

PTSNiCARE: Development of a User-Centered Digital Tool for Enhancing Mental Health Services

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Abstract:

PTSNiCARE: Development of a User-Centered Digital Tool for Enhancing Mental Health Services is a digital system designed to serve PTSN students and mitigate mental health problems. With more mental health cases being reported, the app's goal is to provide support services that are faster, easier, and more accessible to anyone. It aims to make referral processes more efficient, to facilitate better communication between students, Academic Advisors (PA), and psychological officers, and to promote awareness of mental health. The app includes services ranging from session booking, real-time notifications, live chat, mental health resources and self-assessment tools. It immediately notifies psychological officers when a new referral is received, allowing them to respond promptly. Students can self-assess their mental health, schedule time on a low-tech calendar to chat and can communicate securely with officers. PAs can file cases along with documents and officers can track the status seamlessly through the referral system. In the end, the PTSNiCARE system gets students help faster, facilitates communication, and helps to build a more caring and responsive environment.

Keywords: Mental Health, Digital Innovation, Psychological Support, Student Wellbeing

Introduction

Psychological disorders are increasing in higher education students due to the pressure of competition in academics, problems associated with social relationships and issues challenges in daily life (Alamri et al., 2023). Though awareness is increasing, many students continue to shy away from seeking support because of stigma, a lack of awareness or unclear support systems. Consequently, many mental health problems remain undiagnosed or untreated, resulting in poor school performance, isolation, or even self-injury. A digital solution can aid by streamlining referrals to mental health professionals, helping to facilitate communications and giving students access to self-help tools. Research (Colizzi et al., 2020) demonstrates that earlier detection and treatment result in better prognoses. However, many schools still lack a centralized mental health platform, making it harder for students to get support. Without self-assessment tools or educational resources, students may not recognize when they need help.

To fix this, schools need modern technology that simplifies the referral process, connects students with professionals, and offers mental health education and resources. Digital innovation can help schools build a faster, more supportive system for student well-being. The design of PTSNiCARE has several constraints that aim to improve student mental health support. First, the system aims to provide an intelligent mental health system for students to speed up the referring process toward students needing psychological help. Second, the PTSNiCARE system aims to improve communication between students, PA and psychological officers through a digital platform. Third, to raise mental health awareness with self-assessment tools and educational resources. Finally, the system allows psychological officers to get notified in real-time and have access to case specific documents support for psychological officers in managing the cases.

Research Methodology

The development and implementation of PTSNiCARE followed a user-centered design and technological integration. The development phase focused on translating the system architecture into a functional web-based platform. The system architecture evolved into a fully operational web-based platform. The core features were integrated in a methodical manner to ensure both stability and effectiveness. A calendar-based booking system was created, enabling students to arrange appointments with available psychological officers. To facilitate real-time support, this project implemented a secure live chat feature that uses encryption for safety. Self-assessment tools were introduced as well, consisting of standardized mental health questionnaires that provide users with immediate feedback on their mental wellness. An educational resource section was established, featuring a digital library filled with articles, videos, and wellness tips aimed at enhancing understanding of mental health issues. We also designed a referral system that allows Peer Advisors (PAs) to upload documents and directly refer students to psychological officers. Furthermore, an automated notification system was incorporated to keep all relevant parties informed about significant activities such as new referrals and upcoming appointments.

Following development, a pilot version of PTSNiCARE was launched in collaboration with Politeknik Tun Syed Nasir and Politeknik Sultan Azlan Shah. The system was introduced to a select group consisting of 22 Pembimbing Rakan Siswa (PRS), four psychological officers, and a sample group of students. A briefing and hands-on training session were conducted to familiarize participants with the platform. Real-time use cases were simulated to test the booking, referral, and communication processes. Data from the pilot phase was logged to observe system performance, user behavior, and interaction outcomes.

Analysis and Discussion

PTSNiCARE is an intelligent digital tool offering mental health services to students. It enables the students to have better communications, better access to their personal advisor (PA) and psychological officer for support, resources for mental issues. The system is designed for ease of use, privacy and rapid support.

1. Session Book in: Booking sessions with psychological consultants is simple in a calendar. This shortens the wait, and the access is better. Officers post when they are available and students sign up for a slot. Those fact checks are delivered instantaneously, so that officers are able to respond immediately and zero in on cases that are urgent. Students also receive reminders for their appointments.
2. Live Chat: Securely chat online in real time with students and psychological officers. That assists students who are uncomfortable about asking for help in-person. Chat is confidential and encrypted and offers you the freedom of anonymous support.
3. Self-Screen: Students can self-screen their mental health through commonly recognized tools. The system gives feedback and suggests whether more help is needed. This helps to catch problems early.
4. Educational resources: A knowledge library includes articles, videos and tips about stress, coping and mindfulness. It promotes awareness of students' mental health and wellness.
5. Referral links: For PAs to refer cases directly to psychological officers, including notes/academic records. Officers can update case status, monitor ongoing progress, and leave follow up notes in a more efficient process.
6. Data Gathering: The software may gather data to analyse trends in student mental health. This serves to help institutions enhance support services, inform policy, and more efficiently distribute resources.

Technically, PTSNiCARE is a proof of concept that has successfully been used to showcase how a digital platform can contribute to strengthening existing mental health support in the educational sector. The structure of the system is strong, security-wise, involving secure live chat, calendar schedule appointment bases, self-assessment modules and notifications in real time. All these parts are united in order to improve the user experience as well as to send timely alerts and case documentation to psychologists that will contribute to faster and better organized interventions. The back-end system enables data harvesting for analytics, that will make it possible to monitor mental health trends over time and inform decision-making enterprise level.

