Undergraduate Students' Mental Health Remote Monitoring System: End-User Usability Testing Study

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Abstract— Mental health issues such as stress, anxiety, and depression have been on the rise in recent times among different groups of people in evolving challenging societies and especially among university students. University life predisposes students to the first experience from home, discovering their identity, peer pressure, loneliness, financial worries, and pressures to succeed. These factors culminate in many students having several challenges, including physical, emotional, and mental. University communities have been much worried about students' mental health in recent times calling for collective efforts to support and help the most vulnerable students. One of the means to provide help and support is through technologies such as remote patient monitoring systems (RPMS) where patients can be monitored and assisted before their cases worsened. A remote mental health monitoring system (RMHMS) has been proposed in this study to enable lecturers, university administration as well as counsellors/therapists to track students' levels of stress, anxiety, and depression and swiftly take actions based on known symptoms of mental health. The system equally incorporates alert systems to students' friends or families and their caregivers to inform designated loved ones for support before getting worsened. A usability evaluation of the proposed RMHMS has been carried out to gauge the ease and challenges faced by the intended students, lecturers, university in-charge persons as well as a counsellor when trying out the system.

Keywords— Mental Health, eHealth, mHealth, Remote Patient Monitoring (RPMS), Remote Mental Health Monitoring Systems (RMHMS), University Students, Usability Testing.

I. INTRODUCTION

In recent times, more and more people are suffering from anxiety, severe stress, and depression. Mental health has become a pervasive issue especially in universities around the world. This has been further exacerbated by the ongoing COVID-19 pandemic that has isolated people. Depression is the major cause of severe mental health problems and may cause students' performance in academics, socialization, and self-care to deteriorate. One of the first symptoms of those suffering from depression among university students is that they may begin to stop going or attending their classes as well as meeting their classwork and assignments' deadlines. Several university students with severe depression have been shown to attempt suicide in recent times, according to the Anxiety and Depression Association of America [1].

University is a place where most adolescents are bound to experience a change phase in life, discovering their identity as well as experiencing several challenges including competition among peers, fear of failures, financial problems, as well as increased workloads. All these pressures might cause students to suffer from anxiety or stress or in some cases severe depression, which could lead them to isolate themselves from other people or to have poor academic performance or very low self-esteem as well as drop out from universities. This is quite a dangerous trend because if such students are not treated early, the chances for their situation to worsen or ultimately attempt suicide would be high. University administration and academics have been more worried in recent times due to rising rates of suicide attempts among students. Hence, calling for collective concerted efforts at detecting potentially vulnerable students before their cases worsened. This study is the usability evaluation of an attempt to provide a collaborative remote mental health monitoring system (RMHMS) to assist in this regard. The system has modules for monitoring students through efforts from the lecturers, university administration and counsellors. Remote patient monitoring systems (RPMS) has been utilised by clinicians and health care providers as one of the means to provide timely help and support for patients leaveraging on the possibility to observe a patient remotely, provide care and follow up on vital signs through technologies even though the patients are distant from the hospitals.

A. eHealth and Remote Patient Monitoring (RPM) Intervention for Mental Health

Technology usage in healthcare has been on the rise and is widely used nowadays. Remote patient monitoring (RPM) is a technology developed for healthcare different from using the traditional method but instead uses the newest development in information technology such as mobile technology, sensors, and the internet of things to monitor and provide care as well as obtain patients' data for further investigation and monitoring. Remote Patient Monitoring (RPM) enables clinicians to communicate with patients easily with the help of data obtained from using the technology. Additionally, RPM could also link clinicians to the patients' families or friends who are essential to bringing success to the patients' treatments [2]. RPM is linked to the patients' compatible monitoring devices such as smartphones wirelessly to document patients' health data such as tracking their activities or monitoring their blood pressure. RPM could then analyse the data obtained and provide real-time updates directed to the clinicians, families, or friends to be aware of their health conditions. RPM technology can be utilised to be able to detect symptoms or signs earlier, thus reducing the risk of aggravating the patients' conditions. This strategy has the potential to help in improving patients' health as it provides active interventions for them [3], [4]. e-health is an approach that combines the use of information or resources and communication technologies (ICT) in the healthcare area [5].

