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ORIGINAL

Effect of Cultural Communication Strategy in Preventing Child Marriage in a Region with Strong Cultural Resistance A Quasi-Experimental Study

Efecto De La Estrategia De Comunicación Cultural En La Prevención Del Matrimonio Infantil En Una Región Con Fuerte Resistencia Cultural Un Estudio Cuasi Experimental

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ABSTRACT

Introduction: child marriage persists due to strong cultural values, social norms, and ethnic influences, compounded by inadequate strategic cultural communication. This study aims to analyze the effectiveness of cultural communication strategies in enhancing knowledge, attitudes, and self-efficacy in preventing child marriage in a region characterized by strong cultural resistance.
Method: this quasi-experimental study involved 200 Bugis residents in Parepare, South Sulawesi, Indonesia (December 2023-January 2024), using a purposive sampling. Participants were divided into treatment (KP) and control (KK) groups based on previous exposure to child marriage prevention assistance. Inclusion criteria: families with adolescents, living for ≥ 10 years, and willing to participate. KP received educational modules and family mentoring, while KK only received mentoring. Pretest and post-test (after 12 weeks) measured knowledge, attitude, and self-efficacy. Data were analyzed using Kolmogorov-Smirnov, Mann-Whitney U, and Wilcoxon tests.
Results: the intervention group demonstrated significant improvements in knowledge, attitudes, self-efficacy, and cultural communication compared to the control group at both post-intervention measurements ($p < 0,005$). Baseline measurements showed no significant differences. Within the intervention group, Wilcoxon tests confirmed significant improvements from pre-test to both post-tests ($p < 0,001$). The control group showed mixed results, with some variables improving initially but later declining or remaining unchanged, highlighting the intervention's effectiveness.
Conclusion: cultural communication-based interventions with educational modules and mentoring effectively enhance family knowledge, attitudes, and self-efficacy in preventing child marriage, with a sustained long-term impact.

Keywords: Child Marriage; Adolescent; Interpersonal Communication; Reproductive Health; Social Change; Family.

RESUMEN

Introducción: el matrimonio infantil persiste debido a fuertes valores culturales, normas sociales e influencias étnicas, agravado por una comunicación cultural estratégica inadecuada. Este estudio tiene como objetivo analizar la efectividad de las estrategias de comunicación cultural para mejorar el conocimiento, las actitudes y la autoeficacia en la prevención del matrimonio infantil en una región caracterizada por una fuerte resistencia cultural.
Método: este estudio cuasi-experimental involucró a 200 residentes Bugis en Parepare, Sulawesi del Sur, Indonesia (diciembre 2023-enero 2024), utilizando un muestreo intencional. Los participantes se dividieron en grupo de tratamiento (KP) y control (KK) según su exposición previa a asistencia para la prevención del matrimonio infantil. Criterios de inclusión: familias con adolescentes, residencia ≥ 10 años y disposición a participar. KP recibió módulos educativos y mentoría familiar, mientras que KK solo recibió mentoría. Se aplicaron pretest y postest (tras 12 semanas) para medir conocimiento, actitud y autoeficacia. Los datos se analizaron con pruebas de Kolmogorov-Smirnov, Mann-Whitney U y Wilcoxon.
Resultados: el grupo de intervención mostró mejoras significativas en conocimiento, actitudes, autoeficacia y comunicación cultural en comparación con el grupo control en ambas mediciones postintervención ($p < 0,005$). Las mediciones iniciales no mostraron diferencias significativas. Dentro del grupo de intervención, las pruebas de Wilcoxon confirmaron mejoras significativas del pretest a ambos postests ($p < 0,001$). El grupo control mostró resultados mixtos, con algunas variables mejorando inicialmente pero luego disminuyendo o sin cambios, resaltando la efectividad de la intervención.
Conclusión: las intervenciones basadas en comunicación cultural, con módulos educativos y mentoría, mejoran efectivamente el conocimiento, las actitudes y la autoeficacia familiar en la prevención del matrimonio infantil, con un impacto sostenido a largo plazo.

Palabras clave: Matrimonio Infantil; Adolescente; Comunicación Interpersonal; Salud Reproductiva; Cambio Social; Familia.

