Screening Results (Figure 8), students can access all the results of their mental health screenings that have been previously conducted, allowing them to quickly view them as both the scores and triage results are visible in one interface.
4. Sub-Menu "Jadwalkan Konseling" or Schedule Counselling (Figure 9), students can view and select available counselling schedules. The displayed schedule on one interface shows the schedule for one week, but if students want to choose a different week, they can change the date range using the available filter.
5. Sub-Menu "*Informasi Kegiatan*" or Activity Information (Figure 10), the academic community of FMPHN can read all activities and events related to efforts to improve mental health for students conducted by the Psychological Service Unit of FMPHN.

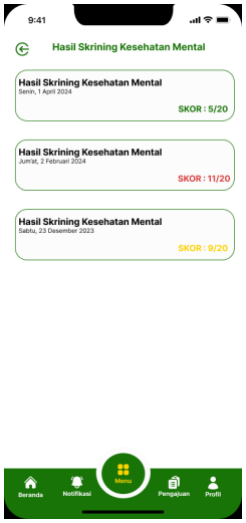


Figure 8. Mental Health Screening Results Interface

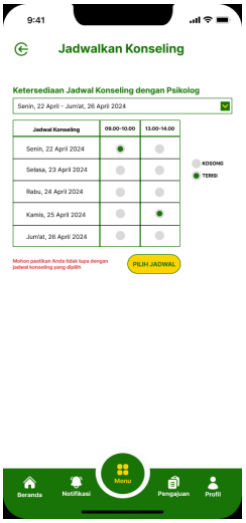


Figure 9. Schedule Counselling Interface

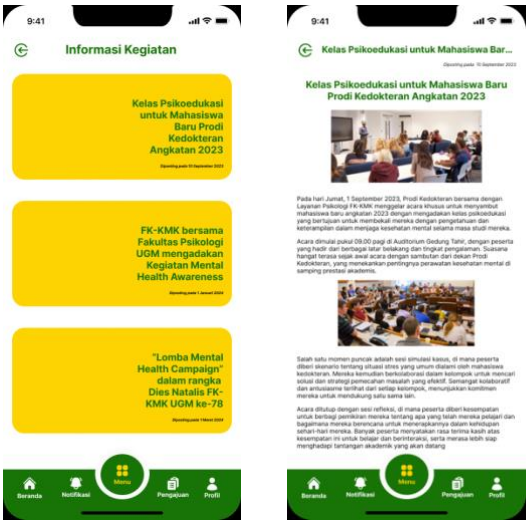


Figure 10. Activity Information Sub-Menu Interface

3. Phase 3: User Interface Evaluation

This evaluation was conducted by distributing the UEQ questionnaire containing 26 statements with a Likert scale filled out by 30 respondents who are active students at various levels in FMPHN, including undergraduate, postgraduate, and professional levels. The UEQ evaluation results are summarized in Table 1.

Table 1. Average UEQ Results

Aspect	Score
Attractiveness	1.54
Perspicuity	1.44
Efficiency	1.58
Dependability	1.50
Stimulation	1.43
Novelty	0.98

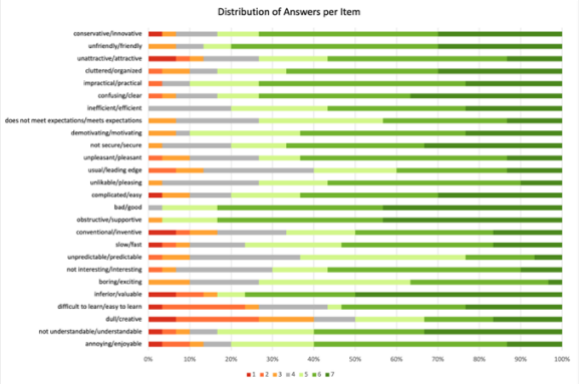


Figure 11. Distribution Answers for Each Item

Figure 11 presents the detailed distribution of scores for each UEQ item. The y-axis represents the mean value of each item on a scale from 1 to 7, while the x-axis represents the 26 statement items. Most responses were concentrated between scales 5 and 7, showing a predominantly positive perception of the application's UI.