This current study is an attempt to evaluate the usability of the proposed RMHMS to gauge the pros and cons of using the system. The system development and initial study has been presented in [6]. The method for collecting data and evaluating the system usability comprises allowing the users, namely, university students, lecturers, university designated persons as well as a university counsellor to try out the RMHMS and provide an evaluation on the usability of the system. The difficulties encountered during the usability testing by the participants were monitored as well as time to figure out where icons were located and what to do next. Every attempt is then followed by a series of interviews with the users to redesign the prototype based on the users' comments and recommendations.

The next section describes the overview of the RMHMS, followed by the usability evaluation approach, which was followed by a discussion of the outcome of the usability testing. The final section concludes the study by highlighting the achievements of the study, some limitations observed as well proposal for future study and enhancement.

II. The Study

This study is aimed at providing an evaluation of the end-users experience of using the proposed RMHMS for University Students to be able to determine their levels of emotional states (stress, anxiety, and depression). The system is designed for the students to first answer the Depression, Anxiety and Stress Scale (DASS-21) scale [7] implemented in the remote health monitoring system (for University Students) at the start of their programmes, as well as at critical points during the semesters and through the course of their study until graduation. The instrument used for students to determine their level of stress, anxiety, and depression is DASS-21 assessment. This is necessary to recognize the students that might need special attention early on in their studies as well as during critical times of the study such as towards the end of the semester, exam period, results' release period, during vacation, and when they arrive from home. The results of the assessments are utilised to determine the mental states of the students. Furthermore, other modules such as the lecturer's module allows lecturers to provide a referral to the university student division/affairs in a situation where they notice an anomaly in the participation of their students such as poor attendance and failure to turn in assignments. Often, the very first signs of mental health issues include withdrawal from class activities, and unclear reasons for disagreement with teammates at the slightest provocations. The RMHMS equally provide the users (university students) the opportunity to check their mental health at different intervals by assessing the RMHMS. Abnormal cases are flagged immediately for the attention of the university student division and counselling units. The university student affairs division in-charge persons or faculty's administration are then able to monitor those students who have a high level of stress, anxiety, or depression. This could be due to the flag from the DASS-21 assessments, or referral from lecturers or student's self-report. They can then reach out to the student, invite for a meeting session or refer to the counsellor or a therapist as required. The RMHMS allows them to be able to send messages, recommend appropriate interventions or provide feedback to the suspected students. In the event that the students do not respond to the invitation, further actions are expected to be taken. If required and found to be useful, an automated message can be sent to their designated family members, friends, or peers to alert them about the students' conditions. A brief overview of the RMHMS system is provided in the next subsections.

A. Login page of RMHMS system

The user's first point of access to the RMHMS system is the homepage or Login page where all the categories of the system users are expected to login into the system. This is developed for the 4 main users, namely; the university students, lecturers, deputy dean of student affairs, and counsellor/therapists. Each user is directed to a different user dashboard on a successful login. The information required on the login page includes the student ID number or the staff ID number, and their respective passwords.

Fig. 1. Login page of RHM system

B. University Student's Module

Students' main home interface consists of profile, view attendance, assignment submission, DASS 21 assessment, observing their results, notifications for meeting with student affairs or counsellor/therapist, and sign in and out options. In the profile, a user can edit his personal information, attempt the DASS-21 examination assessment to determine the student's degree of stress, anxiety, and depression.

Fig. 2. University Student's Main Home Interface

Students are able to receive feedback or messages as needed, check notifications for meetings, follow up on their appointment thereby allowing them to keep track of their health. The assignment submission section summarises some due assignments, to assist students to keep track of their deadlines.

C. Lecturer's Module

Lecturers need to know how their students are performing and progressing, as well as watch out for symptoms that may call for concern. The lecturers' main duty is to refer to the student affairs' person's in charge if they notice any form of anomaly symptoms about their students' progress. The assignment section summarises each of the students' progress, thereby making it easier for the lecturers to track their students' missing tasks. Upon referral by the lecturers to the students' affairs, it is expected that the student affairs should reach out to the student, and schedule a meeting session to review their situation.

Fig. 3. Lecturer's Main Home Interface

D. University Person-in-Charge

University's student affairs division person-in-charge is responsible for the affairs and wellbeing of their students, hence, the central point for this RMHMS system. Taking actions can be initiated in three ways. Firstly, when RMHMS system triggers potential requests as a result of their DASS-21 assessment. The second situation is when there is a referral from a lecturer while the third could be a result of a self-report by the student..

