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The relationship between mental health knowledge and stigma toward mental disorders

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ABSTRACT

Stigma discourages help-seeking, and mental health knowledge, the knowledge component of mental health literacy, has been proposed as a correlate, although findings are inconsistent and evidence from rural Indonesian communities is limited. A preliminary study in Sengon Village found basic understanding coexisting with stigmatizing views. This study examined the relationship between mental health knowledge and stigma toward mental disorders (public stigma) among adult residents of Sengon Village, Karanganyar. A cross-sectional correlational design was used with 70 respondents drawn by proportional random sampling from 85 registered households (Slovin formula, 5% margin of error). The adapted Mental Health Knowledge Questionnaire (27 items) and Peer Mental Illness Stigmatization Scale (15 items) were valid and reliable in a pilot of 50 respondents (Cronbach's alpha 0.918 and 0.874), and data were analyzed using Spearman's rho. Most respondents had a high level of mental health knowledge (63 respondents; 90.0%) and a moderate level of stigma (57 respondents; 81.4%). Knowledge and stigma were negatively correlated, weakly but significantly (r = -0.282; 95% CI -0.488 to -0.046; p = 0.018). This association does not show that greater knowledge reduces stigma and applies only to the studied community; education-based efforts require further evaluation.

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INTRODUCTION

According to the World Health Organization (2022), mental health is a state in which individuals are able to think clearly, manage their emotions, build positive relationships, and cope with life stressors. Mental health is shaped by biological, psychological, and social factors (Kirkbride et al., 2024), and the social environment influences how communities respond to people with mental disorders.

Communities play a role in shaping perceptions of and attitudes toward individuals with mental disorders. However, stigma remains a problem (Walsh & Foster, 2024), manifesting as

stereotypes, prejudice, and discrimination that reduce social support and hinder help-seeking (Pescosolido, 2024). Public stigma encompasses negative views and behaviors among community members (Falasifah & Syafitri, 2022), whereas self-stigma occurs when individuals internalize such stigma (Dubreucq et al., 2021). This study addresses public stigma only, and "stigma" below refers to public stigma.

Mental health literacy is the ability to obtain, understand, evaluate, and apply mental health information (Siregar et al., 2024); mental health knowledge is its core knowledge component and the construct measured here. Limited knowledge can lead to misunderstanding, stigma, and discrimination (Y. Zhang et al., 2025), whereas good knowledge is associated with more positive attitudes (Rahmani et al., 2024) and lower stigma (Soria-Martínez et al., 2024). Expecting lower stigma with greater knowledge rests on the premise that accurate information corrects the misconceptions behind stereotypes and fear; this is a hypothesis rather than an established causal pathway, because findings are mixed.

Stigma is multifactorial, shaped by culture, education, personal or family experience, exposure to information, and the social environment; these factors are theoretical background and were not measured here. Traditional beliefs may attribute mental disorders to supernatural forces, moral punishment, or personal weakness (Subu et al., 2022), and sensationalized media representations further reinforce prejudice (H. Zhang & Firdaus, 2024).

Stigma is a barrier to the use of mental health services (Gao et al., 2024). Fear of negative judgment, exclusion, and being perceived as weak also hinders help-seeking (Biladina, 2021). In addition, self-stigma reinforces these barriers (Hawke et al., 2025) and is associated with lower use of mental health services among adults (Alqahtani & Pringle, 2024). People living with HIV likewise described stigma as an adaptive challenge in which community support was an important resource (Sandhyagandhi et al., 2026). The need for help that is obstructed by stigma is evident in Indonesia: mild to severe anxiety and depression were found in 26.6% and 30.5% of respondents in the general population, respectively (Windarwati et al., 2023).

