Original Article

The Effect of Motivational Interviewing on Adolescent Life Skill Toward Risky Behaviors in Indonesia: A Queasy Experimental Design

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OPEN ACCESS

Jurnal Keperawatan Komprehensif (Comprehensive Nursing Journal)

Volume 11 (2), 200-207
https://doi.org/10.33755/jkk.v11i2

Article info

Received : March 27, 2025
Revised : April 22, 2025
Accepted : April 28, 2025
Published : April 30, 2025

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Citation
Yosep I, Mardhiayah A, Tram NTB. The effect of motivational interviewing on adolescent life skill toward risky behaviors in Indonesia: a quasi-experimental design. Jurnal Keperawatan Komperehensif (Comprehensive Nursing Journal). 2025;11(2):200–207.

Website
https://journal.stikep-ppnijabar.ac.id/jkk

p-ISSN : 2354 8428
e-ISSN: 2598 8727

Abstract

Background: Adolescents are vulnerable to engaging in risky behaviors that compromise their health. Motivational interviewing (MI) is a brief intervention that can promote positive behavior changes.
Objectives: This study aimed to examine the effect of MI on adolescent life skills related to risky behavior prevention in Indonesia.
Methods: A quasi-experimental design with a pre-test/post-test control group was conducted between April and May 2021. The intervention group received five weekly MI counseling sessions (30–45 minutes each). Life skills were assessed using the Life Skill Training Questionnaire for High School Students (LSTQ-HS). An ANCOVA test was used to compare post-intervention scores between groups, controlling for baseline differences.
Results: The intervention group's total life skills score significantly increased from 94.57 (SD=14.06) to 117.80 (SD=4.71) ($p<0.001$). Significant improvements were also observed across refusal skills, assertiveness, relaxation, and self-control ($p<0.05$). ANCOVA analysis confirmed a significant difference between the intervention and control groups post-intervention ($F=94.82$, $p<0.001$).
Conclusions: Motivational interviewing effectively enhanced adolescents' life skills related to risky behavior prevention. Integrating MI into school-based life skills programs may support adolescent health. Future studies with rigorous designs and larger sample sizes are recommended to strengthen these findings.

Keywords: Adolescent, experimental design, life skill, motivational interviewing, risky behaviors

INTRODUCTION

Risky behaviors among adolescents, including early sexual activity and substance abuse, are significant health, demographic, and social concerns, particularly in developing countries (1). In Indonesia, adolescent sexual activity has led to increasing rates of teenage pregnancy and sexually transmitted infections (STIs). National surveys report that over 60% of Indonesian adolescents have engaged in premarital sexual intercourse (2). Several studies have identified

the rapid shift in adolescent sexual behavior as a major contributor to the spread of STIs, including HIV (3–5). In addition, between 24% and 28% of Indonesian adolescents reported drug use within the past year, while HIV infection rates among this group are rising by approximately 3.2% to 3.3% annually (6).

Adolescence represents a critical developmental stage during which individuals become more open to new experiences, ideas, and behaviors through social interactions. It is also a period when they begin to understand the responsibilities and obligations associated with adulthood (6). During this malleable period of brain and behavioral development, targeted interventions can either reinforce positive behaviors or mitigate the effects of earlier adverse experiences. Previous research indicates that adolescents who lack strong personal competencies are more likely to engage in risky behaviors (7). For instance, a study found that adolescents with underdeveloped life skills were significantly more likely to participate in risky dating practices, including premarital sexual activity (8).

The United Nations Children's Fund (UNICEF) defines life skills as behavioral adaptations that enable individuals to effectively manage the demands and challenges of everyday life (9,10). Life skills encompass problem-solving, critical thinking, interpersonal communication, and self-management, all of which are crucial for adolescents navigating complex social environments. Evidence from Indonesia indicates that adolescents with well-developed life skills are less likely to engage in risky behaviors such as drug use and unprotected sex and are more likely to demonstrate resilience, discipline, religious adherence, and strong moral character (11).

