

Effectiveness of the Posrembatam.com Web-Based Information System in Increasing Adolescents' Participation in Youth Health Posts

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ABSTRACT

Adolescent health problems are becoming increasingly complex, including high rates of smoking, anaemia, and early pregnancy, as well as low participation in health promotion and prevention activities such as Adolescent Health Posts (Posyandu Remaja). Limited access to information and a lack of engaging educational media contribute to this low participation. This study aimed to determine the effect of the web-based information system Posrembatam.com on adolescent participation in Adolescent Health Post activities. A quantitative approach using a one-group pretest–posttest design was employed. The sample consisted of 62 adolescents from SMPN 62 Batam who received an intervention involving access to the Posrembatam.com website. The website provides information on adolescent health, activity schedules, map-based locations of Adolescent Health Posts, and interactive features. Data were collected using online questionnaires and analysed using descriptive statistics and the Wilcoxon signed-rank test. The results showed that all respondents considered the information provided on the website easy to understand and useful. Following the intervention, participation in Adolescent Health Post activities increased, with 51.9% of respondents participating and 48.1% not participating. The Wilcoxon signed-rank test showed a statistically significant difference in participation frequency before and after the intervention ($p = 0.000$; $p < 0.05$). Therefore, Posrembatam.com may serve as an effective web-based information system to support and improve adolescent participation in Adolescent Health Post activities.

INTRODUCTION

Adolescent Integrated Service Post is a form of community-based health service aimed at adolescents with a focus on maintaining physical and mental health, reproductive health, preventing non-communicable diseases (NCDs), drug abuse, and violence in adolescents (Ilmu et al., 2019).

Adolescents aged 10–19 years are in a transitional period from childhood to adulthood and face various health problems, such as smoking behavior, early pregnancy, sexually transmitted infections, mental health problems, and violence (WHO, 2025).

In Indonesia, adolescent health problems are also still a concern, as



indicated by smoking behavior, alcohol consumption, anxiety, loneliness, teenage pregnancy, and reproductive health problems (Risksdas, 2018).

In Batam City, the Health Office recorded various adolescent health problems, including 1,220 cases of smoking, 238 cases of anemia, 106 cases of pregnancy under the age of 20, 72 cases of childbirth, as well as cases of alcohol consumption, drug use, reproductive tract infections, and HIV in 2023 (Batam City Health Office, 2023).

These various problems are influenced by individual factors, family, peers, social environment, school, and unwise use of technology and social media (Gilbert, 2000; Fitri Afrita, 2023) and can have an impact on low healthy living behaviors and increased risks of physical, reproductive, and psychological health disorders (Mahesha et al., 2024).

Therefore, comprehensive promotional and preventive efforts are needed through health services that are easily accessible to adolescents, one of which is the Adolescent Health Post (Posyandu Remaja), a platform for community empowerment that provides health education, counseling, health

monitoring, and prevention of various adolescent health issues (Muliati & Yusuf, 2020; Abdullah & Anissa, 2023).

The results of a preliminary study on five adolescents aged 12–15 years at SMPN 62 Batam showed that four adolescents were unaware of the meaning or existence of youth integrated service post and had never received information about these activities from school or their neighborhood, while one adolescent knew about youth integrated service post but did not know the nearest location. Along with the development of information technology, the use of websites can be an effective and efficient medium for conveying information to adolescents.

Previous research has shown that a web-based youth integrated service post information system can facilitate adolescents in obtaining information about youth integrated service post activities and services (Arjuwanda et al., 2022).

Therefore, the Posrembatam.com website was developed by utilizing a Geographic Information System (GIS) to provide information about youth integrated



service post locations in Batam City as well as information about available activities and services. The use of this web-based information system is expected to increase ease of access to information and encourage adolescent participation in youth integrated service post activities. Based on this description, this study aims to determine the effect of using the Posrembatam.com web-based information system on increasing adolescent participation in youth integrated service post activities.

