

Analysis of Factors Influencing Community Participation in the Free Health Screening Program Based on the PRECEDE–PROCEED Model

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ABSTRACT

Background: Free health screening programs (*Program Pemeriksaan Kesehatan Gratis*/PKG) are essential promotive and preventive strategies to improve public health through early disease detection. However, community participation remains suboptimal despite the availability of free services. This study aimed to analyze factors influencing community participation based on the PRECEDE–PROCEED model.

Subjects and Method: This was an analytic cross-sectional study conducted in six public health centers in Sragen Regency, Central Java, Indonesia. The target population was community members aged ≥ 15 years who were eligible for the PKG program. A total of 264 respondents were selected using simple random sampling. The dependent variable was community participation in the PKG Program. Independent variables included predisposing factors (knowledge, attitude, motivation), enabling factors (facilities, ease of access, service information), and reinforcing factors (social support). Data were collected using a structured questionnaire and analyzed using the Chi-Square test and multiple logistic regression.

Results: Multivariate analysis showed that respondents with easy access to health services were 4.40 times more likely to participate in the PKG Program than those with difficult access (OR= 4.40; 95% CI=1.41 to 13.72; $p=0.011$). Respondents with high social support were 22.03 times more likely to participate than those with low social support (OR= 22.03; 95% CI=4.59 to 105.74; $p<0.001$). Although not statistically significant, facilities showed a borderline association with participation (OR=0.02; 95% CI=0.0002 to 1.39; $p=0.070$). Social support was the most dominant factor influencing participation.

Conclusion: Community participation in the PKG Program was relatively high. Social support was the strongest determinant of participation, while ease of access significantly influenced participation. Although not statistically significant, the availability of facilities showed a borderline association and may contribute to improving community participation.

Keywords: community participation, health screening, social support, access, health behavior.

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BACKGROUND

Non-communicable diseases (NCDs) have become a major public health challenge, particularly in developing countries such as Indonesia, which face a double burden of disease characterized by the coexistence of communicable and non-communicable diseases (Oktaria and Mahendradhata, 2022). Cardiovascular diseases, diabetes mellitus, cancer, and chronic respiratory diseases account for a substantial proportion of premature mortality and disability, creating considerable social and economic burdens. Many of these diseases develop gradually and remain asymptomatic until complications occur, making early detection an essential component of disease prevention and control. Consequently, strengthening promotive and preventive health services has become a national and global priority to reduce morbidity, mortality, and healthcare expenditures.

Efforts to improve population health status are an integral part of national development, aiming to enhance awareness, willingness, and the ability of individuals to maintain healthy lifestyles. Preventive interventions, including routine health screening, are recognized as cost-effective strategies for identifying risk factors and diseases at an early stage, enabling timely treatment and reducing long-term health complications. Early detection also contributes to improving quality of life, increasing life expectancy, and reducing the financial burden on both households and healthcare systems.

To strengthen preventive healthcare, the Government of Indonesia introduced the free health screening program (*Program Pemeriksaan Kesehatan Gratis/ PKG*), a nationwide initiative regulated by

the Ministry of Health of the Republic of Indonesia. The program provides free health screening services covering blood pressure measurement, blood glucose testing, cholesterol screening, nutritional assessment, mental health screening, and other age-specific examinations to facilitate early disease detection and improve access to preventive health services (Ministry of Health of the Republic of Indonesia, 2025). As one of the national priority programs, PKG is expected to increase public awareness of routine health examinations and encourage healthier behaviors through early identification of health risks.

Despite the availability of free health services, community participation in such programs remains suboptimal. Financial barriers alone do not fully explain participation in preventive health services. Previous studies have shown that participation in health programs is influenced by multiple factors, including knowledge, health awareness, perceived benefits, accessibility of health services, availability of facilities, and social support from family, community leaders, and healthcare providers (Masjadi et al., 2022; Mayasari et al., 2025; Nur'Ilmi et al., 2025). Individuals may still choose not to participate because they perceive themselves as healthy, have limited access to healthcare facilities, receive inadequate information about available services, or lack encouragement from their social environment.

