EFFECTIVENESS OF RISK REDUCTION (RR) AND RISK AVOIDANCE (RA) APPROACH TO REDUCE RISK BEHAVIOR IN THE SENIOR HIGH SCHOOL STUDENT IN BALI AND PALANGKA RAYA

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ABSTRACT

Adolescent as the age group that is vulnerable to health problems associated with risky behavior. This study aimed to compare the effectiveness of the Risk Avoidance (RA) and Risk Reduction (RR) approach with reproductive health standard program to reduce students risk behavior in three high schools in Bali and Palangkaraya. Study design was quasy experimental study with pretest posttest control group design. Respondents who enrolled in the study were students at the level 10 to 12 in Denpasar and Palangka Raya, using RA and RR approach.

A total of 132 respondents in Denpasar who are willing to be involved and subsequently drawn to 105 respondents, or as many as 35 students per school. There was a significant relationship between the provision of intervention RR, RA and controls with gender, the level / grade, the age of the respondents; and an increasing attitude that supports abstinence and self-efficacy in the treatment group RR, RA and controls on pretest and posttest (p <.05).

We need to do an intensive coordination with the school and the policy maker for the continuity of the promotion and prevention program for adolescent. Keywords:
adolescent, risk avoidance, risk reduction, reproductive health program Introduction

The negative effects of unsafe sexual behavior can increase the risk of adolescents experiencing pregnancy and contracting sexually transmitted infections / STIs (1-4).

Globally it was estimated that as many as 47% of high school students had sexual intercourse, about 40% did not use condoms during the last sexual intercourse, and 15% had four or more sexual partners (2, 5, 6). Intervention in the form of a comprehensive Risk Reduction (RR) behavior promotion can prevent or reduce the risk of pregnancy, Human Immunodeficiency Virus (HIV), and other STIs.

The RR intervention program effectively decreases sexual activity and enhances the protection of sexual behavior in adolescents, whereas the effectiveness of the abstinence program remains inconclusive because the outcome or effect is still highly varied (7). Reproductive and sexual health education for adolescents in school-based in Bali is specifically applied in programs under the National Population and Family Planning Agency in the form of the Center for Information and Communication of Reproductive Health of Youth or when is known as Center for Information and Communication-Adolescents, and the National Narcotics Agency in the form of the AIDS and Drugs Student Group.

This study will evaluate the effectiveness of the standard program in school-based (Center for Information and Communication of Reproductive Health of Youth and National Narcotics Agency in the form of the AIDS and Drugs Student Group) compared with Risk Avoidance (RA) and Risk Reduction (RR) interventions. RA materials include: abstinence or abstinence until marriage, while RR materials include abstinence efforts plus comprehensive sexual education (1.6-8).

The evaluation of reproductive and sexual health programs of school-based for adolescent is selected on the grounds that schools are a very strategic way to prepare students academically and nonacademically, such as the ability to take responsibility for personal health. Based on previous observations, there is not known effectiveness of school-based reproductive and sexual health programs in Bali or another area such as Palangkaraya City in addition to the weakness program monitoring efforts including financing, new interventions could be implemented in the RA and RR programs.

Bali as a tourism destination that can influence the adolescent sexual behavior. According to the research by Lucin (2012) in Palangkaraya found that barriers of utilization to the Center for Information and Communication of Reproductive Health of Youth among adolescent were embarrassment, lack of time, less communicative officer, and unstandardized room for counseling (9).
The problem formulation is: whether RR and RA programs can reduce adolescent risk behavior compared to the standard program in Denpasar City and Palangkaraya City? The aim of this study is to compare the effectiveness of RR and RA programs with standard programs of Center for Information and Communication of Reproductive Health of Youth and National Narcotics Agency in the form of the AIDS and Drugs Student Group between pretest and posttest to decrease risky behavior of adolescents in Bali and Palangka Raya.

This research is expected to provide theoretical and practical benefits, especially for the youth themselves, for educators and those responsible for designing sexual and reproductive health programs for school-based adolescents. The design of this study is quasi-experimental, i.e., non-randomized pretest posttest with control group design by providing intervention in the form of providing school-based reproductive health programs at 10 to 12 high school students in Denpasar and Palangkaraya using RA and RR materials, compared to Center for Information and Communication of Reproductive Health of Youth and / or National Narcotics Agency in the form of the AIDS and Drugs Student Group.

The schools involved were selected randomly and subsequently treated, whether the RA, RR, and standard programs were selected randomly as well. The treatment groups in the form of RR intervention were at public senior high school 4 at Denpasar City and public senior high school 3 at Palangka Raya, RA treatment group at public senior high school 5 Denpasar City and public senior high school 2 Palangka Raya City, and control group in the form of standard programs were public senior high school 2 Kota Denpasar and public senior high school 1 Palangka Raya City.