Fig. 4. Deputy Dean's Main Home Interface

The first action expected from the student affairs is to reach out to the student, examine their situation and propose appropriate intervention. The person in charge can arrange an appointment with the student to have a first-hand assessment of the student's situation. Often, a student's

need maybe met by a mere meeting, a piece of advice, or some form of welfare support. Subsequently, they can refer the student to the counsellor as they deem necessary. The counsellor can submit their feedback or report using the system to inform the person in charge about the current condition of the referred students to keep track of their mental state

E. Counsellor's Module

When a counsellor receives a referral, they are supposed to immediately review the student's case, invite for an appointment and provide feedback and insights to the student affairs person in charge for a follow-up and further actions. The counsellor/therapist dashboard includes appointments with students, notifications of referral from the student affairs person-in-charge, and signed out.

Fig. 5. Counsellor's Main Home Interface

III. Methods for Usability Evaluation

This section focuses on the evaluation carried out with all the users, namely; students, lecturers, student affairs person-in-charge (deputy dean), and counsellors using usability testing technique [8], [9]. Each of the users was given several tasks classified into two broad categories, namely; main tasks and subtasks, to be completed after attempting the RMHMS system. The time to finish each task as well as the difficulty encountered in the process were recorded for the main tasks while for the subtasks, they were considered successful when the users succeed in completing them.

A. Participants

10 students, 2 lecturers, and 1 counsellor participated in this evaluation. These users are chosen on the UNIMAS campus. Each of the users (students, lecturers, deputy dean, and counsellors) was given several tasks (main tasks and subtasks) to be completed using the mobile application.

1) Students' Evaluation

The main tasks that were evaluated from the student module include the duration to find and take the DASS 21 assessment, the duration to check notification from the Deputy Dean and to provide a response, the duration to check his/her attendance, and submission of assignment. While the subtasks include Sign in, Sign out, Checking, and updating his/her profile.

Table I.
Main Tasks and Sub Tasks for Each of the Users

Users	Main Tasks	Sub Tasks
University Students	The duration to find and take the DASS 21 assessment. The duration to check notification from Deputy Dean and give a response. The duration to check his/her attendance and submission of assignment.	Sign in Sign out Check his/her profile
Lecturers	The duration to check the students' details in Student's Performance. The duration to report a student to the Deputy Dean. The duration to check notifications from Deputy Dean.	Sign in Sign out Check notifications
Counsellor	The duration to check notification from Deputy Dean and view the student's details. The duration to make a schedule with the student.	Sign in Sign out

Table II.
Time taken to complete the main tasks for University Students Users

	The duration to find and take DASS 21 assessment	The duration to check notification from Deputy Dean and give a response.	The duration to check his/her attendance and submission of assignment.
Student A	1 minute 2 seconds	40 seconds	55seconds
Student B	1 minute 20 seconds	45 seconds	56 seconds
Student C	55 seconds	35 seconds	50 seconds
Student D	1 minute 15 seconds	54 seconds	1 minute 3 seconds
Student E	1 minute 16 seconds	43 seconds	43 seconds
Student F	1 minute 35 seconds	41 seconds	51 seconds
Student G	56 seconds	35 seconds	1 minute 1 second
Student H	1 minute 13 seconds	40 seconds	40 seconds
Student I	1 minute 17 seconds	44 seconds	57 seconds

Student J	1 minute	55 seconds	52 seconds

From table II, the highest time to complete DASS 21 assessment is 1 minute 36 seconds. Two of the students completed it before one minute. The average time needed to perform the task is about 1 minute 10 seconds. Checking notifications from the university person-in-charge has an average time of 43 seconds. The average duration for checking attendance and assignment is around 52 seconds.

Table III presents information about completing the sub-tasks for university students. The first page is the login page. Our goal for this evaluation is to notice if the user can log in to the system successfully or not. Among the 10 students, 2 of them could not see the drop-down box to choose their status. We think this happened because this is a first-time experience. But if the drop-down box can be made bigger, it is hoped that any new user can notice it easily. But all of them can successfully sign in to the system using their IDs and password.

