LEBAH
ISSN 1412-8128 (Print), 2964-9056 (Online) | Volume 18, No. 3 May (2025)
Diterbitkan oleh: Institut Hukum Sumberdaya Alam (IHSA Institute)

Improving Patients' Positive Perception of Dental Implant Use at Bhayangkara Brimop Hospital

Atik Setiawan Wahyuningsih[1], Mochamad Toto Sugiharto [2]
[1),2)]Universitas Strada Indonesia, Kediri, Indonesia

Article Info

Article history

Received : May 02, 2025
Revised : May 08, 2025
Accepted : May 24, 2025

Abstrak

Penggunaan implan gigi di Indonesia masih sangat rendah, seperti hasil kajian di RS Bhayangkara Brimob Depok, hal ini disebabkan oleh kurangnya pemahaman masyarakat dan persepsi negatif terhadap prosedur ini. Tujuan kegiatan ini adalah meningkatkan persepsi positif pasien di Poli Gigi mengenai manfaat, prosedur, dan keamanan implan gigi melalui edukasi berbasis bukti. Metode yang digunakan adalah Participatory Action Research (PAR), yang melibatkan penyuluhan langsung, konsultasi dokter spesialis, serta distribusi media edukatif. Hasil evaluasi kegiatan menunjukkan adanya peningkatan signifikan dalam persepsi positif pasien setelah intervensi, dari 26,7% sebelum edukasi menjadi 71,2% setelahnya. Rata-rata skor pemahaman pasien juga meningkat dari 61,57 menjadi 82,60. Edukasi yang efektif melalui pendekatan interaktif terbukti mampu mengubah pandangan pasien terhadap implan gigi. Meskipun program ini berhasil, tantangan seperti keterbatasan cakupan edukasi dan faktor biaya masih menjadi kendala utama. Rekomendasi ke depan adalah edukasi berkelanjutan melalui media digital serta kerja sama dengan pihak-pihak terkait untuk meningkatkan aksesibilitas penggunaan implan gigi.

Keywords:

Education;
Dental;
Implants;
Perception.

Abstract

Dental implant use in Indonesia is still very low, as the results of a study at Bhayangkara Brimob Depok Hospital, due to a lack of public understanding and negative perceptions of this procedure. This activity aimed to improve the positive perception of patients in the Dental Clinic regarding the benefits, procedures, and safety of dental implants through evidence-based education. The method used was Participatory Action Research (PAR), which involved direct counselling, specialist consultation, and educational media distribution. Evaluation results showed a significant increase in positive patient perceptions after the intervention, from 26.7% before education to 71.2% after. The average patient understanding score also increased from 61.57 to 82.60. Effective education through an interactive approach has been shown to change patients' views on dental implants. Despite the success of this programme, challenges such as limited educational coverage and cost are still a major obstacle. Recommendations for the future are continuous education through digital media and cooperation with related parties to increase the accessibility of dental implant use.

Corresponding Author:

Mochamad Toto Sugiharto,
Program Pascasarjana S3 Kesehatan Masyarakat
Universitas Strada Indonesia
Jln Manila No 37 Sumberece, Tosaren, Pesantren Kediri Kota, Jawa Timur 64121
mtsugiharto25@gmail.com

INTRODUCTION

The quality of oral health is an important aspect of a person's quality of life, especially in terms of masticatory function, aesthetics, and overall health (Barranca-Enríquez & Romo-González, 2022). The most important problem in dentistry is the loss of permanent teeth, which can cause functional

impairment, and lower the patient's self-confidence (Sermsiripoca dkk., 2021). Missing teeth without replacement can lead to various problems, such as shifting position of the remaining teeth, malocclusion, and increased risk of periodontal disease (Manfredini dkk., 2024a; Sermsiripoca dkk., 2021). In this regard, dental implants can be an effective solution to correct the problem of permanent tooth loss (Duong dkk., 2022; Siddique dkk., 2019). Dental implants have more durability and comfort than conventional dentures (Perea dkk., 2015). The utilization of dental implants in Indonesia, however, is still relatively low due to a lack of public understanding and negative perceptions of the procedure (Gupta dkk., 2023; Su dkk., 2021).