The research population is all public senior high school in Denpasar and Palangka Raya with standard programs. Furthermore, it was chosen based on predetermined criteria for students at three public senior high schools in Denpasar City and Palangkaraya involved in the study or each school was included as many as 35 students.

After being selected, treatment was given in the form of standard programs plus RA and RR and program with RA and RR, as well as control group only given Center for Information and Communication of Reproductive Health of Youth and / or AIDS and Drugs Student Group programs only. The study sample was selected from the population according to the pre-established inclusion criteria.

The number of samples in Bali as many as 105 students, as well as in Palangka Raya as many as 105 people. The large sample formula used according to Lemeshow et al.
(1996), for the sample size of the students of public senior high schools with 95% confidence level, \( \beta = 0.15 \). The difference of mean values between the two groups was 1.8 with the standard deviation of 2.8, so that the sample size was obtained: \( n = \frac{(2 \sigma^2 (Z_{1-\alpha} + Z_\beta)^2)}{((\mu_1 - \mu_2)^2)} \). Sample in the study was divided into two groups and treated differently, and there was one control or comparison group to enforce the internal validity of the study (Kerlinger, 2003).

The research variables include: independent variables, intermediate variables, and dependent variables. 1. The independent variables of this study are standard interventions from school-based adolescent reproductive health programs (senior high school) in Bali and Palangka Raya, which are asked through questionnaires / self-reported by two questions (Center for Information and Communication of Reproductive Health of Youth / PIK-R and / AIDS and Drugs Student Group programs / KS-PAN).

Furthermore, new interventions (RA and RR) combined with KS-PAN or PIK-KRR are given to 6 meetings or face-to-face meetings, or schedules are adjusted to the school agreement. 2. Intermediate variables include sociodemographic characteristics of respondents regarding sex (male = 1 and female = 2), grade / grade (level 10 = 1, grade 11 = 2, and grade 12 = 3), respondent’s age (in years ), and perceptions of known peer behavior.

If the respondent's answer is correct, given a score=1, and if the answer is wrong given a score=0. Characteristics of respondents asked through self-reported questionnaire, including: gender, age and level / grade in school. 3. The dependent variable is assessed from knowledge, attitudes, normative beliefs, perceptions about the impact of teenage pregnancy, perceptions of contraceptive use in adolescents, parental values, and self-efficacy between before and after intervention in the form of RR and RA modules, obtained by self-reported questionnaire adapted from the instrument by Kirby et al. 2011.

(4) Univariate, bivariate, and multivariate analyzes used independent analysis of t-test, chi square and oneway anova. Analyzes were conducted for assessing changes in knowledge, attitudes, parental values or normative beliefs, self-efficacy and perceptions of contraceptive use / condom during the last sexual intercourse between the respondents before and after the intervention.

Data analysis through data entry steps, coding, cleaning and statistical analysis. This research is done by giving explanation in advance to the selected team to collect the data, the next respondent is given informed consent without coercion. The researcher
ensures the confidentiality of the data obtained as well as the identity of the respondent. Ethical clearance has been issued by the Ethics Committee of the Faculty of Medicine, Udayana University, Denpasar.

The schools involved in this study were public senior high school 2, 4 and 5. Meanwhile, the schools involved in Palangka Raya were public senior high school 1, 2 and 3. The respondents were not homogeneous according to gender, grade and age characteristics (p > .05).

Table 1 describes the characteristics of respondents in three public senior high schools in Denpasar City and in Palangka Raya. Table 1. Number of respondents by characteristics and intervention in three public senior high schools in Denpasar City and Palangka Raya City, year 2015 (N = 210 people) _ RR (n=70 people) _ RA (n=70 people) _ Control (n=70 people) _ p-value _ _ _n_ % _n_ % _n_ % _ _ _Gender Male Female _ 38 32 _ 54.3 47.7 _ 49 21 _ 70.0 30.0 _ 35 35 _ 50.0 _ 0.041* _ _ _Grade 10 11 12 _ 30 39 1 _ 42.9 55.7 1.4 _ 17 50 3 _ 24.3 71.4 4.3 _ 23 39 8 _ 32.9 55.7 11.4 _ 0.017* _ _ _Age (year) 14 15 16 17 _ 6 31 32 1 _ 8.6 44.3 45.7 1.4 _ 25 39 4 _ 2.9 35.7 5.7 _ 5 31 22 12 _ 7.1 44.3 31.4 17.1 _ 0.004** _ _ Source: Primary analysis (2015) There are differences in pretest scores based on dependent variables (knowledge, attitudes supporting abstinence, known peer norms, self-efficacy to reject premarital sex, perceptions of condom use or contraception at last sex, perceptions of avoiding pregnancy, and peer behavior known (p <.05), as described in Table 2. Table 2. Differences in pretest scores in the RR, RA and control groups in Denpasar City and Palangka Raya City (2015).