INTRODUCTION

Child marriage remains a pressing global challenge, particularly in developing nations such as Indonesia. This practice not only robs children of their childhood but also profoundly impacts their health,[1] education, and socioeconomic prospects.[2-4] Sub-Saharan Africa reports the highest global prevalence, with 33 % of girls married as minors, while South Asia follows at 45 %. In Latin America and the Caribbean, the rate stands at 23 %.[5]

In Indonesia, rigid cultural norms,[6] entrenched poverty, and limited access to education and healthcare[7] drive high child marriage rates. In many cases, early marriage is even linked to religious beliefs[8] and the family's economic needs,[9] where parents play a central role in decision-making. Girls from poor families are often victims of child marriage to reduce the family's economic burden.[9] The consequences are severe: child brides face elevated risks of preterm births and low birth weight.[10,11] Child marriage prevalence in Indonesia declined slowly from 14,67 % (2008) to 11,21 % (2018), with 1 in 9 women aged 20–24 marrying before 18.[12]

Crises, conflicts, and social norms may also drive families to marry off their daughters as a means of survival under difficult conditions.[7] However, mentoring programs that provide support, education, and guidance for children and families, coupled with women's empowerment, can help break the chains of poverty and gender inequality[7] without sacrificing the children's futures.

Although the Indonesian government has enacted Law Number 16 of 2019 on Marriage, which sets the minimum marriage age at 19 for both males and females, implementing this regulation faces various challenges at the community level. One of the main challenges is cultural resistance, as local communities often base their decisions on customary practices rather than formal regulations. Parepare, a small town in South Sulawesi, exemplifies this challenge. Known as the Bugis tribe, the community has a strong culture of child marriage. Values in Bugis tradition, such as "siri" (honor) and "pacce" (empathy), greatly influence social life in the community. These values often determine decisions, including those regarding marriage. Although these values have positive aspects, misconceptions about them often lead to cultural resistance, which will only contribute to high rates of child marriage.

Facing such challenges, a locally-based cultural approach becomes one of the strategies to ensure effective policy implementation. A cultural communication strategy is an approach that focuses on integrating local values into the communication process to deliver relevant and acceptable messages to the target audience. Studies

have proven the effectiveness of cultural communication, grounded in a deep understanding of recipients' social and cultural context, and actively involving various parties or key stakeholders such as customary leaders, religious figures, and local communities in child marriage prevention efforts.[13,14,15,16,17]

While prior studies highlight grassroots models involving community and local leaders, research on strategies to counter cultural resistance, particularly in communities with deep-rooted tribal cultures in tribal communities remains sparse. Therefore, this study aims to determine the impact of cultural communication strategies on increasing knowledge, changing attitudes, and increasing family self-reliance in preventing child marriage in Parepare, South Sulawesi, Indonesia, which has strong cultural resistance.

METHOD

Types of Studies: Classification and Approach

This study is a quasi-experimental study with a quantitative approach. The quasi-experimental design was chosen because it was not possible to fully randomize participants into intervention and control groups. This study aims to evaluate the effectiveness of the intervention (cultural communication strategy) on the variables under study.

Population and Sample: Sampling and Analysis Techniques

Population: The target population in this study was families (mothers and adolescent children) in Parepare City.

Sample: The study sample consisted of 200 participants, equally divided into 100 participants in the intervention group (KP) and 100 participants in the control group (KK). Each group consisted of 50 adolescents and 50 mothers.

Sampling Technique: The sampling technique used was purposive sampling. Inclusion criteria include:

- Families with adolescent children aged 10-19 years.
- Both parents are of Bugis ethnicity.
- Have lived in Parepare for at least 10 years.
- Provide informed consent.
- Mothers whose children participated in the child marriage prevention program in Parepare were assigned to the control group (KK), while non-participating mothers were placed in the intervention group (KP).
- Exclusion criteria included: families who were not willing to participate or had moved.
- Sample Size Analysis: Sample size was determined using the paired categorical formula.
- Data Analysis: Data were analyzed using SPSS version 24. The Kolmogorov-Smirnov test was used to test the normality of the data. As the data were not normally distributed, Mann-Whitney and Wilcoxon signed-rank tests were used for analysis. If the data were normally distributed, paired sample t-test was used.

Variables:

Independent Variable: Cultural communication strategy (with or without family assistance).

Dependent Variable:

- Knowledge (about child marriage and its consequences).
- Attitude (towards child marriage).
- Independence (in preventing child marriage)

Operational Definition of Variables:

- Cultural Communication Strategy: Effective planning and delivery of messages from parents to adolescents in preventing child marriage.
- Knowledge: Understanding and perception of child marriage.
- Attitude: Behavior related to child marriage.
- Self-reliance: Belief in one's ability to prevent child marriage.