People's perceptions of dental implants are influenced by a variety of factors, including demographic, socio-economic, cultural, and psychological (Elani dkk., 2018; Khalaf dkk., 2021; Xie dkk., 2023). Age and gender play a role in implant decisions, with older individuals and women tending to consider aesthetics and dental health more (Elani dkk., 2018; John dkk., 2022; Sfeatcu dkk., 2022). Socio-economic factors such as education level, occupation, and income influence access to and attitudes towards dental implants, with educated and high-income individuals being more accepting of the procedure (Alamoush dkk., 2022; Bas & Azogui-Lévy, 2022; Huang dkk., 2023). Additionally, culture influences the perception of medical necessity, with some groups only seeking treatment when the problem is severe (Khalaf dkk., 2021; Schierz dkk., 2021). Psychological factors such as knowledge, self-efficacy and anxiety also play a role, where limited information and fear of invasive procedures can be barriers to choosing dental implants (Dhanai dkk., 2023; Manfredini dkk., 2024a, 2024b; Oghli dkk., 2020).

Underutilization of dental implants is an issue that requires attention, especially in Bhayangkara Brimob Hospital Depok. Based on medical record data from 2023, only about 5% of patients with tooth loss opted for the procedure, while the majority preferred removable dentures. Education, fear of the procedure, and the perceived high cost of insertion are the main factors for the low adoption rate of dental implants (Alamoush dkk., 2022; Bas & Azogui-Lévy, 2022; Cope & Chestnutt, 2023). There is a need for systematic educational interventions to increase patient understanding of the benefits of dental implants as a long-term solution.

A literature review of various studies shows that effective health promotion can help increase patient acceptance of dental implants by providing clear information about their benefits and safety (Mously dkk., 2020; Setiawati dkk., 2024). The American Academy of Implant Dentistry (2020) states that dental implants have a success rate of more than 97% over 10 years, which makes them a more durable solution than other alternatives (American, 2020). In this study, psychosocial factors also play a role in shaping patients' perceptions of dental implants, which requires an appropriate communication approach in education (Elani dkk., 2018; Ho dkk., 2022; Khalaf dkk., 2021; Xie dkk., 2023) .

According to the problem-solving plan, there are three main strategies: direct counseling to patients, dissemination of information through print media, and conducting consultation sessions with dental specialists. This intervention aims to reduce negative perceptions of dental implants and increase patient understanding of the procedure and its benefits. With systematic education, patients are expected to be more confident in choosing dental implants as a rehabilitation solution for missing teeth (Pakpahan dkk., 2021; Suryana dkk., 2024).

This community service activity has the following objectives: (1) to educate patients about the benefits, procedures, and safety of dental implants; (2) to improve patients' understanding of the importance of oral health and the impact of tooth loss on quality of life; and (3) to reduce negative perceptions of dental implants through effective and evidence-based health promotion.

An evidence-based health promotion approach serves as a strategic solution to both psychological and economic barriers by providing patients with accurate, accessible, and contextual information that enhances their understanding and trust in dental implant procedures. This strategy not only addresses fears and misconceptions, often rooted in a lack of knowledge or anxiety about invasive treatments, but also helps patients perceive implants as a long-term investment in oral health rather than a costly risk. Furthermore, integrating medical risk communication into this approach plays a vital role in bridging negative perceptions, as it empowers patients to make informed decisions by clarifying potential risks, benefits, and procedural expectations in a transparent and empathetic manner. Together, these approaches support behavioral change, increase acceptance, and foster more equitable access to dental implant services.

METHODS

Participatory Action Research (PAR) is the method used in this community service activity, which involves active participation from patients, health workers, and the community service team in all stages of the educational program on dental implants. This approach allows direct interaction between the service team and participants to understand the problem, design interventions, and evaluate results collaboratively. The main activities in this method include health counseling, direct consultation, and distribution of educational materials in the form of leaflets.

To ensure inclusivity in the Participatory Action Research (PAR) approach for patients with low educational backgrounds or high medical anxiety, the intervention incorporated simplified language, visual aids, and interactive counseling to foster understanding and emotional comfort. Leaflets were selected as the main educational media due to their practicality, accessibility, and adaptability to various literacy levels. The design utilized plain language, culturally relevant visuals, and clear formatting, and was pre-tested for readability and comprehension. These strategies collectively supported effective health communication by addressing both cognitive and emotional barriers, thereby enhancing patient engagement and informed decision-making regarding dental implants.