A preliminary study on June 6, 2026, used informal interviews with four residents of Sengon Village, Karanganyar District, Karanganyar Regency, Central Java Province. Its small, non-random, self-reported data were exploratory and cannot estimate prevalence. It showed that most residents understood the basics of mental health and mental disorders as conditions that affect thoughts, emotions, and behavior. However, some still regarded individuals with mental disorders as dangerous, shameful, and difficult to manage. Research in Indonesia indicates that stigma remains strong owing to limited understanding of mental health and appears as negative attitudes, social rejection, and discrimination (Subu et al., 2024).

Evidence on this relationship is inconsistent. For example, a study across 17 countries found that the relationship between mental health knowledge and public stigma varied by country and type of mental disorder (Pescosolido, 2024). A study of nursing students at Universitas Muhammadiyah Surakarta likewise showed that high mental health literacy was not accompanied by a significant relationship with stigma toward mental illness ($p = 0.584$) (Nisa & Widodo, 2025). In contrast, significant negative relationships were reported among community members elsewhere in Indonesia (Rahmani et al., 2024; Zaman et al., 2024). Because these studies differ in population and instruments, their results cannot simply be transferred to another community, and culturally rooted beliefs about mental illness make rural communities worth examining separately. To the authors' knowledge, quantitative evidence from rural villages in Central Java remains scarce, which is the research gap addressed here.

Sengon Village (RW 08, RT 02 and 03) was selected because the preliminary study showed basic understanding coexisting with stigmatizing views, because it is a rural community with limited access to information and services, and because its small, defined population (85 households) allowed probability sampling. The study does not claim novelty from its location alone; it contributes a transparently reported estimate, with a confidence interval, of the direction

and strength of the association between mental health knowledge and stigma, a test of whether high knowledge accompanies low stigma where knowledge is high, and local data for planning community education. The objectives were to describe the levels of mental health knowledge and public stigma and to examine their correlation (H_0: $\rho = 0$; H_1: $\rho \neq 0$; two-tailed, $\alpha = 0.05$). Respondent characteristics are descriptive only.

RESEARCH METHODS

Study Design and Setting

This study employed a quantitative correlational approach with a cross-sectional design, in which data were collected once, without repeated measurements or interventions, to identify the relationship between mental health knowledge and stigma toward mental disorders among residents of Sengon Village. This design estimates the association between two variables at one time point and cannot establish temporal order or causality. The study was conducted in Community Unit (RW) 08, Neighborhood Units (RT) 02 and 03, Sengon Gayamdompo Village, Karanganyar District, Karanganyar Regency, which has 85 registered family cards (kartu keluarga, KK). Data were collected from August to September 2026.

Population, Sample, and Eligibility Criteria

The population comprised the 85 households (386 residents) registered in the two RT, and the household register served as the sampling frame. The sampling unit was the household, with one adult respondent per household. The sample size was calculated using the Slovin formula, $n = N / (1 + N \cdot e^2) = 85 / (1 + 85 \times 0.05^2) = 70.1$, rounded to 70 respondents (5% margin of error). A sensitivity check shows that $n = 70$ gives 80% power ($\alpha = 0.05$, two-tailed) to detect $|\rho| \approx 0.33$, so weaker associations may go undetected. Proportional random sampling allocated respondents to each RT by $n = (X / N) \times S$, where X is the RT's number of households, $N = 85$, and $S = 70$ (RT 02: 47 households, 39 respondents; RT 03: 38 households, 31 respondents). Households were drawn by lottery from each RT's household register, and the selected households were then visited.

The inclusion criteria were: (a) residing in Sengon Village and registered as a permanent resident; (b) male or female; (c) aged ≥18 years and able to complete the questionnaire independently; and (d) willing to participate and giving written informed consent. The exclusion criteria were: (a) could not be reached during data collection after visits made according to the schedule; (b) refused or withdrew; (c) returned an incomplete questionnaire; (d) had a severe communication disorder or a health condition that prevented completion; and (e) reported a history of severe mental disorder (self-report), such as schizophrenia or bipolar disorder. Criteria (a) to (d) protected voluntary participation and data validity, and criterion (e) focused the study on stigma held by the general community, because people with lived experience may hold experience-based attitudes or self-stigma; this history was not clinically verified, and no candidate was excluded or replaced, since all 70 respondents met the criteria.