Community participation in health programs is a complex health behavior influenced by individual, environmental, and social determinants. The PRECEDE–PROCEED model provides a comprehensive framework for understanding these determinants by classifying them into

predisposing, enabling, and reinforcing factors (Green and Kreuter, 2018; McKenzie et al., 2017). Predisposing factors include knowledge, attitudes, and motivation that shape individuals' readiness to adopt healthy behaviors. Enabling factors refer to resources and conditions that facilitate behavioral change, such as the availability of facilities, accessibility of health services, and adequate health information. Reinforcing factors include support from family members, peers, community leaders, and health professionals, which strengthen or sustain health-related behaviors. This model has been widely applied in health promotion planning and evaluation because it provides a systematic approach to identifying behavioral determinants and designing effective interventions (Glanz et al., 2016; Crosby and Noar, 2021; Wahyuningsih et al., 2022).

Previous research also indicates that successful implementation of health promotion programs depends not only on individual characteristics but also on environmental support systems and community engagement (Sulaeman et al., 2015; Fitri, Arumsari, and Ningtyas, 2024). Community engagement encourages trust in health services, improves communication between healthcare providers and communities, and increases the utilization of preventive healthcare services (WHO, 2020). Therefore, interventions aimed at improving participation should address behavioral, social, and structural determinants simultaneously rather than focusing solely on individual knowledge.

Although PKG has been implemented throughout Indonesia, participation levels vary considerably across regions. In Sragen Regency, the implementation of PKG has not yet achieved the expected program targets, indicating that substantial barriers to participation remain despite the

availability of free services. Understanding the determinants of community participation is therefore essential for improving program coverage, strengthening preventive health strategies, and optimizing the effectiveness of national health policies at the local level.

While previous studies have examined determinants of participation in health promotion and screening programs, evidence specifically related to the newly implemented PKG remains limited. Furthermore, few studies have comprehensively analyzed community participation using the PRECEDE–PROCEED model, which simultaneously considers predisposing, enabling, and reinforcing factors. This study addresses this gap by examining the factors influencing community participation in the PKG Program in Sragen Regency using the PRECEDE–PROCEED framework. The findings are expected to provide evidence for developing targeted interventions and policy recommendations to improve participation in preventive health programs in Indonesia.

SUBJECTS AND METHOD

1. Study Design

A cross-sectional design conducted in six public health centers (Ngrampal, Karangmalang, Sambirejo, Gondang, Plupuh II, and Jenar) in Sragen Regency, Central Java. Data collection was carried out from January to March 2026.

2. Population and Sample

The target population was community members aged ≥ 15 years in Sragen Regency who were eligible for the PKG Program, totaling 1,004,761 individuals. The source population consisted of individuals available during the study period in selected public health centers.

The sample size was determined using the rule of thumb (Hair et al., 2019). The

sample was proportionally allocated across six public health centers based on PKG coverage. A total of 264 respondents were included and selected using simple random sampling.

3. Study Variables

The dependent variable was community participation in the PKG Program. The independent variables included predisposing factors (knowledge, attitude, motivation), enabling factors (availability of facilities, ease of access, service information), and reinforcing factors (social support).

4. Operational Definition of Variables

Community Participation in the Free Health Check Program (PKG), defined as respondents' involvement in the program based on self-reported data, categorized as participated and not participated. The independent variables consisted of predisposing, enabling, and reinforcing factors.

Knowledge was defined as respondents' understanding of the benefits, objectives, and procedures of the PKG program, measured using a questionnaire and categorized as good $\geq 60\%$ correct answers and poor $< 60\%$.

Attitude was defined as respondents' perceptions toward the importance and benefits of the PKG program, measured using a Likert scale and categorized as positive $\geq 50\%$ and negative $< 50\%$.

Motivation referred to internal and external drives influencing respondents' willingness to participate, categorized as good $\geq 50\%$ and poor $< 50\%$. Enabling factors included facilities, ease of access, and service information.

Facilities referred to the availability of supporting infrastructure for PKG implementation, categorized as adequate $\geq 50\%$ and inadequate $< 50\%$.

Ease of access was defined as the level of ease in reaching the service location and

time, categorized as easy $\geq 50\%$ and difficult $< 50\%$.