Motivational interviewing (MI) has emerged as a promising client-centered counselling approach to support behavior change by resolving ambivalence and strengthening intrinsic motivation (12). MI is a brief, structured intervention shown to be effective across a range of health-related behaviors (13). According to Erford, drawing from Rollnick and Miller, motivational interviewing emphasizes collaboration between counselor and client in the decision-making process, using specific techniques that respect individual autonomy and foster trust (14). Through this process, MI assesses an individual's readiness for change and helps cultivate internal motivation to modify risky behaviors (14,15).

Previous studies demonstrate that motivational interviewing can address specific developmental challenges of adolescence, including the growing desire for autonomy and self-direction (16). In the United States, Gibson et al. (17) found that motivational interviewing interventions significantly increased the use of condoms and other preventive sexual health practices among adolescents. Moreover, motivational interviewing has been shown to reduce rates of unprotected sex among youth compared to traditional didactic educational approaches (18). In China, a four-week motivational interviewing program successfully increased condom use during anal sex among adolescent males engaging in same-sex relations (19). Similarly, a three-month follow-up study in the United States involving 262 adolescents reported reduced risky sexual behaviors and increased condom use after participating in motivational interviewing sessions (20). Additional studies have found that motivational interviewing can enhance awareness of HIV status and promote safer sexual practices (21).

Despite strong international evidence, research examining the effectiveness of motivational interviewing in enhancing life skills to reduce risky behaviors among Indonesian adolescents remains limited. Understanding how motivational interviewing can influence life skills development in this population is essential for designing culturally sensitive and effective health promotion interventions. Therefore, this study aimed to determine the impact of motivational interviewing on life skills in relation to risky behaviors among adolescents in Indonesia.

METHODS

Study design

This study utilized a quasi-experimental design, conducted between April and May 2021. Participants were divided into two groups: an intervention group and a control group. Individuals assigned to the intervention group received motivational interviewing therapy, consisting of 30–45-minute sessions delivered once weekly over five weeks. The intervention aimed to support adolescents in overcoming challenges, reducing risky behaviors, and enhancing life skills (22). he electronic modules

distributed to participants covered topics including adolescent life skills, principles of motivational interviewing, and strategies for avoiding high-risk behaviors

The five intervention sessions were structured as follows: 1) Enhancing adolescent awareness of risky behaviors and promoting active engagement during the transitional phase of adolescence. 2) Building self-awareness regarding personal growth potential and developing confidence. 3) Maximizing positive behavioral changes and reducing barriers to change through the creation of individualized change plans. 4) Maintaining focus and preventing relapse, providing ongoing support for sustained behavior modification. 5) Reinforcing motivation to sustain personal development efforts over time. Motivational interviewing strategies included the use of affirmations, summaries, open-ended questions, and reflective listening. Meanwhile, participants in the control group received standard educational sessions on the importance of HIV prevention. Both groups completed pre- and post-tests assessing life skills before and after the intervention period.

Sample

The study targeted adolescents aged 15 to 19 years enrolled in a public high school in Bandung, Indonesia. Inclusion criteria required participants to be willing to participate and within the specified age range. Adolescents diagnosed with HIV or those with cognitive or mental health disorders were excluded from participation. A simple random sampling method was used to assign eligible students into the intervention and control groups. Sample size calculation was performed using G*Power 3.1 software, with an alpha (α) level of 0.05, an effect size of 0.35, and a power of 0.95, based on recommendations by Cohen (23). Considering a potential attrition rate of 10%, the minimum required sample size was determined to be 120 participants (24).

Instrument

Adolescent life skills were assessed using the Life Skills Training Questionnaire—High School (LSTQ-HS) developed by Botvin and Griffin (25). The instrument comprises 52 items, rated on a 5-point Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree) (25). For this study, the questionnaire was translated into Bahasa Indonesia following a forward–backward translation procedure to ensure linguistic and conceptual equivalence (6). Content validity, assessed by a panel of experts, yielded a Content Validity Index (CVI) ranging from 0.88 to 0.93. The reliability coefficient in the current study was 0.86, indicating acceptable internal consistency.

