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Determinants of Resilience Adolescent for Not Doing Premarital Sexual Intercourse (Data Analysis of Integrated Biologic and Behavior Survey, 2013)

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ABSTRACT

The adolescent is a transition period from childhood to adulthood, signed by rapid development in physical, mental, emotional and social. Earlier sexual initiation by the adolescent, increasing the risk to get sexually transmitted diseases, unmet need, teen's pregnancies, and unsafe abortion. The younger adolescent sexual intercourse, the greater the risk of transmission of infectious diseases through sexual transmission. In Indonesia, the age of adolescent who had premarital sexual intercourse was 9-24 years old. Prevalence of unmarried boys who had to have sex is 8.3% and girls are 1%. This study aims to know the determinants of resilience adolescent for not doing premarital sexual intercourse. The results show that adolescent's survival cumulative proportion is about 92.6% and age mean of sexual debut is 15.8 years old. Factors associated with adolescent's survival not to have premarital sexual intercourse are sexual arousal behavior (AHR: 7.7; 95% CI: 5.2-11.3), drunk with alcohol (AHR: 1.5; 95% CI: 1.1-2) and kissing. The association between kissing and adolescent's survival rate is different in each time unit (year). Need enforcement to give earlier education about adolescent's health reproduction, not just as formal education in high school, but also in the family and adolescent's community to prevent premarital sexual intercourse among adolescents.

Keywords: Premarital sexual intercourse, Adolescent's survival

INTRODUCTION

Background

Adolescence is a phase of dynamic development in the life of an individual. This period is a transition period where people are experiencing a transition from childhood to adulthood is marked by accelerating the development of physical, mental, emotional and social that took place in the second decade later in life⁽¹⁾. Rapid changes tend to cause problems related to personality, sexual and social teenagers that can have an impact on health. The main health problems in adolescents today is partly linked to drug use and an increase in risky sexual behavior.

Risky sexual behavior because of a teenage promiscuity now is quite alarming. Adolescents tend permissive attitude (permissive) to free sex, so do not even been considered taboo anymore even though they are still a dozen years old. The result is health problems associated with sexual behavior such as the incidence of pregnancy among adolescents, abortion and sexually transmitted diseases⁽²⁻⁴⁾.

It is very vulnerable to cause health problems related to the reproductive organs. The younger adolescent sexual intercourse, the greater the risk of transmission of infectious diseases through sexual transmission. Results of research Finer (2007) stated that, based on survey data US adolescents who have had sexual intercourse before marriage by 75% at the age of 20 years⁽⁵⁾. In Canada, Garriguet (2005) analyzed data from the National Longitudinal Survey of Children and Adolescent, it was found that the percentage of young men who have had

sexual intercourse before marriage at the age of 14-15 years by 12% and young women who have had sexual intercourse at age unchanged at 13% ⁽⁶⁾. Yip et al. (2013) stated that 41.5% of adolescents in Hong Kong have had sexual intercourse before marriage, where the average age of first sexual intercourse is 18 years old⁽⁷⁾. Malaysia as the country's closest neighbor Indonesia and also adheres to a strict eastern culture it was found that 3.6% of adolescents have had sexual intercourse before marriage, where the youngest age who have had sexual intercourse at 13 years (4%) and the most age who had sexual intercourse before marriage is 17 years ie by 36%⁽⁸⁾.

Based on data from the Demographic and Health Survey 2012, Indonesian adolescents who have had sexual intercourse before marriage ranged between 9-24 years old⁽⁹⁾. The prevalence of unmarried adolescents who have had sexual intercourse at least 8.3% of male and female adolescents by 1%. Suwarni & Selviana (2015) states that 14.7% of adolescents from high school in Pontianak had premarital sexual intercourse and based on research Azinar (2013) the proportion of teenagers who had sexual intercourse in the city of Semarang was 12.1%^(3,10).

The younger teen sexual intercourse, the greater the risk thereof. Various efforts to prevent young people from sexual intercourse before marriage have been implemented, such as reproductive health counseling, counseling on sexually transmitted infections, HIV / AIDS and drug abuse. Therefore, researcher is interested in analyzing determinants of resilience adolescents for not doing premarital sexual intercourse based on data Integrated Biological and Behavioral Survey (IBBS) in 2013.

Purpose

The purpose of this study is to identify factors related to adolescent resilience for not doing premarital sexual intercourse.