Service information referred to respondents' perception of clarity and adequacy of information about PKG, categorized as good $\geq 50\%$ and poor $< 50\%$.

social support, defined as informational, emotional, and practical support from the surrounding environment that encourages participation in PKG, categorized as good $\geq 50\%$ and poor $< 50\%$. All variables were measured using structured questionnaires and analyzed as dichotomous variables.

5. Study Instruments

Community participation was measured by questionnaire. Knowledge was measured using 5 items, attitude using 6 items, and motivation using 5 items through structured questionnaires with Likert scale. Facilities were measured using 5 items, while ease of access and service information were measured using 6 items each. Social support was measured using 6 items. Respondent characteristics (age, sex, education, occupation, and address) were obtained by questionnaire. The questionnaire had been tested for validity and reliability prior to data collection.

6. Data analysis

Data Analysis: Univariate analysis was conducted to describe the characteristics of study subjects and the distribution of variables using frequency and percentage. Bivariate analysis was performed using the Chi-square test to examine the association between independent variables and community participation. Fisher's exact test was applied when the expected cell count was less than 5. Multivariate analysis was conducted using multiple logistic regression to determine the effect of independent variables on community participation. The results were presented as Odds Ratio (OR), 95% Confidence Interval (CI), and p-value.

7. Research Ethics

Research Ethics: Ethical issues including informed consent, anonymity, and confidentiality were addressed carefully during the study process. The research ethical clearance approval letter was obtained from the Health Research Ethics Committee of Dr. Moewardi General Hospital, Surakarta, Indonesia (No. 243/II/HREC/2026) on February 12, 2026.

RESULTS

1. Sample Characteristics

Table 1 presents the characteristics of the respondents. Most respondents were female (67.0%), aged 20–35 years (43.6%), had completed senior high school (42.8%), and were self-employed (38.3%). The majority had participated in the Free Health Check Program (PKG) (72.0%). The largest proportion of respondents came from Karangmalang Primary Health Center (23.1%).

Table 1. Sample Characteristics (n=264)

Characteristics	Category	Frequency (n)	Percentage (%)
Sex	Male	87	33.0
	Female	177	67.0
Age	<20 years	32	12.1
	20–35 years	115	43.6
	35–50 years	75	28.4
	51–65 years	33	12.5
	>65 years	9	3.4
	No formal education	9	3.4
Highest Educational Attainment	Primary school	22	8.3
	Junior high school	55	20.8
	Senior high school	113	42.8
	Diploma/Bachelor's degree or higher	65	24.6
Occupation	Unemployed	56	21.2
	Student	34	12.9
	Self-employed	101	38.3
	Farmer/Labourer	24	9.1
	Civil servant / Military / Police	17	6.4
	Others	32	12.1
Participating in the Free Health Check Program (PKG)	Yes	190	72.0
	No	74	28.0
Primary Health Centers	Jenar	30	11.4
	Gondang	49	18.6
	Sambirejo	43	16.3
	Karangmalang	61	23.1
	Plupuh	30	11.4
	Ngrampal	51	19.3

2. Univariat Analysis

Univariate Analysis: Table 2 shows the distribution of predisposing, enabling, and reinforcing factors. Most respondents had good knowledge (94.3%), positive attitudes (92.4%), and high motivation (92.8%). In

terms of enabling factors, the majority of respondents reported adequate facilities (88.6%), easy access to health services (92.0%), and sufficient service information (92.4%). Regarding reinforcing factors,

most respondents had strong social support (87.9%).