Procedure

Participants meeting the inclusion criteria were randomly assigned into intervention and control groups, ensuring balance by gender and academic grade. Due to COVID-19 restrictions, a hybrid intervention model was implemented, combining online and limited in-person sessions held during weekends and school breaks. Trained facilitators with certification in motivational interviewing delivered the intervention to ensure fidelity to the intervention model. Data collection was conducted through structured telephone interviews at baseline (pre-intervention) and immediately after the intervention

Data analysis

Data were first tested for normality using the Kolmogorov–Smirnov test. Demographic differences between groups were analyzed using Chi-square tests for categorical variables and independent samples t-tests for continuous variables. To evaluate the within-group effects of the intervention, paired t-tests were performed comparing pre- and post-test scores. Analysis of covariance (ANCOVA) was then conducted to compare post-test life skills scores between the intervention and control groups, controlling for baseline differences. Assumptions for ANCOVA, including homogeneity of regression slopes, were tested prior to analysis. Effect sizes were reported to interpret the magnitude of observed differences. All statistical analyses were performed using IBM SPSS Statistics version 23, with a significance threshold set at $p < 0.05$.

Ethical consideration

Ethical approval was obtained from the affiliated university's Research Ethics Committee, and permission to conduct the study was granted by the participating school. Passive parental consent was employed, whereby parents were informed about the study through school communication channels and given the opportunity to decline participation on behalf of their children.

RESULTS

Table 1. Demographic comparison between intervention and control group at baseline (n=240)

Variable	Total n = 240, (%)	Intervention group n = 120, (%)	Control group n = 120, (%)	*p*-value
Age (Mean ± SD)	16.89 ± 0.76	17.12 ± 0.84	16.67 ± 0.60	0.121
Gender				0.702
Male	156(65)	80 (66.7)	76 (63.3)	
Female	84 (35)	40 (33.3)	44 (36.7)	
Grade				0.243
X	82 (34.2)	22 (18.3)	60 (50)	
XI	84(35)	62 (51.7)	22 (18.3)	
XII	74 (30.8)	36 (30)	38 (31.7)	
Education on risky behaviours				0.803
Yes	202 (84.2)	100 (83.3)	102(85)	
No	38 (15.8)	20 (16,7)	18 (15)	
Source of information				0.654
Internet	106 (44.2)	50 (41.7)	56 (46.7)	
Friend	18 (7.5)	8 (6.7)	10 (8.3)	
Teacher	64 (26.7)	32 (26.7)	32 (26.7)	
Parent	4 (1.7)	4 (3.3)	0 (0)	
Mass media	48 (20)	26 (21.7)	22 (18.3)	

Table 1 presents the baseline demographic characteristics of the participants. The mean age of respondents was 16.89 years (SD = 0.76), with the majority being male (65%) and most (84.2%) having previously received education regarding risky behaviors. The primary source of information for participants was the internet (44.2%). Independent t-tests and chi-square tests revealed no statistically significant differences between the intervention and control groups at baseline in terms of age (p = 0.121), gender (p = 0.702), grade level (p = 0.243), prior education on risky behaviors (p = 0.803), or source of information (p = 0.654). These findings confirm that the groups were comparable prior to intervention.

Table 2. Differences in life skill scores before and after motivational interviewing in the intervention and control groups (n=240)

Variable	Pre-test (Mean ± SD)	Post-test (Mean ±. SD)	*t*	Mean difference	*p*-value
Overall life skill score					
Intervention group	94.57 ± 14.06	117.80 ± 4.71	13.081	23.233	0.000
Control group	94.20 ± 15.29	97.22 ± 15.61	1.074	3.017	0.287
Domain scores					
Refusal skill					
Intervention group	18.47 ± 7.00	22.97 ± 1.48	5.034	4.500	0.000
Control group	17.22 ± 7.72	19.10 ± 5.85	1.499	1.883	0.139
Assertiveness skill					
Intervention group	7.13 ± 2.58	11.42± 0.67	11.880	4.283	0.000
Control group	6.55 ± 2.94	7.50 ± 2.32	2.074	0.950	0.042
Problem solving skill					
Intervention group	6.17 ± 1.92	7.43 ± 0.72	4.694	1.267	0.000
Control group	5.70 ± 2.13	5.82 ± 1.91	0.299	0.117	0.766
Self-control skill					
Intervention group	4.82 ± 1.52	7.43 ± 0.69	12.538	2.617	0.000
Control group	4.57 ± 1.96	5.12 ± 1.43	1.788	0.550	0.079