Data Collection and Instruments

Primary data were obtained through a respondent characteristics sheet (age, sex, highest level of education, occupation, and religion) and two questionnaires (Koo & Yang, 2025). The paper-based questionnaires were completed during home visits and collected by the researcher. Respondents completed the questionnaires independently; when they had difficulty reading or understanding a question, the researcher read or explained it aloud without guiding the answer.

Mental health knowledge was measured using the Mental Health Knowledge Questionnaire (MHKQ), adapted from the instrument developed by Mahardika et al. (2021) and modified to fit the respondents' characteristics, the context, and the study objectives. The instrument consists of 27 questions with Yes/No answers. Stigma was measured using the Peer Mental Illness Stigmatization Scale (PMISS), a self-report instrument for assessing stigma toward individuals with mental disorders (Lesmana & Chung, 2025), which was adapted from the same

instrument and consists of 15 Yes/No statements. Both used dichotomous responses scored on a Guttman scale. For the MHKQ, a correct answer scored 1 (range 0–27; higher scores mean greater knowledge), and "No" is the correct answer for 12 negatively worded items (items 3, 5, 8, 10, 11, 14, 16, 18, 19, 20, 22, and 27), while "Yes" was scored 0. For the PMISS, a stigmatizing response scored 1 (range 0–15; higher scores mean higher stigma); all 15 statements are worded in the stigmatizing direction, so none was reverse-scored. The MHKQ was categorized as low (0–9), moderate (10–18), and high (19–27); the PMISS was categorized as low (0–5), moderate (6–10), and high (≥11). These equal-interval categories are descriptive, not clinical cut-offs, and the correlation analysis used total scores. Both variables were measured on an ordinal scale.

The 50 pilot respondents were fellow students and residents near the researcher's home, selected to match the study criteria, and were not part of the main sample. Validity testing on 50 respondents used an r table value of 0.279 (item–total Pearson correlation, uncorrected; listwise deletion, no cases excluded). All 27 MHKQ items had calculated r values of 0.437–0.697 with significance values of 0.000–0.002 (<0.05), while the 15 PMISS items had calculated r values of 0.455–0.687 with significance values <0.05. All items were declared valid (Table 1). Based on a Cronbach's alpha threshold of 0.60, the reliability of the MHKQ was 0.918 and that of the PMISS was 0.874; thus, both instruments were declared reliable (both also exceed 0.70; alpha equals KR-20 for dichotomous items).

Table 1. Item-level validity (item–total Pearson r; r table = 0.279, n = 50) and reliability of the MHKQ and PMISS; all items valid, Cronbach's α = 0.918 (MHKQ) and 0.874 (PMISS)

Item	1	2	3	4	5	6	7	8	9	10
MHKQ, r	0.633	0.585	0.696	0.536	0.503	0.513	0.616	0.692	0.630	0.626
Item	11	12	13	14	15	16	17	18	19	20
MHKQ, r	0.632	0.539	0.578	0.456	0.486	0.542	0.562	0.462	0.572	0.502
Item	21	22	23	24	25	26	27			
MHKQ, r	0.660	0.697	0.437	0.557	0.541	0.515	0.477			
Item	1	2	3	4	5	6	7	8	9	10
PMISS, r	0.669	0.679	0.635	0.578	0.533	0.643	0.569	0.670	0.511	0.630
Item	11	12	13	14	15					
PMISS, r	0.560	0.554	0.644	0.687	0.455					

Data Analysis

The Shapiro–Wilk test was used to assess the normality of the data. Subsequently, univariate analysis was conducted to describe the frequency distribution and percentages of respondent characteristics, the level of mental health knowledge, and the level of stigma toward mental disorders. Bivariate analysis used Spearman's rank correlation (Spearman's rho) to examine the relationship between mental health knowledge and stigma toward mental disorders, because one of the variables was not normally distributed. Spearman's rho also suits sums of dichotomous items that are ordinal in nature, and it assesses monotonic association without assuming normality. The correlation coefficient (r) is reported with its 95% confidence interval (Fisher z transformation, Bonett–Wright standard error), exact p-value, and n; $|r| < 0.30$ was interpreted as weak. Only complete questionnaires were analyzed, so no missing data were imputed. Analyses used IBM SPSS Statistics version 20. Results are interpreted as association only, without causal inference or adjustment for confounders.