Two lecturers participated in the usability test of the RMHMS as presented in Table IV. One of them took 1 minute 12 seconds and another took 1 minute 30 seconds to check the student's details. But the duration to report to the deputy dean took approximately 2 minutes. However, one of the lecturers took more than 2 minutes as he was confused when using the report menu. This is because from seeing the menu he is not clear what its function was, that is, whether to report a student's situation or view a summary. The duration to check notification from the deputy dean was quite fast. They took 54 seconds on average.

TABLE III.
EVALUATION IN COMPLETING THE SUB TASKS FOR UNIVERSITY STUDENT USERS

	Sign In	**Sign Out**	**Check his/ her profile**
Student A	Successful but did not notice the drop-down box to choose his status at first.	Successful	Successful
Student B	Successful	Successful	Successful
Student C	Successful	Successful	Successful
Student D	Successful	Successful	Successful
Student E	Successful	Successful	Successful
Student F	Successful but did not notice the drop-down box to choose his status at first.	Successful	Successful
Student G	Successful	Successful	Successful
Student H	Successful	Successful	Successful
Student I	Successful	Successful	Successful
Student J	Successful	Successful	Successful

2) *Lecturer's Evaluation Results*

2 lecturers participated in evaluating this mobile application. The main tasks and subtasks include the duration to check the students' details in Student's Performance, the duration to report a student to the Deputy Dean, the duration to check notification from Deputy Dean. The subtasks are Sign in, Sign out, and Check notification. Table V presents their experience when logging in into the system. One of the lecturers was confused about the drop-down box like students. But all of them log into the system successfully. Signing out and checking notifications were also working nicely.

TABLE IV.
TIME TAKEN TO COMPLETE THE MAIN TASKS FOR LECTURER USERS

	The duration to check the students' details in Student's Performance.	**The duration to report a student to the Deputy Dean.**	**The duration to check notifications from Deputy Dean.**
Lecturer A	1 minute 12 seconds	2 minutes	50 seconds
Lecturer B	1 minute 30 seconds	Took more than 2 minutes as she was confused by the 'Report' menu.	59 seconds

TABLE V.
EVALUATION IN COMPLETING THE SUB-TASKS FOR LECTURER USERS

	Sign In	**Sign Out**	**Check notifications**
Lecturer A	Successful	Successful	Successful
Lecturer B	Successful but he did not choose his status from the drop-down box which took a longer time for him to sign in.	Successful	Successful

3) Counsellor's Evaluation Results

1 counsellor participated in this evaluation. There were 2 main tasks and 2 subtasks given. The main tasks given to the counsellor to evaluate include the duration to check notifications from the deputy dean, view the student's details, and the duration to make a schedule with the student. While the subtasks are Sign-in and Sign-out.

TABLE VI.
TIME TAKEN TO COMPLETE THE MAIN TASKS FOR COUNSELLOR USERS

	The duration to check notification from Deputy Dean and view the student's details.	**The duration to make a schedule with the student.**
Counsellor A	Took longer than 2 minutes due to some confusion.	Failed to complete the task as confusion arise when she clicked on the 'Report' menu.

TABLE VII.
EVALUATION IN COMPLETING THE SUB-TASKS FOR COUNSELLOR USERS

	Sign In	**Sign Out**
Counsellor A	Successful	Successful but kept looking for the sign-out button at the bottom of a page.

Tables VI & VII present the performance of the testing for the counsellor. Unfortunately, the Counselor became confused in both tasks. He took more than 2 minutes to check the notification from the main authority of a university. And he failed to understand how to make a schedule with a student due to the 'report' menu. For the subtasks, the Counselor took time to find the sign out button placed down after the other icons. But he managed to log out from the system successfully.

G. Feedback Evaluation:

All participants were met after testing the RMHMS. The criticism from the undergraduate students was understandable. This assisted in improving the system. One of the lecturers equally suggested providing a menu bar on each page. Thus, any client can move between different pages without any problem. This will save them time. Another student suggested that a side menu like Twitter should be provided to show the bars together. Some of the students recommended adjusting the drop-down list box, arguing that it is smarter to make it greater. Some of the students' perspectives include providing a menu to find the arrangement of the different links. The students likewise need the adaptability to alter their profile picture and any kind of data in their profiles. Overall, all the students commended the RMHMS for its usefulness, being easy to use, convenient as well as easy to understand.