Measurement Scale:

Variables were measured on an ordinal scale. A score of 60-100 % indicates a favorable/supportive response, while a score of 0-59 % is classified as a moderate/less favorable response.

Data Collection and Sources

Primary Data: Collected from selected participants using instruments designed according to the research objectives. Instruments include a pre-test and post-test to measure knowledge, attitude, and self-reliance.

Secondary Data: Obtained from child marriage records at the Office of Religious Affairs (KUA) of Parepare City (KUA Ujung, Soreang, Bacukiki, and West Bacukiki).

Data Collection Procedure:

- Six enumerators were involved in data collection, with four assigned to the intervention group and two to the control group.
- Before the intervention, enumerators were provided training to ensure complete understanding of the questionnaires, modules, and mentoring activities.
- WhatsApp groups were created for each group to monitor the progress of the intervention and coordinate with participants.
- All participants received a detailed explanation of the research procedures and child marriage prevention module before giving informed consent.
- Baseline data collection (pre-test) was conducted before the intervention.
- The intervention lasted for three months, with weekly monitoring.
- Post-test was conducted one and three months after the intervention to assess long-term effects.
- All surveys were conducted digitally using Kobo Toolbox.

Instrument Validity and Reliability:

- Instruments measuring knowledge, attitude, and self-reliance were built based on scientifically validated theories and existing questionnaires.
- Ajzen's (1991) Theory of Planned Behavior was used to evaluate attitude and self-reliance.
- Indicators for knowledge were developed according to current guidelines and relevant literature, adapted to the research context, and refined through expert content validation.
- A pilot test was conducted with 20 Bugis Parepareans (10 mothers, 10 adolescents) to assess the validity and reliability of the instrument.
- Validity was tested using Pearson's product-moment correlation, and reliability was tested using Cronbach's Alpha.
- All constructs (cultural communication, knowledge, attitude, and independence) were valid (r count > r table) and reliable (Cronbach's Alpha > 0,6).

Ethical standards

This study was approved by the ethics committee of the Faculty of Public Health, Hasanuddin University (approval number: 6490/UN4.14.1/TP.01.02/2023, dated December 20, 2023, protocol number: 41223093038). This study has also obtained permission from the Parepare City Government, specifically from the Office of One-Stop Integrated Services and Investment. All participants provided informed consent before participating in the study.

RESULTS

The characteristics of the participants in this study are presented in Table 1. Based on the demographic data, it appears that female participants dominated, constituting 86 % of the total participants, while males accounted for 14 % of the combined sample (both intervention and control groups). Adolescents were the largest age category in this study (50 % of the total), followed by pre-elderly (25 %). This indicates that the study primarily involved participants from the young to middle-aged groups. Unmarried respondents dominated the sample with a percentage of 50 %, followed by married respondents at 46 %. Respondents with a widow/divorced status comprised only 4 %, showing a very low representation in the sample. There was a good balance in marital status distribution between the intervention and control groups, particularly for the unmarried category.

Many participants (60,5 %) in this sample completed senior high school as their highest educational background. While the treatment group (KP) showed a slightly higher proportion of participants with elementary and junior high school education compared to the control group (KK), these percentages remained relatively small when contrasted with senior high school and university-level attainments. Employment status data revealed that 88,0 % of the total sample were unemployed participants. A comparative analysis between groups showed the KP group had a notably higher proportion of employed individuals (16 %) than the KK group (8 %), though participants with employed status remained a minority overall. This pattern confirms that unemployment was predominant across both groups, with minimal variation between them. Additionally, socioeconomic status analysis indicated that 81,0 % of participants fell into the low socioeconomic category.