Table 2. Distribution of Predisposing, Enabling, and Reinforcing Factors (n=264)

Factors	Variables	Categories	Frequency (n)	Percentage (%)
Predisposing	Knowledge	Poor (<60%)	15	5.7
		Good (≥60%)	249	94.3
	Attitude	Negative (<50%)	20	7.6
		Positive (≥50%)	244	92.4
	Motivation	Low (<50%)	19	7.2
High (≥50%)		245	92.8	
Enabling	Facilities and Infrastructure	Inadequate (<50%)	30	11.4
		Adequate (≥50%)	234	88.6
	Accessibility	Difficult (<50%)	21	8.0
		Easy (≥50%)	243	92.0
	Reinforcing	Service Information	Poor (<50%)	20
Social Support		Good (≥50%)	244	92.4
		Low (<50%)	32	12.1
		High (≥50%)	232	87.9

3. Bivariate Analysis

Knowledge (OR= 3.86; 95% CI=1.37 to 8.41; p=0.005), attitude (OR= 3.92; 95% CI= 1.64 to 8.53; p=0.001), facilities (OR= 2.84; 95% CI=1.10 to 5.86; p=0.017), ease of access (OR=4.36; 95% CI=1.96 to 9.68; p<0.001), service information (OR=4.96;

95% CI=2.15 to 11.41; p<0.001), and social support (OR=9.07; 95% CI=3.95 to 20.82; p<0.001) were significantly associated with community participation. Motivation was not significantly associated with participation (OR=2.11; 95% CI=0.80 to 5.54; p=0.079).

Table 3. Bivariate Analysis of Factors Associated with Community Participation in the Free Health Screening Program (PKG)

Variables	OR	95% CI		p
		Lower limit	Upper limit	
Knowledge	3.86	1.37	8.41	0.005
Attitude	3.92	1.64	8.53	0.001
Motivation	2.11	0.80	5.54	0.079
Facilities	2.84	1.10	5.86	0.017
Access	4.36	1.96	9.68	<0.001
Service Information	4.96	2.15	11.41	<0.001
Social Support	9.07	3.95	20.82	<0.001

4. Multivariate analysis

Ease of access (OR=4.40; 95% CI=1.41 to 13.72; p=0.011) and social support (OR= 22.03; 95% CI=4.59 to 105.74; p<0.001) were significantly associated with community participation in the PKG Program. Respondents with strong social support had higher participation compared to those

with low social support (OR=22.03; 95% CI=4.59 to 105.74; p<0.001). Social support was the most dominant factor influencing participation. Other variables, including knowledge, attitude, facilities, and service information, were not statistically significant after adjustment.

Table 4. Multivariate Analysis of Factors Affecting Community Participation in the Free Health Screening Program (PKG)

Variables	OR	95% CI		p
		Lower Limit	Upper Limit	
Knowledge	0.52	0.05	4.96	0.582
Attitude	0.60	0.02	108.93	0.814
Facilities	0.02	0.01	1.39	0.070
Access	4.40	1.41	13.72	0.011
Service Information	7.34	0.66	81.88	0.104
Social Support	22.03	4.59	105.74	<0.001
N Observation= 264				
Adj R- Squared= 0.140				
P < 0.001				

DISCUSSION

Description of community participation in the free health screening program

This study found that community participation in the Free Health Screening Program was relatively high, with 72.0% of respondents participating in the program. This finding indicates that the PKG Program has been accepted as an important preventive health service and reflects increasing public awareness of early disease detection. However, nearly one-third of eligible individuals had not participated, suggesting that barriers to participation remain. According to the PRECEDE–PROCEED model, community participation is influenced by the interaction of predisposing, enabling, and reinforcing factors rather than by individual factors alone (Green & Kreuter, 2018; McKenzie et al., 2017). Similar findings were reported by Arulselvan et al. (2024) and Mayasari et al. (2025), who emphasized that successful participation in preventive health programs requires not only community awareness but also supportive environmental and social conditions. Therefore, strategies to improve PKG participation should strengthen both individual readiness and external support systems.

Association between knowledge and community participation in the free health screening program

Knowledge was not significantly associated with community participation. Respondents with better knowledge had 48% lower odds of participating in the PKG than those with poorer knowledge; however, the association was not statistically significant. This finding indicates that knowledge alone may not be sufficient to encourage individuals to utilize preventive health services. Although respondents understood the objectives and benefits of the PKG Program, this knowledge did not necessarily translate into participation. According to the PRECEDE–PROCEED model, knowledge is a predisposing factor that increases awareness but requires enabling and reinforcing factors to produce behavioral change (Green & Kreuter, 2018; McKenzie et al., 2017). This finding differs from Arulselvan et al. (2024) and Gracia et al. (2025), who reported that individuals with better knowledge were more likely to participate in preventive health programs. The difference suggests that participation in the PKG Program is influenced more by contextual factors than by knowledge alone.