RESEARCH METHODS

This study uses a research and development (R&D) design with a quantitative approach to develop and evaluate the Posrembatam.com web-based information system in increasing adolescent participation in youth integrated service post activities. The website was developed through a preliminary study, needs identification, website design and development, content preparation, and initial testing before being implemented as an intervention. The main features of Posrembatam.com included information about Posyandu Remaja, health information relevant to adolescents,

information on Posyandu Remaja activities, and other educational content designed to increase adolescents' knowledge and interest in participating in youth integrated service post activities. The study was conducted at SMPN 62 Batam from June 18 to 26, 2025. The study population consisted of all 164 students of SMPN 62 Batam, with a sample of 62 respondents determined using the Slovin formula with a 10% margin of error and selected through purposive sampling based on inclusion and exclusion criteria. Participants accessed and used the Posrembatam.com website during the intervention period, with the duration of use adjusted to the research intervention schedule. Participants were encouraged to explore the available website content, particularly the menus containing information related to youth integrated service post and adolescent health, but were not required to access all menus in a specific order.

Website usage was monitored during the intervention to ensure that participants received and accessed the intended information. Primary data were obtained through initial interviews and the administration of adolescent participation questionnaires before



(pretest) and after (posttest) the intervention using the Posrembatam.com website, while secondary data were obtained from the Batam City Health Office, library studies, and relevant literature. The research instrument was a youth participation questionnaire that had undergone validity and reliability testing, with 45 items declared valid and a Cronbach's Alpha value of 0.985. The research procedures included a preliminary study, website development and initial testing, dissemination of information through the Posrembatam.com website, and measurement of youth participation before and after the intervention.

Data were analyzed using SPSS version 24 through univariate analysis to describe respondent characteristics and participation levels, and bivariate analysis. A normality test was performed using the Kolmogorov–Smirnov test because the sample size was greater than 50; normally distributed data were analyzed using a paired-samples t-test, while non-normally distributed data were analyzed using the Wilcoxon test, with a significance level of $p < 0.05$. This study received ethical approval from the

Awal Bros University Research Ethics Committee under Protocol Number UAB250010.

RESULTS AND DISCUSSION

This study was conducted at SMPN 62 Batam, located in Tanjung Buntung, Bengkong District, Batam City, Riau Islands, and involved 62 seventh-grade students selected according to predetermined inclusion and exclusion criteria. The study was conducted from June 18 to 26, 2025. The preliminary study indicated that access to information regarding youth integrated service post among adolescents was still limited. Before the intervention, 44 respondents (71.0%) reported that they had never received information about youth integrated service post, while only 18 respondents (29.0%) had previously received such information. This limited access to information was also reflected in the low level of participation, with 61 respondents (98.2%) categorized as not participating in youth integrated service post activities before the intervention.

These findings indicate that the low participation of adolescents was not necessarily caused by a lack of interest alone but may also have been related to



inadequate exposure to information, limited understanding of the benefits of youth integrated service post, and the absence of an information medium that was accessible and attractive to adolescents.

Analysis of the Development of the Posrembatam.com Website

Website development, and initial testing. The preliminary test involving five respondents identified several aspects that required improvement, particularly the information layout, the clarity of the youth integrated service

post activity schedule, and the questionnaire-completion feature. These findings demonstrate the importance of user testing in the development of digital health information systems. The website was subsequently refined, and the questionnaire feature was redirected to Google Forms to ensure that the questionnaire could function properly. This iterative development process contributed to the usability and acceptability of the website during the intervention.

kuisioner Partisipasi

Nama Inisial
John Doe

Umur
John Doe

Pernahkah anda mendapatkan informasi mengenai posyandu remaja ?
☐ Pernah
☐ Tidak Pernah

Sumber Informasi (jika menjawab pernah)
☐ Orang tua
☐ Tenaga Kesehatan
☐ Teman
☐ Guru
☐ Lainnya

Apakah anda terdaftar menjadi anggota posyandu remaja?
☐ Ya
☐ Tidak

Pesan
Masukkan pesan Anda

Kirim
Formulir telah berhasil dikirimkan!
Ada beberapa kesalahan saat mengirimkan formulir. Harap verifikasi kembali semua bidang formulir.