Ethical Considerations

Ethical clearance was obtained from the Health Research Ethics Committee of Universitas Muhammadiyah Surakarta (No. 6498/B.1/KEPK-FKUMS/VII/2026). Respondents received an explanation of the aims and procedures and confirmed voluntary participation, gave written informed consent by completing a consent form before data collection, could withdraw at any time,

and were identified by codes rather than names; data were used only for academic purposes and are reported in aggregate.

RESULTS AND DISCUSSION

Description of the Research Site

The area has a population of 386 people belonging to 85 households and covers approximately 770,000 m². The available health facilities are one integrated health post (posyandu) and access to the Karanganyar District community health center (puskesmas), located approximately 3 km from the study site.

Respondent Characteristics

A total of 70 respondents participated in this study and all returned complete questionnaires. The respondents' characteristics are presented in Table 2.

Table 2. Distribution of respondent characteristics (n=70)

Characteristic	Frequency (n)	Percentage (%)
Age		
20–25 years	1	1.4
26–35 years	11	15.7
36–45 years	25	35.7
46–55 years	22	31.4
56–65 years	11	15.7
Sex		
Male	29	41.4
Female	41	58.6
Highest level of education		
Elementary school	12	17.1
Junior high school	19	27.1
Senior/vocational high school	37	52.9
Bachelor's degree	2	2.9
Occupation		
Housewife	25	35.7
Farmer	13	18.6
Laborer	7	10.0
Trader	6	8.6
Private employee	5	7.1
Self-employed	5	7.1
Domestic worker	2	2.9
Staff member	2	2.9
Others (civil servant, cashier, construction worker, nurse, accounting staff)	5	7.1
Religion		
Islam	70	100.0
Total	70	100.0

Based on Table 2, most respondents were in the 36–45 age group (25 respondents; 35.7%), were female (41 respondents; 58.6%), had completed senior or vocational high school as their highest level of education (37 respondents; 52.9%), and worked as housewives (25 respondents; 35.7%). All respondents were Muslim (100.0%). All respondents were aged ≥20 years, consistent with the inclusion criterion of ≥18 years, and occupations held by one respondent each are combined as "Others".

Levels of Mental Health Knowledge and Stigma Toward Mental Disorders

The level of mental health knowledge was measured using the MHKQ (27 questions), and stigma toward mental disorders was measured using the PMISS (15 statements) among 70 respondents. The scores of both variables were categorized as low, moderate, and high. The distribution of the levels of mental health knowledge and stigma toward mental disorders is presented in Table 3.

Table 3. Distribution of the levels of mental health knowledge and stigma toward mental disorders (n=70)

Variable and category	Frequency (n)	Percentage (%)
Mental health knowledge		
Low	1	1.4
Moderate	6	8.6
High	63	90.0
Stigma toward mental disorders		
Low	9	12.9
Moderate	57	81.4
High	4	5.7

Based on Table 3, 63 respondents (90.0%) had a high level of mental health knowledge, 6 respondents (8.6%) a moderate level, and 1 respondent (1.4%) a low level. For stigma toward mental disorders, 57 respondents (81.4%) were in the moderate category, 9 respondents (12.9%) in the low category, and 4 respondents (5.7%) in the high category. Score distributions: MHKQ mean 21.79 (SD 3.27), median 22, range 9–27; PMISS mean 7.74 (SD 1.93), median 8, range 2–12.