Association between attitude and community participation in the free health screening program

Attitude was not significantly associated with community participation. Respondents with a positive attitude had 40% lower odds of participating than those with a less favorable attitude, but the wide confidence interval and the non-significant *p*-value indicate considerable uncertainty in the estimate. Although respondents generally had positive attitudes toward preventive health examinations, these perceptions did not independently influence participation. This finding suggests that favorable attitudes alone are insufficient to overcome practical barriers to utilizing health services. The PRECEDE–PROCEED model explains that attitude functions as a predisposing factor that supports behavioral intention but requires enabling and reinforcing factors before behavior can occur (Green & Kreuter, 2018; Glanz et al., 2016). Similar findings were reported by Crosby and Noar (2021). However, Gracia et al. (2025) found that positive attitudes significantly increased participation when supported by accessible and responsive health services. These findings indicate that interventions should focus not only on improving attitudes but also on reducing barriers to service utilization.

Association between adequate health facilities and community participation in the free health screening program

The availability of facilities also showed no significant association with community participation. Although the association did not reach conventional statistical significance, adequate health facilities may still contribute to community participation by improving service quality and increasing public confidence in health services. Within the PRECEDE–PROCEED model, facilities are categorized as enabling factors that faci-

litate the utilization of healthcare services (Green & Kreuter, 2018). Similar findings were reported by Fitri et al. (2024), who highlighted the importance of environmental support in shaping health behavior. The World Health Organization (2020) also emphasizes that adequate infrastructure is essential for improving access to preventive health services. Therefore, maintaining the availability and quality of health facilities remains important to support the implementation of the PKG Program.

Association between access to the health service and community participation in the free health screening program

Access was significantly associated with community participation. Respondents with good access were 4.40 times more likely to participate in the PKG than those with poor access. This finding indicates that easier access to health services increases the likelihood of participation in the screening program. Respondents with easier access to health services were more likely to participate in the PKG Program than those experiencing access barriers. This finding indicates that geographical distance, transportation, travel time, and service availability continue to influence the utilization of preventive health services. Similar findings were reported by Anggraini (2023), Ipa et al. (2023), and Idris et al. (2025), who found that easier access increased healthcare utilization in Indonesia. According to the PRECEDE–PROCEED model, accessibility is an enabling factor that allows individuals to translate their intention into actual health behavior (Green & Kreuter, 2018). Improving service accessibility should therefore remain a priority for increasing PKG participation.

Association between health service information and community participation in the free health screening program

Service information was positively associated with participation, with respondents receiving adequate information having 7.34 times higher odds of participating than those receiving inadequate information. However, the association was not statistically significant after adjustment for other variables. Although information is essential for increasing awareness of the PKG Program, information alone may not be sufficient to encourage participation. This finding suggests that individuals require not only information but also accessible services and supportive environments before deciding to participate. Similar findings were reported by Idris et al. (2025), who emphasized that information is more effective when accompanied by accessible healthcare services. Green and Kreuter (2018) and Glanz et al. (2016) also explain that information primarily functions as a predisposing factor and should be supported by enabling and reinforcing factors to produce behavioral change. Therefore, dissemination of PKG information should be integrated with strategies that improve service accessibility and community engagement.

Association between social support and community participation in the free health screening program

Social support was the strongest determinant of community participation in the PKG. Respondents with good social support were 22.03 times more likely to participate than those with poor social support. This finding indicates that encouragement from family members, friends, community leaders, and health cadres plays an important role in influencing decisions to participate in preventive health services. Similar findings were reported by Khami et al. (20-

20), Tu et al. (2024), and Yücekaya et al. (2025), who found that social support consistently increases participation in health-promoting behaviors and preventive health programs. According to the PRECEDE-PROCEED model, social support is classified as a reinforcing factor that strengthens and maintains positive health behaviors (Green & Kreuter, 2018). These findings suggest that increasing PKG participation requires greater involvement of families, community leaders, and health cadres to provide continuous encouragement and support.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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