This program was carried out in several main stages. The first stage was problem identification, which was conducted through an initial survey and interviews with patients to measure initial understanding of dental implants. In addition, a review of patient medical records related to the trend of dental implant utilization at Bhayangkara Brimob Hospital Depok was conducted. The results of this stage became the basis for designing educational intervention strategies.

The second step was intervention planning, where the service team developed evidence-based educational materials on the benefits and procedures of dental implants. In addition, health promotion media design in the form of leaflets was carried out to facilitate the dissemination of information to patients. At this stage, the service team involved developed attractive counseling techniques so that information could be conveyed more effectively.

In the third stage, the program was implemented, which included several main activities. First, direct counseling was conducted, where educational materials were delivered to patients visiting the Dental Clinic of Bhayangkara Brimob Hospital Depok. Second, patients were given the opportunity to have an individual consultation with a dental specialist to discuss any concerns or questions they had regarding the dental implant procedure. Third, the distribution of educational media in the form of leaflets that can be re-read when needed.

After the education program was completed, the fourth stage was evaluation and monitoring, which was conducted to measure the effectiveness of the intervention. This is done using a pre-test and post-test method using a questionnaire that measures perceptions about dental implants before and after the education program. In this study, the results of the data analysis will be used to refine the education strategy that will be implemented in the future.

The main partner in this activity is Bhayangkara Brimob Depok Hospital, which is a referral hospital in the health sector. The location of the activity took place at the Dental Clinic of Bhayangkara Brimob Depok Hospital, which provided facilities and medical personnel to support the education of patients. Participants involved in this program include patients of the Dental Clinic of Bhayangkara Brimob Depok Hospital as the main target of education, specialist dentists as presenters in counseling and consultation sessions, community service teams from Strada Indonesia University as facilitators in data collection and education implementation, and hospital health workers who support logistics and information dissemination.

The effectiveness of the program was measured using quantitative methods with a pre-test and post-test approach. Data was collected through questionnaires to measure patients' understanding and changes in perception regarding dental implants before and after the educational intervention. The pre-test was conducted before the counseling to measure the patient's initial level of understanding, while the post-test was conducted after the education to see the improvement in understanding. Descriptive statistical analysis was used to identify changes in patient perceptions before and after education.

RESULTS AND DISCUSSION

Characteristic of the target

The result of the data processing of the questionnaire shows that patients in the dental clinic have

various characteristics. The characteristics of the 45 respondents are shown in the following Table 1.

Table 1 Characteristics of respondents

Characteristics	f	%
Age		
>50 th	10	22.2
41-50 th	26	57.8
30-40 th	4	8.9
<30 th	5	11.1
Gender		
Female	19	42.2
Male	26	57.8
Education		
College	18	40
Secondary	25	55.6
Elementary	2	4.4
Occupation		
Retired	10	22.2
Trader	2	4.4
Private	18	40
Public Servant	15	33.3
Information		
Never been	30	66.7
Already been	15	33.3
N = 45		

Table 1 shows that the majority of respondents in this study were in the age range of 41-50 years as many as 26 people (57.8%). Based on gender, there were more male respondents than female, as many as 26 people (57.8%). In terms of education, most respondents have a secondary education level (SMA) as many as 25 people (55.6%). The most common occupation of respondents was private employees, as many as 18 people (40%). In addition, most respondents had never received information about dental implants, with a total of 30 people (66.7%).

Descriptive Statistics

The descriptive statistics are used to provide an overview of the data before and after being given an intervention in the form of health education about dental implants. Table 2 shows the results of descriptive analysis of the total pre-test and post-test perception scores of 45 respondents.

Table 2 Results of data processing with descriptive statistics

	Minimum	Maximum	Mean	SD
Pre-test score	32.0	96.0	61.578	17.0487
Post-test score	58.0	112.0	82.600	13.9225

Table 2 shows that the mean value of the pre-test is 61.578 with a standard deviation of 17.0487, this means that the score of patient perceptions before being given education is still relatively low. After being given health education, the average score increased to 82.600 with a standard deviation of 13.9225. This is indicated that the health education intervention had a significant impact on improving patients' perceptions of dental implants.

The distribution of respondents' perceptions of dental implants before and after the intervention can be seen in Table 3.