Relationship Between Mental Health Knowledge and Stigma Toward Mental Disorders

The Shapiro–Wilk normality test showed that the mental health knowledge data were not normally distributed, whereas the data on stigma toward mental disorders were normally distributed (Table 4). Because one of the variables was not normally distributed, bivariate analysis was performed using Spearman's rho (Table 5).

Table 4. Results of the shapiro–wilk normality test (n=70)

Variable	Shapiro-Wilk	Significance	Remarks
Mental health knowledge	0.937	0.002	Not normal
Stigma toward mental disorders	0.968	0.071	Normal

Table 4 shows that knowledge scores were not normally distributed (W = 0.937, p = 0.002), whereas stigma scores were (W = 0.968, p = 0.071).

Table 5. Results of spearman's rho correlation test (n=70)

Variable	Correlation coefficient (r) [95% CI]	Sig. (2-tailed)
Mental health knowledge and stigma toward mental disorders	-0.282 [-0.488 to -0.046]	0.018

Based on Table 5, Spearman's rho test on 70 respondents yielded a correlation coefficient of -0.282 (95% CI -0.488 to -0.046) with a significance value of 0.018. Because p = 0.018 < 0.05, there was a statistically significant relationship between mental health knowledge and stigma toward mental disorders among the community in Sengon Village. The correlation coefficient of -0.282 indicates a relationship with a negative direction and weak (low) strength, meaning that higher knowledge scores tended to accompany lower stigma scores; the confidence interval is wide, so the true association may be very weak, and it does not imply that knowledge causes lower stigma. Thus, H_0 was rejected and H_1 was accepted.

Respondent Characteristics

Respondents were predominantly adults aged 36–45 years, mostly female, and mostly senior or vocational high school graduates. Simões de Almeida et al. (2023) and Goda et al. (2025) linked knowledge to age, sex, and education, and Fleary et al. (2022) linked health literacy to stigma, but this study did not analyze knowledge by respondent characteristics, so these describe the sample only. All respondents were Muslim, so the role of religion cannot be assessed here, although Tanaka et al. (2025) showed that religious and cultural backgrounds shape how people understand depression.

Level of Mental Health Knowledge

The level of mental health knowledge among the community in Sengon Village tended to be high (90.0%). However, a high knowledge score does not necessarily indicate that respondents understand all aspects of mental health well. Marthoenis et al. (2026) found persistent misconceptions about the causes and management of mental disorders among female community health workers in several Indonesian villages. Measurement features may also inflate scores: Yes/No items allow guessing and acquiescence, equal-interval cut-offs classify 19 of 27 points as high, and social desirability may play a role. The non-normal distribution suggests a possible ceiling effect that restricts variability and can attenuate the correlation with stigma.

Level of Stigma Toward Mental Disorders

Stigma toward mental disorders among the community in Sengon Village was dominated by the moderate category (81.4%). This finding indicates that stigma is still present in community views of individuals with mental disorders, although the majority of respondents were not in the high-stigma category. Stigma toward people with schizophrenia in Indonesia is related to prevailing social norms, culture, and religious beliefs (Salsabila et al., 2024), and Hu et al. (2024) described stigma as formed through cultural values, beliefs, language, and social interaction, so views of people with mental disorders reflect community values as well as information. The moderate band is wide (6–10 of 15 points) and reflects equal-interval cut-offs, not a clinical threshold, so it indicates relative position within the PMISS range and not the prevalence of clinically relevant stigma; under-reporting through social desirability is also possible.

Why High Knowledge Coexists with Moderate Stigma

Several non-exclusive explanations are plausible for 90.0% high knowledge alongside 81.4% moderate stigma. Knowledge and stigma are different constructs: knowing facts does not remove emotional reactions, social distance, or behavioral intentions (Pescosolido, 2024; Grosselli et al., 2025). Culture and religion shape how mental disorders are explained (Subu et al., 2022), and family experience, education, and media exposure may influence stigma independently of knowledge (H. Zhang & Firdaus, 2024). These factors were not measured, so they are hypotheses for future testing. Finally, the measurement features described above can make high knowledge and moderate stigma co-occur without a substantive contradiction.