Variables _Pretest (N=210 people) _ _ _Mean _Sd _Mean diff _95% CI _ p-value _ _ _Knowledge: RR RA Control _ 8.88 8.51 8.82 _ 1.62 1.55 2.02 _ 0.06 -0.31 _ -0.52-0.63 -0.89-0.26 _ 0.847 0.289 _ _ _Attitude toward abstinent: RR RA Control _ 50.26 50.08 48.84 _ 1.58 1.53 3.01 _ 1.41 1.24 _ 0.69-2.13 0.52-1.96 _ 0.001*** 0.001*** _ _ _Peer normative believe: RR RA Control _ 6.91 6.87 6.71 _ 0.28 0.44 0.70 _ 0.20 0.16 _ 0.03-0.36 0.01-0.32 _ 0.021* 0.069 _ _ _Self efficacy: RR RA Control _ 16.08 16.67 13.63 _ 4.02 3.34 5.82 _ 2.46 3.04 _ 0.95-3.96 1.53-4.54 _ 0.002** 0.001*** _ _ _Avoiding pregnant: RR RA Control _ 6.97 6.98 6.83 _ 0.16 0.11 0.65 _ 0.27 0.16 _ 0.01-0.14 0.02-0.28 _ 0.035* 0.021* _ _ _Condom use: RR RA Control _ 25.06 24.66 23.3 _ 3.61 3.11 4.88 _ 1.76 1.36 _ 0.44-3.07 0.04-2.67 _ 0.009** 0.043* _ _ _Peer behavior: RR RA Control _ 24.97 24.40 22.84 _ 1.23 1.84 1.66 _ 2.13 1.84 _ 1.37-2.88 0.90-2.41 _ 0.001*** 0.001*** _ _ _Source: Primary Analysis (2015) Note: *p < .05; **p < .01; ***p <.005 There were significant differences in posttest scores on the knowledge component (p <.001), peer norms (p <.001), perceptions of condom use (p <.05), and known peer behavior (p <.001) which is shown in Table 3 below. Table 3.
Differences in posttest scores in the RR, RA and control groups in Denpasar City and Palangka Raya City (2015) Variables _Posttest (N=210 people) _ _ _Mean _Sd _Mean diff _95% CI _p-value _ _Knowledge: RR RA Control _ 8.88 9.00 7.94 _ 1.65 1.51 1.31 _ 0.90 1.06 _ 0.44-1.35 0.60.1.51 _ 0.001*** _ 0.001*** _ _Attitude toward abstinence: RR RA Control _ 50.78 50.47 50.21 _ 1.52 1.80 1.84 _ 0.57 0.26 _ -0.01-1.4 -0.32-0.83 _ 0.052 0.381 _ _Peer normative belief: RR RA Control _ 6.93 6.88 6.70 _ 0.25 0.43 0.49 _ 0.23 0.18 _ _Self efficacy: RR RA Control _ 18.63 18.38 19.03 _ 2.60 3.04 1.84 _ -0.40-0.64 _ -1.24-0.44 -1.49-0.20 _ 0.354 0.137 _ _Avoiding pregnant: RR RA Control _ 6.91 7.00 6.90 _ 0.40 0.00 0.51 _ 0.01 0.10 _ -0.11-0.14 -0.02-0.22 _ 0.824 0.120 _ _Condom use: RR RA Control _ 24.93 25.34 24.34 _ 2.87 2.24 2.48 _ 0.58 1.00 _ -0.26-1.43 0.15-1.84 _ 0.175 0.021* _ _Peer behavior: RR RA Control _ 25.11 24.78 23.64 _ 1.07 1.37 1.94 _ 1.47 1.14 _ -0.96-1.97 0.64-1.64 _ 0.001*** 0.001*** _ _ Source: Primary Analysis (2015) Note: *p < .05; **p < .01; ***p < .005 The results obtained on the difference in differences between pretest and posttest in the RR, RA and control intervention groups found that only attitudes supporting abstinence and self-efficacy showed a significant relationship (p <.001).