Jumlah Posyandu Remaja Kota Batam tahun 2024

NO	NAMA PUSKESMAS	JUMLAH POSYANDU REMAJA
1	PUSKESMAS SEI LAKOP	25
2	PUSKESMAS BULANG	6

Figure 1: Stage 1 Trial Questionnaire

The results showed that all information presented on respondents (100%) stated that the Posrembatam.com was easy to

understand.

This finding is important because the effectiveness of a digital health intervention depends not only on the availability of information but also on the extent to which users can

understand and apply the information provided. Information that is presented in a simple, structured, and visually accessible manner may reduce barriers to understanding among adolescents.



Link kuisonen
 klik link ini untuk mengisi kuisonen!
<https://forms.gle/eM5tpBZqhnwZYctT6>
 Jumlah Posyandu Remaja Kota Batam tahun 2024

NO	NAMA PUSKESMAS	JUMLAH POSYANDU REMAJA
1	PUSKESMAS SEI LEKOP	25
2	PUSKESMAS BULANG	6
3	PUSKESMAS BATU AJI	2
4	PUSKESMAS TANJUNG BUNTUNG	2
5	PUSKESMAS TANJUNG UNCANG	2
6	PUSKESMAS SEI PANAS	3
7	PUSKESMAS KAMPUNG JABI	5

Figure 2. Website Evaluation Improvement Results

The use of a website also allows information to be presented in a more flexible and interactive manner compared with conventional health education methods that rely only on face-to-face lectures or printed media. presentation providing information about the Adolescent Health Post (Posyandu Remaja) via the Posrembatam.com website, which lasted approximately 30 minutes.

The posttest was administered on June 26, 2025, seven days after the initial assessment.

Univariate Analysis of Respondent

Characteristics

Understanding the Characteristics of Seventh-Grade Adolescents at SMPN 62 Batam in 2025

Table 1. Frequency Distribution of Characteristics of Seventh-Grade Students by Age.

Age Characteristics	Frequency (n)	Percentage
12	2	3.2
13	36	58.1
14	20	32.3
15	3	4.8
16	1	1.6
Total	62	100

Table 1 shows that the majority of respondents were 13 years old, comprising 36 respondents (58.1%). This age group represents the early

adolescent period, making them an appropriate target for health education and promotion through web-based media.

Have you ever received any information about the adolescent health clinic for students at SMPN 62 Batam in 2025

Table 2. Sources of Information About Adolescent Health Clinics Among Adolescents

Have You Ever Received Information About Adolescent Health Clinics	Frequency (n)	Percentage
Yes	18	29
No	44	71
Total	62	100

Most respondents 44 respondents, or 71.0% had not received information about adolescent health posts, while 18 respondents, or 29.0%, had received such information.

Find out which students at SMPN 62 Batam are registered as members of the youth health post for 2025 before receiving information via the Posrebatam.Com website.

Table 3. Adolescents at SMPN 62 Batam Registered as Members of the Adolescent Health Post Before Receiving Web-Based Information from Posrebatam.Com

Registered as a Member of the Adolescent Health Post	Frequency (n)	Percentage
Registered	5	8.1
Not Registered	57	91.9
Total	62	100

Table 3 shows that the majority of adolescents were not registered as members of youth integrated service post, comprising 57 respondents (91.9%).

Table 4. Adolescents at SMPN 62 Batam Who Registered as Members of the Adolescent Health Post After Receiving Web-Based Information Posrebatam.Com

Registered as a Member of the Adolescent Health Post	Frequency (n)	Percentage
Registered	44	51.9
Not Registered	18	48.1
Total	62	100

The table 4 above shows that after being provided with information via the posrebatam.com website, the majority of adolescents 44 respondents, or 51.9% registered as members of the adolescent youth integrated service post, while 18 respondents, or 48.1%,

did not register.

Univariate Analysis

The univariate analysis in this study was conducted to determine whether the information available on the website is easily understandable and to examine the frequency of adolescents' participation in adolescent posyandu activities before and after the intervention. The results are presented in the following table.

Table 5. The information on the Posrembatam.com website is easy to understand

The information on posremabatam.com is easy to understand	Frequency (n)	Percentage
Yes	62	100
No	0	0
Total	62	100

Table 5 shows that all respondents (100%) stated that the information presented on the Posrembatam.com website is easy to understand. No respondents (0%) had difficulty understanding the information on the website.