Table 3 Respondents' perceptions before and after health education

Perception	Pre-test		Post-test	
	f	%	f	%
Positive	12	26.7	32	71.2
Negative	33	73.3	13	28.9

Table 3 analyzes the perceptions of respondents before and after being given health education, showing a significant change. Before being given health education (pre-test), the majority of respondents had a negative perception of dental implants, as many as 33 people (73.3%), while only 12 people (26.7%) had a positive perception. This result shows that before receiving further information, most respondents still had unfavorable views or doubts about the use of dental implants, possibly due to

a lack of knowledge or concerns about the procedure and cost of implants.

There was a considerable increase in the number of respondents who had positive perceptions, which increased to 32 people (71.2%) after being given health education (post-test). In contrast, the number of respondents who had negative perceptions decreased dramatically to 13 people (28.9%). This implies that the education and information provided had a significant impact in increasing the respondents' understanding and positive perception of dental implants. Increased awareness of the benefits, effectiveness, and safety of dental implants meant that many respondents who were previously skeptical finally had a better view after receiving a comprehensive explanation through health education.

Discussion

Health education activities on dental implants at Bhayangkara Brimob Depok Hospital showed an increase in positive perceptions after the educational intervention. Based on the data obtained from the pre-test and post-test questionnaires, there were significant changes in patients' perceptions of dental implants. The diverse characteristics of the respondents show that this education reaches out to different age groups, genders, education levels, and occupational backgrounds.

The characteristics of respondents in this activity were dominated by the 41-50 years age group (57.8%) and more men (57.8%) than women. Most respondents had a secondary education level (55.6%) and worked in the private sector (40%). This data shows that the majority of participants are individuals with active work experience and educational backgrounds that enable them to receive new information well. However, 66.7% of respondents admitted that they had never received information about dental implants before, which was one of the factors for the low positive perception of the procedure before the intervention.

A descriptive statistical analysis showed an increase in the average patient perception score before and after education. The pre-test mean score of 61.578 with a standard deviation of 17.0487 indicates that the patient's initial understanding of dental implants is still relatively low. After being given health education, the average score increased to 82.600 with a standard deviation of 13.9225. This shows that the health education intervention has a significant positive impact on improving patients' understanding of dental implants.

The distribution of patient perceptions before and after the intervention also showed significant improvement. Before the education, only 26.7% of respondents had a positive perception of dental implants, while after the intervention, this number increased to 71.2%. In contrast, the number of patients with negative perceptions decreased from 73.3% to 28.9%. This increase shows that by providing clear and evidence-based information, patients are more accepting and understand the benefits of dental implants as a solution to rehabilitate missing teeth.

The factors that influence the success of this activity include the interactive delivery method of education, the involvement of health workers in answering patient questions, and the use of attractive educational media. The direct approach through discussion and personal consultation allowed patients to clarify their doubts and gain a better understanding. In addition, other factors such as age and education level also influence the speed of understanding of the material provided.

The program was successful in improving patients' perceptions, but there are still challenges in changing patients' attitudes and decision to choose dental implants. Some patients are still hesitant due to cost and fear of medical procedures. Therefore, a more sustainable educational approach is needed as well as policy support from the hospital to expand access to information and facilities related to dental implants.

The overall program was successful in improving patients' understanding of dental implants and demonstrating that health education has an important role in changing people's perceptions of certain medical procedures. Similar programs need to be expanded with more innovative methods to maximize the benefits of this education in increasing public awareness of oral health.

CONCLUSION

This community service activity succeeded in improving patients' understanding of dental implants through evidence-based education. Evaluation results showed an increase in positive patient perceptions after the intervention. Direct counseling, consultation with specialists, and distribution of educational materials proved effective in changing patients' mindset towards dental implants. Several limitations exist in this service activity, such as the scope of education that is limited to patients who

attend the hospital and the cost factor which remains a major obstacle. In addition, time constraints in counseling caused some patients not to get in-depth information.

The planned digital education strategy aims to overcome physical and geographical barriers by utilizing accessible platforms such as mobile-friendly websites, social media, and messaging applications to disseminate educational content on dental implants. This approach is particularly beneficial for patients in rural or remote areas who have limited access to hospital-based services. By integrating multimedia content, such as videos, infographics, and interactive Q&A formats, digital education can effectively engage diverse audiences regardless of location. Furthermore, the service model demonstrated in this study can be adapted and scaled to other primary health facilities by standardizing educational materials, training local health workers in communication strategies, and collaborating with governmental and non-governmental organizations. This positions the model as a viable component of a broader national dental implant promotion campaign aimed at improving oral health equity.