The analysis results also provide a comparison between the data collected and the benchmark dataset, showing differences in evaluation result; as shown in Figure 12. The analysis compares the mean UEQ scores of the developed interface with the official UEQ benchmark dataset. The Psychological Services Module achieved scores within the 'Good' range for attractiveness, efficiency, dependability, and stimulation, and within 'Above Average' for perspicuity and novelty, demonstrating overall favorable user perception.

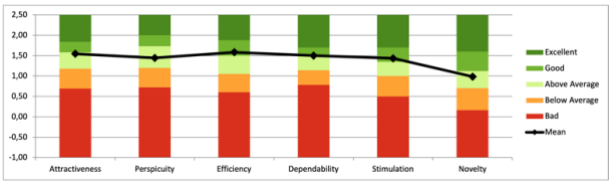


Figure 12. Benchmarking Comparison Graph

DISCUSSION

The evaluation results using the User Experience Questionnaire (UEQ) indicate that the developed user interface (UI) for the Psychological Services Module generally provides a positive experience for users. Most dimensions, including attractiveness, efficiency, dependability, and stimulation, were rated as 'Good', while perspicuity and novelty were rated as 'Above Average'.

The high scores in efficiency (1.58) and dependability (1.50) suggest that users found the interface easy to operate and reliable in its performance. This result can be attributed to the familiar layout design and consistent use of colors and icons, which followed the Visual Brand Guideline of the Faculty of Medicine, Public Health, and Nursing. Consistency in visual design enhances navigation and reduces cognitive load, enabling users to complete tasks more intuitively. This finding aligns with Galitz [3], who emphasized that design uniformity contributes significantly to usability and user satisfaction.

The dimension of attractiveness (1.54) also showed favorable results, indicating that the visual elements of the UI were aesthetically pleasing to users. The color scheme dominated by green and yellow was perceived as calm and representative of the institution's identity. Similar results were reported by Susilo et al.,[4] who found that institutional color integration can enhance user engagement by evoking familiarity and trust.

Meanwhile, the relatively lower score in novelty (0.98) reflects that users perceived the interface as functional yet conventional. This may result from the deliberate adherence to FMPHN's existing visual framework, which prioritized consistency over innovation. Although a familiar design ensures ease of use, it may limit users' sense of innovation or freshness in interaction. This finding is consistent with previous research, noted that mobile health applications emphasizing institutional conformity often sacrifice perceived creativity for stability and trust.[6]

The perspicuity dimension (1.44), rated Above Average, suggests that users generally found the system easy to understand and learn. The presence of clear menu labeling, icon usage, and structured flow contributed to this result. However, some users might still require guidance when first exploring multiple service features, such as screening and counseling scheduling. Future development could integrate tooltips or micro-guides to further improve learnability.

The stimulation score (1.43) indicates that the interface successfully maintained user motivation and engagement. This may be due to the positive visual feedback and accessible layout, which encouraged repeated use. This finding supports previous work [5] which highlighted that visually appealing interfaces contribute to emotional engagement in mobile applications.

Overall, the results demonstrate that the designed UI aligns with core usability principles while

maintaining institutional consistency. Nonetheless, further improvements should focus on enhancing novelty through more dynamic visual interactions and increasing user guidance for first-time users. Such refinements will contribute to a more balanced user experience between familiarity and innovation, ensuring that the system continues to meet both functional and psychological needs of students in the long term.

CONCLUSION

This study designed and evaluated a user interface (UI) for the Psychological Services Module to support student mental health at the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada. Evaluation using the User Experience Questionnaire (UEQ) showed positive results, with most dimensions rated as Good and some as Above Average. The findings indicate that the developed UI provides good usability and user experience. However, this study was limited to prototype testing with a small number of student participants and did not directly involve key stakeholders such as psychologists or system administrators in the assessment. Future research should engage stakeholders in participatory evaluation and include larger, more diverse samples to refine the design and enhance system implementation readiness.

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