TABLE VIII.
INTERVIEW SESSION FEEDBACK FROM UNIVERSITY STUDENTS USERS AFTER THE EVALUATION SESSION

	Feedback gained during the interview session
Student A	Provide menus on the bottom of the page for easy access instead of needing to go back to the homepage to access one menu. Make the drop-down list for 'choose one' on the sign-in page bigger so that it captures the attention of other users.
Student B	Have a side menu just like Twitter's whereby there is an icon on top left or right and once clicked, a list of menus will be shown. Everything is understandable.
Student C	This student stated that everything is good with the system as it can provide help to students with mental health issues. All the menus and icons are easy to understand and use. Menus on the bottom of every page will be easy and good for every user.
Student D	Everything is good and understandable. This system will be a big help for the students.
Student E	Have side menus or bottom menus to ease the users' usage so that they do not have to go back to the homepage every time they need to select a menu. This system might be able to assist the students.
Student F	Needs a menu to list down all the appointments set. Change the size of the drop-down list box to a bigger size.
Student G	Provide a menu where student can also track down all their appointments which have been set. This system can be a helpful system to assist the students in dealing with their mental health issues.
Student H	Prefers to have menus on the top of the page for easy usage
Student I	Hopes that the profile picture can be updated or changed, not using the icon.

	Icons and menus are understandable.
Student J	The system is would be very helpful for the students.

The inputs from participants are quite warm and pleasant. In the meeting, they truly liked the RMHMS system. One of the lecturers suggested textual styles of every menu's title greater in measure and provide menus on the lower part of the page to make it easier to comprehend the App. The other lecturer thought that it is hard to comprehend the usefulness of the 'report' bar that it may make more sense to change the name to a more context descriptive name. The remaining parts of the system were easy to use in his view.

TABLE IX.
FEEDBACK FROM LECTURERS

	Feedback gained during the interview session
Lecturer A	Lecturer A said that this system seems challenging to be understood at first. However, becomes easier to use after initial familiarity. He suggested making the fonts for each menu's title bigger. He urged to provide menus on the bottom of every page that will be easy and good for every user.
Lecturer B	Remarked about the ambiguous title of 'Report' as he thought this menu was meant to report directly. Suggested changing the name of the menu is advisable to avoid confusion. Other icons are all understandable. He agreed that the system will be very helpful for the students.

Table X provides the reviews from the Counsellor. He proposed seeking consent from the students before sending the outcome or report from the system to any other users such as the person in charge or the lecturers. He equally suggested tidying up the interface to avoid time-wasting. He argued that the 'view' button ought to be situated in a more essential area to get the client's consideration, or a straightforward message clarifying what the purpose of the 'view' button is ought to be given. He felt that the student should know by seeing the consequence of DASS-21 they ought not to be a concern. The name 'report' does not completely convey the purpose and intended actions required. The system doesn't show any logo on the page that the client previously signed in. Hence, it may be confounding. In any case, the general experience was superb for the advocate.

TABLE X.
FEEDBACK FROM THE COUNSELLOR

	Feedback gained during the interview session
Counsellor A	1. *The 'view' button should be placed in a more strategic place to grab the user's attention or provide a* small message on what is the 'view' button to avoid confusion and time-wasting. 2. Provide a consent form for the students before taking the DASS 21 assessment because it is a very sensitive issue as well as to request consent to allow lecturers, deputy dean, and counsellors to view their results. 3. Students should also be informed that DASS 21 results s do not necessarily confirm their mental status until they meet the professional to announce their health. 4. The name 'report' did not seem to match its actual function. It confuses users. The name should be changed for better and easy understanding. 5. A thorough explanation about the system should be displayed once they have signed in to the system so that the users know and understand the system better. 6. Overall, the system will be very helpful.

IV. DISCUSSION

This section provides all the information and feedback gained from the usability testing by the different users. The time taken to complete the main tasks as well as whether the subtasks were successfully completed are recorded. Besides, recommendations or feedback gained from the interview sessions are also discussed in this section.

Most students do not have a problem using the system. They were able to perform the given tasks on the system with ease and had an overall good experience and understanding of using the system. However, there was some feedback from the students which was helpful to better improve the system for all the users. Most of them requested to have either side menus or bottom menus for easy access instead of going back to the homepage to access the menus whenever they want. Some students

wished to have the drop-down list box at the sign-in page to be bigger because during the evaluation they did not realise the existence of the drop-down list box which resulted in delay or error in carrying out the tasks. Providing a menu for tracking or listing all the appointments set by the lecturers, deputy dean and counsellor is also one of the feedback given by the students. This will allow the users to know and be reminded of their appointments. Overall, the students think that this system would help assist in managing their mental health issues with the help or guidance from the deputy dean and counsellors.