Mann-Whitney test results

The results of the Mann-Whitney test showed significant differences in the improvement of knowledge, attitudes, self-efficacy, and cultural communication between the intervention and control groups in Post 1 and Post 2 measurements. In the knowledge variable, there was no significant difference between the intervention and control groups in the pretest phase (p=0,916), but the difference became very significant in Post 1 (p=0,000) and Post 2 (p=0,000) with an increase in mean from 12,24 ± 3,88 to 13,66 ± 4,56 in the intervention group. The

same was seen in the attitude variable, where there was no significant difference in the pretest phase (p=0,196), but the intervention group showed significant improvement in Post 1 (p=0,003) and Post 2 (p=0,000), with the mean increasing from 29,51 ± 7,23 to 39,19 ± 9,37. For self-efficacy, there was no initial difference between groups (p=0,994), but the intervention had a significant effect on Post 1 (p=0,017) and Post 2 (p=0,000), with the mean increasing from 35,91 ± 6,04 to 37,40 ± 7,24. Finally, cultural communication also showed a highly significant difference at Post 2 (p=0,000) despite no difference at the baseline (p=0,245) and Post 1 (p=0,800). Overall, these results show that the intervention significantly improved participants' knowledge, attitude, self-efficacy, and cultural communication compared to the group that did not receive a similar intervention.

Table 1. Characteristics of participants (N=200)

Variables	n (%)
Gender	
Male	28 (14,0)
Female	172 (82,0)
Age group	
Adolescents (10-19 years)	100 (50,0)
Adults (20-44 years)	36 (18,0)
Pre-elderly (45-59 years)	50 (25,0)
Elderly (>60 years)	14 (7,0)
Marital Status	
Unmarried	100 (50,0)
Married	92 (46,0)
Widowed/Widower	8 (4,0)
Employment Status	
Employed	24 (12,0)
Unemployed	176 (88,0)
Educational Background	
Primary school	14 (7,0)
Junior high school	18 (9,0)
Senior high school	121 (60,5)
Bachelor	47 (23,5)
Economic Status	
High	38 (19,0)
Low	162 (81,0)

Table 2. Results of the difference test on knowledge, attitude, and self-efficacy improvement between groups based on the Mann-Whitney Test

Variables	Pre		Post 1		Post 2	
	Mean ± SD	p	Mean ± SD	p	Mean ± SD	p
Knowledge						
Intervention	12,24 ± 3,88	0,916	12,28 ± 3,81	0,000	13,66 ± 4,56	0,000
Control						
Attitude						
Intervention	29,51 ± 7,23	0,194	33,97 ± 7,11	0,003	39,19 ± 9,37	0,000
Control						
Self-efficacy						
Intervention	35,91 ± 6,04	0,994	36,75 ± 6,18	0,017	37,40 ± 7,24	0,000
Control						
Cultural Communication						
Intervention	31,54 ± 6,80	0,245	36,18 ± 7,78	0,800	38,72 ± 7,98	0,000
Control						

Wilcoxon test results

Table 3 presents the results of the Wilcoxon test on the improvement of knowledge, attitudes, and self-efficacy between the intervention and control groups. For the knowledge variable, the intervention group showed a significant improvement from 12,30 ± 3,53 in Pre–Post 1 to 14,51 ± 3,32 in Pre–Post 2 (p = 0,000),

while the control group also experienced an increase from 12,18 ± 4,22 to 11,25 ± 3,58 (p = 0,000). In terms of attitude, the intervention group increased from 28,76 ± 6,77 to 31,65 ± 6,25 (p = 0,000), whereas the control group showed a slight, non-significant increase from 30,26 ± 7,62 to 31,94 ± 7,27 (p = 0,285). For self-efficacy, the intervention group improved from 36,31 ± 5,63 to 37,99 ± 5,69 (p = 0,000), while the control group remained unchanged at 35,50 ± 6,42 (p = 1,000). Lastly, in cultural communication, the intervention group increased from 30,52 ± 5,58 to 35,75 ± 6,66 (p = 0,000), while the control group also improved from 32,56 ± 7,73 to 35,55 ± 8,24 (p = 0,000). Overall, these findings indicate that the intervention had a significantly positive impact on improving knowledge, attitudes, and self-efficacy compared to the control group.

Table 3. Results of the difference test on knowledge, attitude, and self-efficacy improvement between groups based on the Wilcoxon test

Variables	Pre-Post 1		Pre-Post 2	
	Mean ± SD	p	Mean ± SD	p
Knowledge				
Intervention	12,30 ± 3,53	0,000	14,51 ± 3,32	0,000
Control	12,18 ± 4,22	0,000	11,25 ± 3,58	0,000
Attitude				
Intervention	28,76 ± 6,77	0,000	31,65 ± 6,25	0,000
Control	30,26 ± 7,62	0,000	31,94 ± 7,27	0,285
Self-efficacy				
Intervention	36,31 ± 5,63	0,000	37,99 ± 5,69	0,000
Control	35,50 ± 6,42	1,000	35,50 ± 6,42	0,000
Cultural Communication				
Intervention	30,52 ± 5,58	0,000	35,75 ± 6,66	0,000
Control	32,56 ± 7,73	0,000	35,55 ± 8,24	0,000