Relationship Between Mental Health Knowledge and Stigma Toward Mental Disorders

The Spearman's rank test result ($r = -0.282$; 95% CI -0.488 to -0.046; $p = 0.018$) indicated a significant negative relationship with weak correlation strength: higher knowledge scores tended to accompany lower stigma scores. A value of 0.282 is classified as a low (weak) correlation, meaning that the relationship exists but is not strong, and knowledge scores share only about 8% of the rank variance in stigma scores ($r^2 \approx 0.08$). The interpretation is limited to association: the cross-sectional design cannot show whether knowledge precedes lower stigma, whether people with less stigma seek more information, or whether a third factor such as education or personal contact explains both. This finding is consistent with Rahmani et al. (2024), who reported a significant negative relationship between mental health knowledge and stigma toward mental disorders ($r = -0.469$) among 258 residents of one neighborhood in Sidoarjo, and with Zaman et al. (2024), who

found a significant relationship among 52 residents of Pante Gajah Village. By contrast, Nisa and Widodo (2025) found no significant relationship among nursing students, and Pescosolido (2024) reported variation across 17 countries. These studies differ in population, instruments, sampling, and analysis, so their coefficients should not be compared directly.

Thus, the weak negative relationship among the community in Sengon Village does not mean that knowledge is unimportant; rather, it indicates that knowledge alone is not sufficient to explain the full variation in stigma. Age, sex, education, occupation, and prior contact with people with mental disorders may relate to both variables, and because only a bivariate analysis was conducted, the observed correlation may partly reflect them.

Practical Implications

Community mental health education may be one component of stigma reduction, but not a sufficient one: it was reported to improve understanding and empathy in a West Bandung village (Mulyani & Hardiyanti, 2025), yet here the association was weak and cross-sectional, so there is no evidence that education will lower stigma in Sengon Village. Village authorities, health workers, and community health volunteers could pair education with attitude-focused approaches such as discussing local beliefs and contact with people with lived experience, and should evaluate programs with controlled designs before judging effectiveness, as in a randomized trial of a peer-counselor application among adolescents in Banda Aceh (Septiana et al., 2026).

Limitations of the Study

This study has several limitations. The cross-sectional design cannot determine temporal order or causality. Both variables were self-reported on adapted Yes/No questionnaires tested in only 50 respondents recruited from the researcher's acquaintances and neighbors, which are susceptible to social desirability, guessing, and interviewer effects when items were read aloud, and the equal-interval categories were not externally validated. Selection bias is possible: the sample came from one RW (RT 02 and 03), not all respondents could be met despite repeat visits, and people with a history of severe mental disorder were excluded. The sample of 70 limits power and precision, as the wide confidence interval shows, a possible ceiling effect may have attenuated the correlation, and confounders were not adjusted for. All respondents were Muslim residents of one rural community, so the findings cannot be generalized to other populations.

CONCLUSION

The level of mental health knowledge among respondents was most often high (63 respondents; 90.0%), and the level of stigma toward mental disorders was most often moderate (57 respondents; 81.4%). There was a weak, negative, yet statistically significant correlation between mental health knowledge and stigma toward mental disorders ($r = -0.282$; 95% CI -0.488 to -0.046; $p = 0.018$; $n = 70$). This indicates association only, not causality; it applies only to the studied population in RW 08 (RT 02 and 03), and reducing stigma likely requires attention to other factors such as culture, education, personal experience, and exposure to information. Limitations include the cross-sectional design, self-reported adapted instruments, a small single-site sample, and unadjusted confounding.

Recommendations. Village authorities, health workers, and community health volunteers may consider mental health education combined with attitude-focused activities, while recognizing that the effectiveness of such programs here is untested and should be evaluated. Future research should use longitudinal or quasi-experimental designs, larger multi-site samples, instruments with documented factor-analytic evidence and less ceiling-prone knowledge items, and multivariable analysis including education, personal or family experience, information sources, and cultural beliefs.

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