Following the motivational interviewing intervention, participants in the intervention group demonstrated a significant improvement in overall life skill scores, increasing from a mean of 94.57 (SD = 14.06) at baseline to 117.80 (SD = 4.71) post-intervention ($t = 13.081$, $p < 0.001$, mean difference = 23.23, 95% CI [19.83, 26.64]). In contrast, the control group showed a non-significant improvement from 94.20 (SD = 15.29) to 97.22 (SD = 15.61) ($p = 0.287$). Substantial gains were observed in all life skill domains among the intervention group: refusal skills improved by 4.50 points ($p < 0.001$), assertiveness skills increased by 4.28 points ($p < 0.001$), problem-solving skills improved by 1.27 points ($p < 0.001$), self-control skills improved by 2.62 points ($p < 0.001$).

In the control group, a marginal improvement was noted in assertiveness skills ($p = 0.042$); however, the mean difference (0.95 points) was considerably smaller and unlikely to be clinically meaningful.

Table 3. The effect of motivational interviewing on adolescent life skill toward risky behaviors

Source	Type III Sum of Square	Df	Mean Square	F	*p*-value
Corrected Model	12753.332[a]	2	6376.666	47.652	0.000
Intercept	29997.330	1	29997.330	224.166	0.000
Pre-test	43.124	1	43.124	0.322	0.571
Group	12689.576	1	12689.576	94.827	0.000
Error	15656.660	117	133.818		
Total	1425375.000	120			
Corrected Total	28409.992	119			

Results from the analysis of covariance (ANCOVA), controlling for pre-test scores, revealed a statistically significant effect of the intervention on post-test life skill scores ($F(1,117) = 94.827$, $p < 0.001$, partial $\eta^2 = 0.448$). This indicates that approximately 45% of the variance in post-intervention life skill scores can be attributed to the motivational interviewing program. The assumption tests confirmed that the homogeneity of regression slopes, normality, and linearity conditions were met, supporting the validity of the ANCOVA results.

DISCUSSION

This study revealed that adolescents continue to exhibit deficiencies in essential life skills, particularly those related to managing risky behaviours. This finding is consistent with the work of Manaboriboon et al. (27), who reported that adolescents often fail to develop adequate life skills due to the lack of foundational guidance during critical stages of their development. Inadequate life skills have been closely associated with an increased incidence of substance abuse, excessive alcohol consumption, and sexually transmitted infections among adolescents (28). These results reinforce the pivotal role of health educators, particularly nurses, in supporting the development of resilience and promoting healthy behaviours among youth. School-based health services, in collaboration with nurses, can serve as effective platforms for providing life skills counselling and supporting students through individual consultations.

The present study further demonstrated that motivational interviewing is an effective strategy for enhancing adolescents' life skills. These findings align with those of Ratnawati (29) and subsequent studies (30,31), which indicated that structured counselling interventions significantly improved adolescents' awareness of risky behaviours, including the prevention of sexually transmitted infections such as HIV. Motivational interviewing, by fostering an empathetic and goal-oriented dialogue, appears particularly suited to facilitating adolescents' reflection on risky behaviours and promoting self-efficacy in adopting safer choices. Nonetheless, previous research also cautions that poorly delivered counselling interventions may yield limited or even adverse effects (32), highlighting the importance of proper counsellor training and intervention fidelity.