Table 6. Frequency of Adolescent Participation Before Using the Posrembatam.com Website

Characteristics	Frequency(n)	Percentage
Participated (> 90)	1	1.8
Did Not Participate (< 90)	61	98.2
Total	62	100

Table 6 shows that, before accessing the Posrembatam.com website, the majority of respondents, comprising 61 adolescents (98.2%), did not participate in Integrated Service Post Remaja activities.

Table 7. Frequency of Adolescent Participation After Using

Characteristics	Frequency (n)	Percentage
Participated (> 90)	44	51.9
Did Not Participate (< 90)	18	48.1
Total	62	100

Table 7 shows that, among seventh-grade adolescents, participation in posyandu activities after accessing the posrembatam.com website revealed that the majority of respondents 44 respondents (51.9%) participated in adolescent integrated service post, while 18 respondents (48.1%) did not participate.

Bivariate Analysis

Normality Test

The results of the data normality test using the Kolmogorov-Smirnov test, with a sample size of 62 respondents, showed that the significance value for the Kolmogorov-Smirnov test was (0.000), which means it was less than (0.000). Therefore, it can be concluded that this study used



the Kolmogorov-Smirnov normality test because the population size was greater than 50 and the data in this study were not normally distributed. Consequently, the statistical test used in this study was the Wilcoxon test.

Uji Wilcoxon

Table 8. Analysis of the Effect of Web-Based Information Provided by Posrembatam.Com on Increasing Participation in Adolescent Integrated Service Post Activities.

Data on Adolescent Participation	Frequency (n)	Z Calculate	P-Value
Pra-Pasca	62	-5.542	0.000

Table 8 shows the results of the Wilcoxon test to determine the difference in adolescent participation before and after receiving information intervention through the Posrembatam.com website. The calculated Z-value = -5.542, P-value = 0.000. A p-value of 0.000 (less than $\alpha = 0.05$) indicates a significant difference between adolescent participation levels before and after receiving information through the website.

The results of this study indicate that the use of the Posrembatam.com web-based information system significantly increased adolescent participation in youth integrated service post activities, as shown by the

Wilcoxon test ($Z = -5.542$; $p = 0.000$).

This increase may be related to the limited information access among respondents before the intervention, with 71.0% having never received information about youth integrated service post. Through a simple and accessible digital platform, Posrembatam.com improved adolescents' understanding and awareness of Integrated Service Post youth, which may have encouraged their participation.

This finding is consistent with previous digital health intervention studies showing that web-based media can improve access to health information and encourage positive health-related behaviors. However, because this study did not include a control group, further research is needed to confirm the long-term effectiveness of the website.

CONCLUSIONS

Based on the results of a study conducted on 62 seventh-grade students at SMPN 62 Batam, it can be concluded that the Posrembatam.com web-based information system was easily understood by the respondents and may improve adolescent participation in



Posyandu Remaja activities. Before the intervention, 98.2% of respondents did not participate in youth integrated service post activities.

After accessing the Posrembatam.com website, 51.9% of respondents participated, while 48.1% did not participate. The Wilcoxon Signed-Rank Test showed a significant difference in adolescent participation before and after the intervention ($p = 0.000$; $p < 0.05$). These findings suggest that the Posrembatam.com website may improve adolescent participation in youth integrated service post activities at SMPN 62 Batam.