Moreover, the lecturers experienced some difficulty to understand and use the system. They also took a long time to complete the main tasks given compared to others. It may be because it is their first-time exposure to the system or the tasks were more tasking as well as the puzzling names of some of the menus. Most importantly, the menu, 'report' which refers to a list of student's reports such as attendance, submission of assignments, and DASS 21 assessment that have been sent to the deputy dean was confused to mean a page to directly report a student to the deputy dean. The lecturers requested to change the name of 'Report' to another different name that fits the function of the menu to avoid giving confusion to the users.

Last but not least, the counsellor too encountered similar issues like the lecturers and deputy dean regarding the 'view' button and also the 'report' menu. The Counsellor requested that the name 'report' be changed as well. He explained that a consent letter should be provided for students when they are about to take the DASS-21 assessment because it is a very sensitive issue as well as a consent to allow lecturers, deputy dean, and counsellors to view their results. If the students wish to continue taking the DASS-21 assessment and agree to all the conditions, they will then be allowed to do so. If they disagree, the students will not be allowed to answer the DASS-21 assessment. Meanwhile, the counsellor suggested that a thorough explanation be shown once the students sign in to the system so that they can understand better how the system works.

Overall, the majority of the users (students) do not have a problem using the system while the lecturers, the deputy dean, and the counsellors have slight difficulty in using it. Some of the issues identified for improvement of this system is to provide easy navigation back to the homepage to access other menus, the 'view' button, the 'report' menu, 're-repost' menu, the size of the drop-down list box, and the flow of the system. These recommendations and issues are presented in Tables X and XI.

TABLE XI.
RECOMMENDATION FOR IMPROVEMENTS ON INTERFACE DESIGN

Scope	Recommendation
Side, upper, or bottom menu	1. Instead of going back to the homepage just to click on another menu, a side, upper or bottom menu could be implemented in the system to allow users to easily use it. A floating menu could also be a good design.
Better interface	2. A more interactive design could be designed to make the system more attractive instead of the classic and plain system which users might find boring.
Games implementation	3. Games that can help with dealing with emotional states (anxiety, stress, and depression) could be implemented in the system as well for students to play.

TABLE XII.
LIMITATIONS

Scope	Limitation
Side menu or bottom meu	Users are required to go back to the homepage if they wish to click on another menu. Side menu, bottom menu, or upper menu are not available for users' easy access.
Schedule list for students	Students do not have a list to check their schedules with the deputy dean or the counsellors. They might forget their schedules if no list is presented.
Drop-down list	The drop-down list on the Sign-In page is too small for some users. Some users do not realize the existence of the drop-down list.
Ambiguous menu title	The menu title for 'Report' is very ambiguous to the users.

V. CONCLUSION

Finally, it may be concluded that this remote health monitoring system indeed can help in assisting students in managing their mental health issues and allowing the faculty's administrative to support them, thereby, prompt interventions can be provided to the students to avoid unwanted situations or problems.

This section concludes all the work for this remote health monitoring system usability study as well as provides some recommendations for future work judging from the limitations.

A. System Achievement

This system has achieved its objectives of determining the students' level of stress, anxiety, and depression, thus enabling the faculty's lecturers, the deputy dean, and the

counsellors to more efficiently monitor the mental health of the students to provide early intervention. Scheduling a time with students who might have the chance of developing major mental health issues can be done easily by the faculty's deputy dean and the counsellors. They can also send feedback or messages to the students and likewise, the students can send responses to them as well. This system helps to facilitate efficient and fast interventions for students with all the available functions in the system.

B. Future work

The remote health monitoring needs some improvement for better user experience and usability. An improved system could be developed in the future to assist the students and allow faculty administrators to use it more efficiently and effectively. This can be achieved by addressing the feedback received from the participants during the usability testing.

Finally, this remote health monitoring system indeed can help in assisting students in managing their mental health issues and providing the faculty's administrative a means to support and help students in combating mental health issues. Consequently, early interventions can be provided to the students to avoid unwanted situations or problems.

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