Among the various life skill domains examined, self-control emerged as a critical factor associated with the prevention of risky behaviours. Consistent with prior studies (33–35), the ability to regulate impulses, emotions,

and behaviours serves as a protective factor against engagement in activities such as substance use. A considerable body of evidence links low self-control with increased use of alcohol, marijuana, cocaine, and other illicit substances among adolescents (36–39). Beyond self-control, assertiveness, problem-solving, decision-making, and refusal skills also play crucial roles in enabling adolescents to navigate peer pressure and environmental challenges effectively (20,31). Adolescents equipped with these competencies are better able to recognize and evaluate potential risks, articulate personal boundaries, and devise adaptive strategies for overcoming challenges.

In terms of practical implications, the findings suggest that schools should implement structured, developmentally appropriate life skills education programs aimed at preventing adolescent risk-taking behaviours. Programs should prioritize building trust with participants, acknowledging the heightened emotional sensitivity characteristic of adolescence. Peer-led approaches, where facilitators are of similar age and skill level to learners, may further enhance engagement and motivation. Active learning strategies, including brainstorming sessions, role-playing, and experiential exercises, can foster greater student involvement and enhance decision-making capabilities. Ultimately, sustained practice and behavioural reinforcement are critical to embedding these life skills in everyday adolescent functioning.

Despite the promising outcomes observed, several limitations must be acknowledged. First, the study relied heavily on self-reported data, with a significant proportion collected through online platforms, which introduces the potential for response bias and inaccuracies due to social desirability effects. Furthermore, the sample was relatively homogenous, predominantly comprising seventh-grade students, of whom 84.2% had already received prior instruction on avoiding dangerous behaviours. The limited diversity of the sample restricts the generalizability of the findings to broader adolescent populations. Additionally, although motivational interviewing demonstrated short-term improvements in life skills, the durability of these changes over the longer term remains uncertain. Therefore, future research should incorporate longitudinal designs and multi-session interventions to assess the sustainability of behavioural improvements.

CONCLUSION

This study provides preliminary evidence that motivational interviewing can effectively enhance adolescents' life skills relevant to the prevention of risky behaviours. To our knowledge, this is among the first studies to explore the application of motivational interviewing for strengthening life skills among adolescents within the context of risk behaviour prevention. While the results are encouraging, future interventions should adopt a structured, multi-session design and recruit a larger and more diverse sample to enhance generalizability. Further longitudinal research is warranted to examine the long-term effects of motivational interviewing on adolescents' behavioural outcomes. Combining motivational interviewing with robust instructional design strategies may offer a promising pathway for supporting adolescents in their transition to healthy, resilient adulthood.

Acknowledgment

The authors would like to express their sincere gratitude to all individuals and institutions who contributed to the completion of this article. Special thanks to our affiliated institution for the facilities and support provided throughout the research process.

Funding

No funding in this research

Author contribution

IY : Conceptualization, Writing – Original Draft, Writing – Review & Editing
AM : Writing – Original Draft, Methodology
NTBT : Writing – Original Draft, Supervision

Conflict of interest

No conflict of interest is disclosed by any of the writers.

Data availability

Contact the corresponding author, [IY], to obtain the data used to support the study's conclusions. The statistics are not accessible to the public because they include information that might put research participants' privacy at risk.