LITERATURE

- Abdullah, D. and Anissa, M. (2023) 'Faktor-faktor yang berhubungan tingkat partisipasi remaja dalam kegiatan Posyandu Remaja di Desa Bukit Makmur Wilayah Puskesmas Sungai Bahar 1 Kabupaten Muaro Jambi Tahun 2023', *Jurnal Kesehatan Saintika Meditory*, 6, pp. 36–37. Available at: <https://jurnal.syedzasaintika.ac.id>
- Alfitri, Rosdiah and R.V.W. (2020) *Internet dan perkembangan remaja*. 1st edn. Literasi Nusantara.
- Amir, E.F., Marzuki, A., Maisyaroh, S., Panggabean, U. and Sianipar, Y.A. (2025) 'Jurnal Menara Medis JMM 2025'.
- Ananda Muhamad Tri Utama (2022).
- Apriyani, R., Nugraha, U. and Yuliawan, E. (2022) 'Minat siswa terhadap mata pelajaran Pendidikan Jasmani kelas X SMA Negeri 12 Kota Jambi pada masa new normal', *Journal of SPORT (Sport, Physical Education, Organization, Recreation, and Training)*, 6(1), pp. 38–44. Available at: <https://doi.org/10.37058/sport.v6i1.5022>
- Arjuwanda, N.D., Pahlevi, R.F. and Jamil, A. (2022) 'Rancang bangun sistem informasi Posyandu berbasis web di Desa Kaligiri', *Journal of Informatics and Computing*, 1(1), pp. 27–34. Available at: <https://doi.org/10.31884/random.v1i1.11>
- Artamevia, R. (2022) 'Bab II kajian pustaka'. Bab II Kajian Pustaka 2.1, 12(2004), pp. 6–25.
- Barella, Y., Rustiyarso, Karolina, V., Bahari, Y., Zakso, A. and Supriadi (2023) 'Peningkatan kemampuan guru SMK dalam penggunaan media pembelajaran berbasis web melalui aplikasi Canva', *I-Com: Indonesian Community Journal*, 3(1), pp. 21–29. Available at: <https://doi.org/10.33379/icom.v3i1.2063>
- Desa, D.I. and Wagir, S. (2022) '3737–3748', 5(July), pp. 3737–3748.
- Dewantari, A., Prihantara, A., Supriyono, A.R. and Hartono,



- A.A. (2023) 'Sistem informasi Posyandu Remaja dalam perkembangan kesehatan gizi dan konseling remaja menggunakan framework CodeIgniter', Infotekmesin, 14(2), pp. 435–440. Available at: <https://doi.org/10.35970/infotekmesin.v14i2.1929>
- Dewi, E.K., Jati, S.P. and Suryoputro, A. (2024) 'Implementation analysis of the Youth Posyandu program in Pekalongan City', Jurnal Penelitian Pendidikan IPA, 10(5), pp. 2446–2453. Available at: <https://doi.org/10.29303/jppipa.v10i5.7143>
- Putra, R.D.Y.S. and Abidin, Z. (2020) 'Pengembangan media website e-learning berbasis model responsive web design untuk siswa SMA', Jurnal Kajian Teknologi Pendidikan, 3(3), pp. 292–302. Available at: <https://doi.org/10.17977/um038v3i32020p292>
- Faozan, F. (2022) 'Faktor-faktor yang mempengaruhi minat mahasiswa terhadap prestasi akademik pada mahasiswa Keperawatan S1 Semester VIII di Fakultas Ilmu Kesehatan UMP'.
- Farisi, A., Rachmat, N., Ezar, M. and Rivan, A. (2022) 'Pelatihan pembuatan website portal dengan menggunakan WordPress untuk siswa/siswi SMA Negeri 6 Palembang', 5(1), pp. 25–32.
- Galbinur, E., Defitra, M.A. and Venny (2021) 'Pentingnya pengetahuan kesehatan reproduksi bagi remaja', Prosiding SEMNAS BIO, pp. 221–228. Available at: <https://dp3appkb.kalteng.go.id/artikel/pentingnya-pengetahuan-kesehatan-reproduksi-bagi-remaja.html>
- Gilbert, S.F. (2000) Developmental Biology. 6th edn. Sinauer Associates.
- Hafifah, N. and Abidin, Z. (2020) 'Peran Posyandu dalam meningkatkan kualitas kesehatan ibu dan anak di Desa Sukawening, Kabupaten Bogor', Jurnal Pusat Inovasi Masyarakat, 2(5), pp. 893–900. Available at: <https://journal.ipb.ac.id/index.php/pim/article/view/31742>
- Kurniawati, M., Irianto, S.E. and Nurdiansyah, T.E. (2023) 'Analisis faktor yang berhubungan dengan partisipasi kunjungan Posyandu Remaja di Kabupaten Pringsewu', Ghidza: Jurnal Gizi dan Kesehatan, 7(2), pp. 347–356. Available at: <https://doi.org/10.22487/ghidza.v7i2.793>
- Laugi, S. (2018) 'Sistem informasi berbasis web dalam penyelenggaraan lembaga pendidikan', Shautut Tarbiyah, 24(1), p. 109. Available at: <https://doi.org/10.31332/str.v24i1.939>
- Mahesha, A., Anggraeni, D. and Adriansyah, M.I. (2024) 'Mengungkap kenakalan remaja: Penyebab, dampak, dan solusi', PRIMER: Jurnal Ilmiah Multidisiplin, 2(1), pp. 16–26. Available at: <https://doi.org/10.55681/primer.v2i1.278>