Referensi

Alamoush, RA., Elmanaseer, WR., Matar, YW., Al-Omoush, S., & Satterthwaite, JD. (2022). Sociodemographic Factors and Implant Consideration by Patients Attending Removable Prosthodontics Clinics. *Biomed Res Int*, *Jul*(2022), 8466979. https://doi.org/10.1155/2022/8466979

American, A. of I. D. (2020). *What are dental implants?* https://www.aaid-implant.org/about-dental-implants/.

Barranca-Enríquez, A., & Romo-González, T. (2022). Your health is in your mouth: A comprehensive view to promote general wellness. *Front Oral Health*, *Sep*(3), 971223. https://doi.org/10.3389/froh.2022.971223

Bas, AC., & Azogui-Lévy, S. (2022). Socio-Economic Determinants of Dental Service Expenditure: Findings from a French National Survey. *Int J Environ Res Public Health*, *19*(3), 1310. https://doi.org/10.3390/ijerph19031310

Cope, A. L., & Chestnutt, I. G. (2023). The implications of a cost-of-living crisis for oral health and dental care. *British Dental Journal*, *234*(7), 501–504. https://doi.org/10.1038/s41415-023-5685-0

Dhanai, A., Bagde, H., Ghildiyal, C., Mukherjee, K., Pallavi, K., & Joshi, P. (2023). Knowledge and Perception about Dental Implant and Its Complications among Dental and Medical Students—A Comparative Observational Survey. *Journal of Pharmacy and Bioallied Sciences*, *15*(Suppl 2), S971–S973. https://doi.org/10.4103/jpbs.jpbs_262_23

Duong, H., Roccuzzo, A., Stähli, A., Salvi, G. E., Lang, N. P., & Sculean, A. (2022). Oral health-related quality of life of patients rehabilitated with fixed and removable implant-supported dental prostheses. *Periodontology 2000*, *88*(1), 201–237. https://doi.org/10.1111/prd.12419

Elani, HW., Starr, JR., Da Silva, JD., & Gallucci, GO. (2018). Trends in Dental Implant Use in the U.S., 1999–2016, and Projections to 2026. *Journal of Dental Research*, *97*(3), 1424–1430. https://doi.org/10.1177/0022034518792567

Gupta, R., Gupta, N., & Weber, D. KK. (2023). *Dental Implants*. StatPearls Publishing.

Ho, K., Bahammam, S., Chen, CY., Hojo, Y., Kim, D., Hisatomo, K., Da Silva, J., & Nagai, S. (2022). A cross-sectional survey of patient's perception and knowledge of dental implants in Japan. *Int J Implant Dent*, *8*(1), 14. https://doi.org/10.1186/s40729-022-00410-w

Huang, T., Li, J., & Wang, Z. (2023). Evaluating the influence of static management on individuals' oral health. *BMC Oral Health*, *23*(1), 584. https://doi.org/10.1186/s12903-023-03300-8

John, M., Omara, M., Su, N., List, T., Sekulic, S., Häggman-Henrikson, B., Visscher, C., Bekes, K., Reissmann, D., Baba, K., Schierz, O., Theis-Mahon, N., Fueki, K., Stamm, T., Bondemark, L., Oghli, I., Van Wijk, A., & Larsson, P. (2022). RECOMMENDATIONS FOR USE AND SCORING OF ORAL HEALTH IMPACT PROFILE VERSIONS. *Journal of Evidence-Based Dental Practice*, *22*(1), 101619. https://doi.org/10.1016/j.jebdp.2021.101619

Khalaf, ME., Abubakr, NH., Alenezi, HM., & Ziada, HM. (2021). Patients' Perspectives of Grafting Materials in Implant Dentistry: A Qualitative Analysis. *J Int Soc Prev Community Dent*, *11*(4), 428–436. https://doi.org/10.4103/jispcd.JISPCD_82_21