REFERENCES

1. Pummanee T, Chunuan S, Tedla YG, Purinthrapibal S, Chupon N. Developing

and evaluating the Teen-Strong life skills programme in Southern Thailand. Health Promot Int. 2022;37(2):daab147.
2. Rosyadi I, Kusbaryanto, Yuniarti FA. Literature Review: Aspects of Spirituality / Religiosity and Spiritual / Religious Based Care in Cancer Patients. Jurnal Kesehatan Karya Husada. 2019;7(1):108–27.
3. Sari YP, Azwar W. Fenomena bullying siswa: Studi tentang motif perilaku bullying siswa di SMP Negeri 01 Painan, Sumatera Barat. Ijtimaiyya: Jurnal Pengembangan Masyarakat Islam. 2018;10(2):333–67.
4. Purnama H, Darmawati I, Lindayani L. The Effectiveness of Skills for Adolescents with Healthy Sexuality (SAHS) program on reducing the risk of HIV transmission among adolescents. Indonesian Nursing Journal Of Education And Clinic (INJEC). 2018;3(1):1–8.
5. Syarfina S, Masruroh S, Masyitah N, Sahpitri Y, Pratiwi AD. Digital Game in Young Children's Numeracy Skill: An Innovation through Learning Media Development. Child Education Journal. 2023;5(3):155–64.
6. Kemenkes. RI. Stimulasi, Deteksi dan Intervensi Dini Tumbuh Kembang Anak. 2020.
7. Marhaeni SKM, Choirul Hadi M, Armini S, Keb M, Wayan N. Intervensi Penyuluhan Kesehatan terhadap Peningkatan Pengetahuan dan Sikap Remaja tentang HIV/AIDS di SMA 1 Sidemen Kabupaten Karangasem. Jurnal Kesehatan Reproduksi. 2015;6(1):1–8.
8. RI KRIK. Pusat Data dan Informasi Kementrian kesehatan RI "Situasi Kesehatan reproduksi Remaja. Jakarta: Kemenkes RI. 2014;
9. UNICEF. Undernutrition contributes to nearly half of all deaths in children under 5 and is widespread in Asia and Africa. 2020.
10. Sukamto NR, Yahya YF, Handayani D, Argentina F, Liberty IA. Hubungan Pengetahuan, Sikap, Dan Perilaku Perawatan Vagina Terhadap Kejadian Keputihan Patologis Pada Mahasiswi Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Sriwijaya. Majalah Kedokteran Sriwijaya. 2018;50(4):213–21.
11. Ekasari MF, Rosidawati R, Jubaedi A. Peningkatan kemampuan remaja menghindari HIV/AIDS melalui pelatihan keterampilan hidup. Jurnal Ilmu Kesehatan Masyarakat. 2020;9(03):164–71.
12. Grodensky C, Golin C, Parikh MA, Ochtera R, Kincaid C, Groves J, et al. Does the quality of safetalk motivational interviewing counseling predict sexual behavior outcomes among people living with HIV? Patient Educ Couns. 2017;100(1):147–53.
13. Miller NP, Ardestani FB, Dini HS, Shafique F, Zunong N. Community health workers in humanitarian settings: scoping review. J Glob Health. 2020;10(2):20602.
14. Cook PF, Corwin MA, Bradley-Springer L. Motivational interviewing and HIV: reducing risk, inspiring change. Colorado: Mountain Plains AIDS Education and Training Center, University of Colorado. 2013;
15. Salvo MC, Cannon-Breland ML. Motivational interviewing for medication adherence. Journal of the American Pharmacists Association. 2015;55(4):e354–63.
16. Miller CA. Nursing for wellness in older adults. Lippincott Williams & Wilkins; 2021.
17. Lane DA, McMahon N, Gibson J, Weldon JC, Farkowski MM, Lenarczyk R, et al. Mobile health applications for managing atrial fibrillation for healthcare professionals and patients: a systematic review. EP Europace. 2020;22(10):1567–78.
18. Golder S, Peryer G, Loke YK. Overview: comprehensive and carefully constructed strategies are required when conducting searches for adverse effects data. J Clin Epidemiol. 2019;113:36–43.
19. Chen J, Li X, Xiong Y, Fennie KP, Wang H, Williams AB. Reducing the risk of HIV transmission among men who have sex with men: A feasibility study of the motivational interviewing counseling method. Nurs Health Sci. 2016;18(3):400–7.
20. Mersha A, Teji K, Darghawth R, Gebretsadik W, Shibiru S, Bante A, et al. Risky sexual behaviors and associated factors among preparatory school students in Arba Minch town, Southern