Figure 1 presents a comparative analysis of Mean Rank trajectories between the treatment and control groups across four variables: knowledge, attitudes, self-efficacy, and cultural communication. The solid line (KP group) demonstrates a progressive increase in Mean Rank from baseline to first post-intervention, to second post-intervention, indicating sustained intervention progress. Conversely, the dashed line (KK group) shows a consistent decline across all variables over time, with knowledge scores decreasing significantly over time, 114,94 (Pre) to 60,72 (Post 2) (Δ = -54,22), reflecting no improvement in understanding without intervention. The widening Mean Rank gap between the KP and KK groups quantifies the strengthening effect of the intervention. These divergent trajectories confirm that the intervention generated statistically significant, cumulative improvements in all targeted domains.

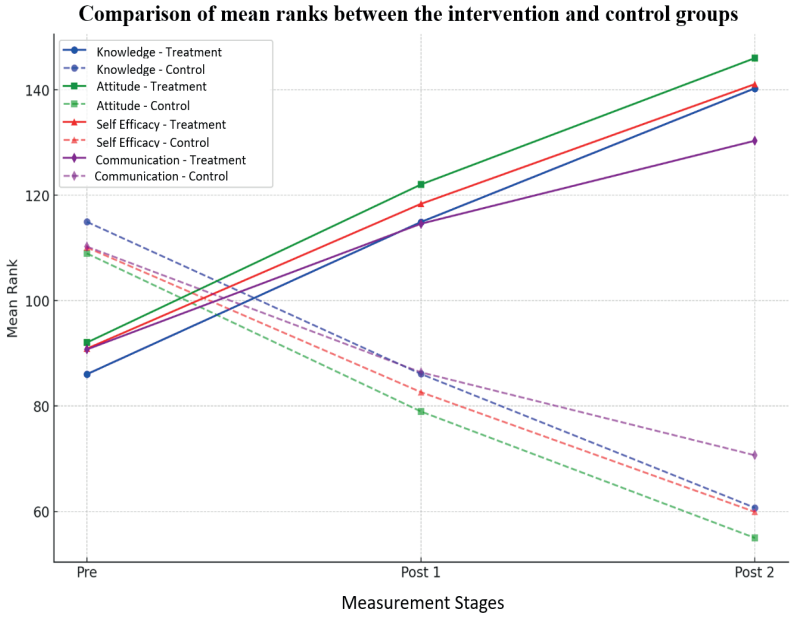

Figure 1. Comparison of mean ranks between the intervention and control groups for each variable: knowledge, attitude, self-efficacy, and cultural communication

DISCUSSION

The study was conducted in a region where child marriage remains deeply embedded in cultural norms. To address potential resistance, a strategic cultural communication approach was developed. Results showed a significant improvement in cultural communication within the treatment group post-intervention. Before the intervention, the average cultural communication score was 30,26 in the treatment group and 32,86 in the control group (p = 0,020), indicating a significant initial difference. The control group had higher cultural communication levels, likely due to prior exposure to diverse cultural settings, highlighting the impact of previous interventions or environmental influences.

In Post-Test 1, the treatment group's cultural communication average score increased to 35,39, slightly surpassing the control group's 35,29 (p = 0,018). This significant difference suggests the intervention had begun improving participants' cultural communication skills.

By Post-Test 2, the treatment group's average score rose further to 41,20, while the control group reached 37,10 (p < 0,05), indicating a highly significant long-term impact. The sustained improvement confirms that the intervention effectively strengthened participants' cultural communication skills over time.[20,21] Cultural communication interventions must adapt to participants' cultural contexts to maximize effectiveness.[21] Integrating cultural values into communication strategies enhances community education efforts,[22] reinforcing the importance of culturally responsive approaches in preventing child marriage.