Manfredini, M., Pellegrini, M., Rigoni, M., Veronesi, V., Beretta, M., Maiorana, C., & Poli, P. P. (2024a). Oral health-related quality of life in implant-supported rehabilitations: A prospective single-center observational cohort study. *BMC Oral Health*, *24*(1), 531. https://doi.org/10.1186/s12903-024-04265-y

Manfredini, M., Pellegrini, M., Rigoni, M., Veronesi, V., Beretta, M., Maiorana, C., & Poli, P. P. (2024b). Oral health-related quality of life in implant-supported rehabilitations: A prospective single-center observational cohort study. *BMC Oral Health*, *24*(1), 531. https://doi.org/10.1186/s12903-024-04265-y

Mously, H., Badeeb, B., Bahbishi, N., Mzain, W., Naguib, G., & Hamed, M. (2020). Knowledge and attitude toward replacing missing teeth with dental implants among the Saudi population. *Journal of Orthodontic Science*, *9*(1), 5. https://doi.org/10.4103/jos.JOS_74_19

Oghli, I., List, T., Su, N., & Häggman-Henrikson, B. (2020). The impact of oro-facial pain conditions on oral health-related quality of life: A systematic review. *Journal of Oral Rehabilitation*, *47*(8), 1052–1064. https://doi.org/10.1111/joor.12994

Pakpahan, M., Siregar, D., Susilawaty, A., & Tasnim, T. (2021). *Promosi Kesehatan dan Perilaku Kesehatan*. Yayasan Kita Manulis.

Perea, C., Preciado, A., Río, J. D., Lynch, C. D., Celemín, A., & Castillo-Oyagüe, R. (2015). Oral aesthetic-related quality of life of muco-supported prosthesis and implant-retained overdenture wearers assessed by a new, short, specific scale (QoLDAS-9). *Journal of Dentistry*, *43*(11), 1337–1345. https://doi.org/10.1016/j.jdent.2015.08.010

Schierz, O., Baba, K., & Fueki, K. (2021). Functional oral health-related quality of life impact: A systematic review in populations with tooth loss. *Journal of Oral Rehabilitation*, *48*(3), 256–270. https://doi.org/10.1111/joor.12984

Sermsiripoca, K., Pisarnturakit, PP., Mattheos, N., Pimkhaokham, A., & Subbalekha, K. (2021). Comparing pre- and post-treatment patients' perceptions on dental implant therapy. *Clin Implant Dent Relat Res*, *23*(5), 769–778. https://doi.org/10.1111/cid.13036

Setiawati, N., Abdi, M. J., Amir, A. M. I. M., Afiyah, N., Salsabila, N., & Ramadhan, S. (2024). Pengetahuan Masyarakat terhadap Pemakaian Implan Gigi dalam Pandangan Islam di Batalyon Armed 6/3 Kostrad. *Jurnal Pengabdian Kedokteran Indonesia*, *5*(2), 59–69. https://doi.org/10.33096/jpki.v5i2.316

Sfeatcu, R., Balgiu, B. A., Mihai, C., Petre, A., Pantea, M., & Tribus, L. (2022). Gender Differences in Oral Health: Self-Reported Attitudes, Values, Behaviours and Literacy among Romanian Adults. *Journal of Personalized Medicine*, *12*(10), 1603. https://doi.org/10.3390/jpm12101603

Siddique, E., Bhat, P., Kulkarni, S., Trasad, V., & Thakur, S. (2019). Public awareness, knowledge, attitude and acceptance of dental implants as a treatment modality among patients visiting SDM College of Dental Sciences and Hospital, Dharwad. *Journal of Indian Society of Periodontology*, *23*(1), 58. https://doi.org/10.4103/jisp.jisp_281_18

Su, N., Van Wijk, A., & Visscher, C. M. (2021). Psychosocial oral health-related quality of life impact: A systematic review. *Journal of Oral Rehabilitation*, *48*(3), 282–292. https://doi.org/10.1111/joor.13064

Suryana, B., Mokodompis, Y., Rahmah, S. M., & Zhuhra, R. T. (2024). *Pendidikan Kesehatan dan Ilmu Perilaku*. Eureka Media Aksara.

Xie, X., Zhang, Z., Zhou, J., & Al., E. (2023). Changes of dental anxiety, aesthetic perception and oral health-related quality of life related to influencing factors of patients' demographics after anterior implant treatment: A prospective study. *Int J Implant Dent*, *22*(9).