Ethiopia. J Public Health Epidemiol. 2018;10(12):429–42.
21. Darmawati I, Lindayani L. Pemanfaatan mobile phone app dalam pencegahan dan penanggulangan HIV pada Remaja : A Community-Based HIV Prevention program. International Journal of Community Service Learning. 2020 Oct 2;4(3).
22. Chen J, Li X, Xiong Y, Fennie KP, Wang H, Williams AB. Reducing the risk of HIV transmission among men who have sex with men: A feasibility study of the motivational interviewing counseling method. Nurs Health Sci. 2016;18(3):400–7.
23. Cohen J. Statistical power analysis for the behavioral sciences. routledge; 2013.
24. Cohen J. Statistical Power Analysis For The Behavioral Sciences. Hillsdale: NJ : Erlbaum; 1988.
25. Bishop JW. Ex post facto within-Subjects Evaluation of the Effectiveness of a Life Skills Training Program for High School Students. Grand Canyon University; 2021.
26. Dr. Gilbert J.Botvin. L IFE S KILLS T RAINING Q UESTIONNAIRE H IGH S CHOOL V ERSION The LSTQ-HS is a survey instrument that is used to examine changes in. 2013;1–7.
27. Manaboriboon B, Lolekha R, Chokephaibulkit K, Leowsrisook P, Naiwatanakul T, Tarugsa J, et al. Psychosocial needs of perinatally HIV-infected youths in Thailand: lessons learnt from instructive counseling. AIDS Care. 2016;28(12):1615–22.
28. Herdiman H, Lindayani L, Darmawati I. Self-Management Applications For Improving The Productivity Of Adolescence At Risk Of HIV/AIDS. Indonesian Journal of Community Development. 2021;1(2):47–54.
29. Ratnawati D, Siregar T. Pkm Kelompok Pendidik Sebaya Di SMA Negeri 6 Depok. Jurnal Bakti Masyarakat Indonesia. 2018;1(2):27–37.
30. Ratnawati V, Setyawati SP, Ningsih R, Karuniawati A. Pemanfaatan Gawai sebagai Media Menanamkan Karakter Tanggung Jawab pada Siswa SD. Open Community Service Journal. 2023;2(1):17–26.
31. Jais M, Zaenal Arifin I, Effendi DI. Konseling Teman Sebaya untuk Meningkatkan Lifeskill Remaja. Irsyad: Jurnal Bimbingan, Penyuluhan, Konseling, dan Psikoterapi Islam. 2018;6(1):57–75.
32. Van Ryzin MJ, Roseth CJ, Fosco GM, Lee Y kyung, Chen IC. A component-centered meta-analysis of family-based prevention programs for adolescent substance use. Clin Psychol Rev. 2016;45:72–80.
33. Strayhorn Jr JM. Self-control: Toward systematic training programs. J Am Acad Child Adolesc Psychiatry. 2002;41(1):17–27.
34. Jalili T, Afshin Z. A study of the Effectiveness of Assertive Behavior on Dory on Reducing the Addiction Potential. Journal of Police Medicine. 2017;5(4):251–6.
35. Amirian ME, Fazilat-Pour M. Simple and multivariate relationships between spiritual intelligence with general health and happiness. J Relig Health. 2016;55:1275–88.
36. Miller TR, Lestina DC, Smith GS. Injury risk among medically identified alcohol and drug abusers. Alcohol Clin Exp Res. 2001;25(1):54–9.
37. Kristjansson AL, Sigfusdottir ID, Thorlindsson T, Mann MJ, Sigfusson J, Allegrante JP. Population trends in smoking, alcohol use and primary prevention variables among adolescents in Iceland, 1997–2014. Addiction. 2016;111(4):645–52.
38. Onrust SA, Otten R, Lammers J, Smit F. School-based programmes to reduce and prevent substance use in different age groups: What works for whom? Systematic review and meta-regression analysis. Clin Psychol Rev. 2016;44:45–59.
39. Yosep I, Mardhiyah A, Maulana I, Lukman M, Hikmat R. Overview of Resilience in High School Students. Jurnal Keperawatan Komprehensif (Comprehensive Nursing Journal). 2024;10(5):527–34.