In the current study, some participants were community leaders in the area. Involving community leaders in this intervention increased its credibility and encouraged adolescents to engage more openly with the presented material,[23] as messages delivered by community figures tend to be more readily accepted as they are considered credible and aligned with local values. Community empowerment models involving local figures help increased knowledge and attitudes toward preventing child marriage,[13,14,15] especially when the costs for mentoring are minimal.[16] Interventions through education, women's empowerment, and community stakeholder programs using a bottom-up approach are effective in preventing child marriage and promoting relatively rapid social change.[17]

In terms of knowledge, the results of the current study showed that there were significant differences in the levels of knowledge, attitude, and self-efficacy between the two groups (using the Mann-Whitney test). After 8 weeks of mentoring, data obtained Post-Test 1 revealed a significant increase in knowledge in the treatment group, reaching an average score of 13,35 compared to 11,28 in the control group (p = < 0,05). This increase indicates that the intervention was effective in raising knowledge. These findings are in line with research conducted by Schuler et al. (2021), which found that intensive mentoring-based intervention programs over several weeks can have a positive effect on participants' knowledge, especially in the context of health education. This knowledge increase is believed to have resulted from a more directed and interactive learning process, allowing participants to understand new information more effectively[24] and can promote collective action against practices that endanger young individuals' well-being.[25]

Furthermore, in Post-Test 2, conducted three months after the mentoring, the treatment group showed an average knowledge score of 17,09, which was significantly higher than that of the control group (14,93), with a p-value < 0,05. This indicates that the increase in knowledge in the treatment group was not only significant immediately after the intervention but also sustained over a longer period. These findings are supported by a previous study that noted that long-term education programs involving intensive mentoring and material repetition help maintain knowledge retention even months after the program has ended.[26] Programs that involve repeated practice and active discussion help participants retain information longer compared to passive learning methods.[27]

The sustained increase in the intervention group's knowledge after three months demonstrates both short- and long-term effectiveness, confirming its success in enhancing understanding and retention.[28,29,30] Intensive educational interventions can improve health literacy by up to 20 % compared to non-intervention groups, especially when using participatory and experiential methods.[31,32] Yen et al. (2017) found that structured and repetitive community-based health programs increased knowledge by 25 %.[33] Mentor-guided counseling combined with self-directed learning enhances retention.[34] Strengthening this approach through active learning[35] or blended learning[36] fosters participant engagement, enabling them to manage their learning more effectively.

Building awareness and developing in-depth knowledge is crucial, as a limited understanding of the impacts of child marriage can act as a major barrier to the smooth implementation of interventions.[15]

Regarding attitudes, the results showed that the treatment group experienced a significant improvement in participant attitudes, while the control group's attitudes declined over time. Education-based, mentoring, and social norm-strengthening interventions have proven effective in changing community attitudes from supporting child marriage to being more critical of it. Studies have shown that youth mentoring[37] (Luhung et al., 2018) and religion-based educational interventions[38] successfully reduced support for early marriage. Similar programs targeting adolescent girls through participatory communication[23] also shifted their attitudes from passive

to proactive in rejecting early marriage. At the community level, interventions that involve changing social norms[39] have been able to lower cultural acceptance of child marriage by encouraging dialogue on gender.

The study also found that the intervention significantly improved participants' self-efficacy. Mann-Whitney test results showed a significant difference between groups before the intervention (p = 0,019), with the control group having a higher mean rank. However, after the first and second interventions, the KP group's self-efficacy increased significantly, while the KK group declined (p < 0,001). The Wilcoxon test analysis confirmed this trend, highlighting a steady improvement in the intervention group and a decline in the control group. These findings emphasize the importance of targeted interventions in enhancing self-efficacy, as higher self-efficacy improves resilience,[40] confidence, and psychological well-being, as well as reduces adverse symptoms such as depression and anxiety.[41] High self-efficacy enhances motivation, psychological resilience, and performance in various tasks, helping individuals see challenges as opportunities, thereby boosting overall performance and motivation.[42]

This study has limitations. First, it was conducted in a single tribal region, limiting its applicability to populations with different cultural contexts. Second, the 12-week intervention may be too short to assess long-term effects, as observed changes might reflect initial responses rather than lasting behavioral shifts. Longer studies are needed to evaluate sustained impacts. Despite these limitations, this study developed a culturally tailored communication strategy for the region with strong tribal identities and resistance to change. By integrating local traditions and values, the approach effectively conveyed child marriage prevention messages, enhancing their relevance and acceptance within the community.

CONCLUSION

Based on the results of this study, it can be concluded that cultural communication strategies have a significant impact on increasing knowledge, changing attitudes, and increasing family self-efficacy in preventing child marriage in Parepare, South Sulawesi, Indonesia, which has strong cultural resistance.

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CONFLICT OF INTEREST

None.

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