There are clear advantages to the introduction of PTSNiCARE for students, staff, and universities. For students, the system provides an unobtrusive means to tap into mental health support, which can reduce the stigma around seeking help and make seeking help more likely. For staff, notably personal advisors (PAs) and psychological officers, this reduces administration and aids case management. For schools, PTSNiCARE allows profile raising by demonstrating support for their students' mental well-being and also compliance with the national education policy. It is also helpful for mental health programs and interventions at a broader level in that it provides useful information for enhancing mental health strategy.

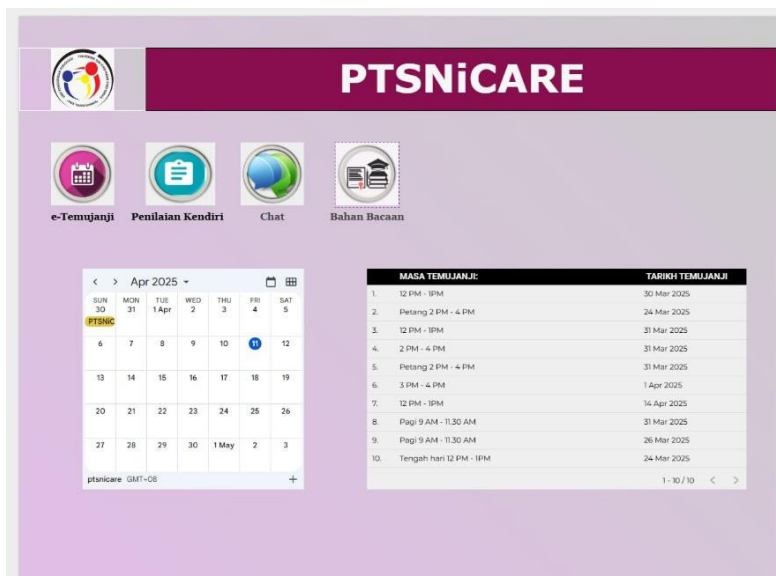


Figure 1: User interface



Figure 2 : Briefing session for 22 Pembimbing Rakan Siswa (PRS) and 4 PTSN Psychology Officers.

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PERMOHONAN UNTUK MENGGUNAKAN SISTEM PTSNiCARE DI LAMAN WEB RASMI POLITEKNIK TUN SYED NASIR SYED ISMAIL (PTSN)

Tuan Pengarah,

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan, bahawa kami dari Unit Pengurusan Psikologi, PTSN berhasrat untuk menggunakan sistem **PTSNiCARE** sebagai salah satu medium rasmi dalam memperkasakan perkhidmatan dan penyampaian maklumat berkaitan kesihatan dan kesejahteraan pelajar serta warga PTSN secara menyeluruh.

3. Sehubungan itu, kami ingin memohon kebenaran daripada Tuan Pengarah untuk menyenaraikan pautan sistem **PTSNiCARE** di laman web rasmi Politeknik Tun Syed Nasir Syed Ismail. Ini adalah bagi memudahkan akses pengguna terhadap sistem berkenaan di samping memperluas penggunaannya bagi mempercepatkan proses rujukan kesihatan mental pelajar, meningkatkan komunikasi antara pelajar, Penasihat Akademik dan Pegawai Psikologi. Selain itu, sistem **PTSNiCARE** ini juga membantu memupuk kesedaran tentang kesihatan mental melalui alat penilaian sendiri dan bahan pendidikan. Sistem **PTSNiCARE** ini diharapkan dapat memberi impak positif terhadap kesejahteraan di kalangan pelajar dan warga PTSN.

4. Justeru, kami amat berharap permohonan ini dapat dipertimbangkan sewajarnya demi manfaat bersama. Segala kerjasama dan perhatian dari Tuan Pengarah amat kami hargai.

Sekian, terima kasih

Dijuluskan dan ditandatangani ini

TS. HAMDAN BIN SAMDIN
PENGARAH
POLITEKNIK TUN SYED NASIR SYED ISMAIL
11/4/25

Saya yang menjalankan amanah,


(HAZWANLINTI BACHOK)
Pegawai Psikologi
merangkap Ketua Projek Inovasi PTSNiCARE

Figure 3: Official letter for the use of PTSNiCARE on PTSN official website

Conclusion and Recommendation

Though quite successful PTSNiCARE has had some limitations. First and foremost, that we depend quite much on a stable internet connection might disfavor students from areas with slow connectivity or those who don't have dependable devices. Secondly, very frequent patching of the system is a move for having secure sensitive data concerning mental health. Thirdly, the platform's effectiveness depends largely on students' engagement in using tools and services. Finally, there was no provision for advanced diagnostic features; the system relies on reported data, without which the complexity of any mental health diagnosis cannot be made.

In the future, PTSNiCARE aims to develop the framework to more smartly and accessible scalable ends. These include the application of artificial intelligence on behavioral patterns of students and issuing early alerts to those at risk. Going mobile allows for broader access, particularly considering the target population of the students who are used to interacting via smartphone. Adding more multilingual support is one way of widening more access, and the other is



inclusive design. In addition, it would be possible to set up connections with external mental health professionals who could be called upon for tele-mental health services. Longitudinal data analysis and user feedback have played a critical role in the success of previous drives. It will yet inform future system improvements and provide policy recommendations on how institutions can manage mental health better.

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