Thus, there is an increase in attitudes that support abstinence and self-efficacy in RR, RA and control treatment on pretest or posttest, and the results are shown in Table 4 below. Table 4. Results of Oneway anova Analysis: The relationship between RR, RA, and Control treatment with difference change on the dependent variable (2015) Variabel _Treatment group _Control _ _ _RR _RA _ _ _p-value _ _ _Mean _Sd _Mean _Sd _Mean _Sd _ _ _Knowledge _ -41.41 _1.77 _41.08 _2.00 _ -40.90 _2.91 _0.404 _ _ _Attitude toward abstinence _0.53 _1.52 _0.38 _2.15 _1.37 _2.36 _0.009* _ _ _Peer normative belief _0.01 _0.26 _0.01 _0.39 _ -0.01 _0.82 _0.939 _ _ Self efficacy _2.54 _4.44 _1.71 _4.24 _5.40 _5.65 _0.001*** _ _ _Avoiding Pregnant _-0.06 _0.37 _-0.01 _0.11 _0.07 _0.42 _0.079 _ _ _Condom use _-0.13 _2.69 _0.68 _2.97 _1.04 _3.87 _0.090 _ _ _Source: Primary Analysis (2015) Note: *p < .05; **p < .01; ***p < .005 Discussion There are difference of respondent characteric given by program intervention in the form of RR, RA and control group especially on gender, level / class and age / age of respondent (p <.05). According to Chin et al. (2012), that the heterogeneity of the sample is over 50% of the boundary line, thus the substantial or substantial variations of the individuals involved in the study should be tested (7,11). There are significant differences in pretest and posttest between several interventions: RR, RA and control groups in Denpasar City and Palangka Raya City, particularly in the knowledge component with p <.001, attitudes supporting abstinence in RR interventions with p <.005 and groups of control with p <.001, self-efficacy to reject premarital sex p <.001, adolescent perceptions of contraceptive / condom use in
recent sex with controls p < .05, and perceptions of peer behavior in the control group (p < .05).

The highly significant difference in outcomes for knowledge, attitude, self-efficacy, perceptions of condom use and perceptions of peer behavior are the result of learning and other internal factors. Internal factors include cognitive, gender, genetic and attitude of adolescent (4). The main health issues in among adolescent in the worldwide include mental health problems, early pregnancy and childbirth, HIV and sexually transmitted infection (STI) and other infectious diseases, violence, unintentional injuries, malnutrition, and substance abuse (15). In accordance with the results of Sipe et al., 2012, the same results according to Kirby (2007), that the curriculum-based program on sex education and STI / HIV programs effectively delayed the initiation of sex, decreased the number of sexual partners, decreased the frequency of sexual intercourse and was generally foisted on improving and improving cognitive factors. According to Garg (2017), found that adolescent need to involved and empowered in decisions that affect them and facilitate them in developing their capacity into a successful adult (15).

There is a difference between pretest and posttest values in the RR, RA and control groups, particularly in the attitude component supporting abstinence (p < .01) and self-efficacy to reject premarital sex (p < .001). These results indicate if not all the expected components change, although there is no statistically significant difference, but there appears to be an increase between pretest and posttest and gives practical meaning.

Respondents’ knowledge is not the main fact that affects behavior, but better knowledge can improve attitudes, perceptions of peer skills. Statistical results do not always show a direct impact on knowledge to behave (1,4,7,11-13). According to the previous study by Viner et al (2012), found that adolescence health affected by social factors (personal, family, community, and national levels), besides developmental effects related to puberty and brain development that leading the new sets of behaviors and capacities.

Structural factors as the strongest determinants of adolescent health in the worldwide, such as income inequality and access to education. Addressing risk and protective factors to decrease risky behavior among adolescence in the social environment at school, community and the most important is in family (14).

Conclusion There were significant differences in the characteristics of the respondents in the RR, RA and control groups according to gender, grade / grade and age with p < .05.
The pretest results of the RR and RA intervention groups differed from the control group, as did the posttest results. There was a very significant relationship between the provision of RR, RA and control group (p < .05), attitude and self-efficacy of respondents (p < .005).

There is an increase in attitudes that support abstinencia and self-efficacy in RR, RA and control treatment in both pretest and posttest (p < .05). Suggestion For respondents or teenagers to be more actively seeking the right information through appropriate resources related to knowledge about sexual and reproductive health for adolescents.

For teachers of reproductive health program managers in schools including principals as policy makers in the scope of school, vice principal of curriculum, can jointly follow up the wishes and expectations of students to disseminate information related to RR and RA materials and programs. Program is expected to be sustainable; and for policy holder of reproduction and sexual health of adolescent at Regency / City level in Denpasar and Palangka Raya to be able to consider RR and RA program applied more widely in every senior high school even starting from junior high school, and improve program model according to local culture.

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