- Matondang, A. (2018) 'Pengaruh antara minat dan motivasi dengan prestasi belajar', *Jurnal Pendidikan Bahasa dan Sastra Indonesia*, 2(2), pp. 24–32.
- Muliati, N.M. and Yusuf, H. (2020) 'Faktor-faktor yang berhubungan dengan minat remaja berkunjung ke Posyandu di Kelurahan Baiya Kecamatan Tawaeli', *Jurnal Kolaboratif Sains*, 3(3), pp. 116–125.
- Okpatrioka (2023) 'Research and development (R&D): Penelitian yang inovatif dalam penelitian', *DHARMA ACARIYA NUSANTARA: Jurnal Pendidikan, Bahasa dan Budaya*, 1(1), pp. 86–100.
- Prajayanti, H. and Maslikah, M. (2021) 'Studi deskriptif kualitatif tentang partisipasi remaja dalam keikutsertaan Posyandu Remaja', *Jurnal Kebidanan Harapan Ibu Pekalongan*, 8(2), pp. 74–82. Available at: <https://doi.org/10.37402/jurbidhi.p.vol8.iss2.139>
- Purnamaningrum (2023) *Panduan Posyandu Remaja*. Politeknik Kesehatan Kementerian Kesehatan Yogyakarta.
- Rukajat, A. (2021) *Metodologi penelitian: Kuantitatif dan kualitatif*. 1st edn. Deepublish.
- Selviana, M.H. (2024) 'Perubahan fisik, kognitif, dan psikososial selama masa remaja', 8(11), pp. 113–119.
- Sriasih, N.G.K. (2022) 'Permasalahan remaja dan penanggulangannya', Repository Poltekkes Denpasar.
- Sulistiyowati, W. (2017) *Buku ajar statistika dasar*. Available at: <https://doi.org/10.21070/2017/978-979-3401-73-7>
- Suryanto, D. (2022) 'Etika penelitian', *Berkala Arkeologi*, 25(1), pp. 17–22. Available at: <https://doi.org/10.30883/jba.v25i1.906>
- Utama, Y. (2011) 'Jurnal Yadi Utama: Sistem informasi berbasis web', *Universitas Sriwijaya*, 3, pp. 359–370.
- World Health Organization (2025) *Kesehatan remaja*. Available at: <https://www.who.int/health-topics/adolescent-health>
- Wijayanto, H., Remawati, D. and Fitriani, P.A.N. (2023) 'Rancang bangun web profil sekolah SD IT Al-Hikam berbasis WordPress sebagai bentuk media promosi', *Jurnal Pengabdian Masyarakat Progresif Humanis Brainstorming*, 6(2), pp. 464–469. Available at: <https://doi.org/10.30591/japhb.v6i2.4148>
- Yanti Andriani, N., Sari, Y., Aryanti, S.N., Zaenal, S.F., Yustiani, Y. and Sopiawati, D. (2023) 'Implementasi program Posyandu Remaja pada kalangan remaja di Kelurahan Sudajaya Hilir', *Jurnal Pengabdian Kepada Masyarakat*, 1(2), pp. 82–89. Available at: <https://doi.org/10.59820/pengmas.v1i2.52>



Zurria, R. (2020) 'Partisipasi remaja dalam kegiatan pelayanan kesehatan peduli remaja', HIGEIA (Journal of Public Health Research and Development), 4(Special 4), pp. 919–928. Available at: <https://journal.unnes.ac.id/sju/higeia/article/view/34737>