METHODS

This research was a quantitative study using secondary data Integrated Biological and Behavioral Survey (IBBS) in 2013 in which the survey was designed with a cross-sectional study design. The population in this study was the sample population contained in IBBS, 2013, as this study was further analysis of the data IBBS 2013. The target population in this study were all adolescents in grades XI (class 2) High School, both public and private in 5 (five) cities which are Yogyakarta, Tangerang, Pontianak, Samarinda, and Makassar. The sampling unit in this study was adolescent selected as respondents in the survey. The samples used in this study using a sample of all the candidates who meet the criteria of the data contained in IBBS 2013, as many as 2690 respondents.

This data usage has been permitted by Health and Development Research Center, Ministry of Health of the Republic of Indonesia. Variables that have been and are stored in the form of a database program to further analyzed using computer software and carried out in several stages, which are univariable, bivariable, and multivariable analysis. The analysis used in this study was Cox regression analysis with time-dependent covariates.

RESULTS

Based on data analysis, it was found that the proportion of adolescents who have had sexual intercourse before marriage as follows:

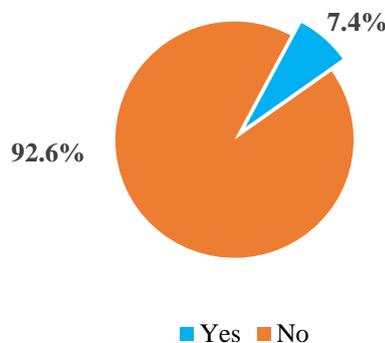


Figure 1. The proportion of adolescent performing premarital sexual intercourse by IBBS 2013

Figure 1 shown that the proportion of adolescents who have had sexual intercourse before marriage was 7.4%.

Table 1. Overview characteristics and adolescent behavior based on IBBS 2013

Variables	Frequency	Percentage
Sex		
- Female	1394	51.8
- Male	1296	48.2
Comprehensive Knowledge about HIV/ AIDS:		
- Comprehensive	439	16.3
- Not Comprehensive	2251	83.7
Living with:		
- Both Parents	2206	82
- One or No Parent	484	18
Father's Education Level:		
- > Senior High School	823	30.6
- ≤ Senior High School	1708	63.5
- No Formal Education	159	5.9
Mother's Education Level:		
- > Senior High School	652	24.2
- ≤ Senior High School	1863	69.3
- No Formal Education	175	6.5
Reproductive Health Education on School:		
- Never	1193	44.3
- At least once	1497	55.7
Health Education About Sexually Transmitted Disease on School:		
- Never	1489	55.4
- At least once	1201	44.6
Health Education about HIV/ AIDS on School:		
- Never	784	29.1
- At least once	1906	70.9
Health Education about drug abuse on School:		
- Never	722	26.8
- At least once	1968	73.2
Peer Education Activity on School:		
- Never	2154	80.1
- At least once	536	19.9
Life Skill Education on School		
- Never	751	27.9
- At least once	1939	72.1
Kissing:		
- Never	1503	55.9
- At least once	1187	44.1
Sexual Arousal Behavior:		
- Never	2189	81.4
- At least once	501	18.6
Smoking:		
- Never	1641	61
- At least once	1049	39
Drunk with alcohol		
- Never	2325	86.4
- At least once	365	13.6
Drug Abuse:		
- Never	2620	97.4
- At least once	70	2.6
Total	2690	100

Overview resilience adolescents to abstain from sexual intercourse before marriage can be seen from the state variable premarital sexual intercourse and duration last for abstaining from premarital sexual intercourse from birth up to 23 years old. Survival function is used to describe the probability of resilience adolescents to abstain from sexual intercourse before marriage, while the hazard function is used to describe the incidence of adolescent sexual intercourse before marriage.

Table 2. Cumulative probability resilience adolescent for not doing premarital sexual intercourse

Time	Number of adolescents who had premarital sexual intercourse	Cumulative	Cumulative probability resilience adolescent for not doing premarital sexual intercourse
9 years	1	1	1
13 years	11	12	0.996
14 years	14	26	0.990
15 years	48	74	0.972
16 years	77	151	0.943
17 years	36	187	0.931
18 years	9	196	0.927
20 years	3	199	0.926

Based on table 2, the number of adolescents who had premarital sexual intercourse until the age of 23 years as many as 199 teenagers. Median resilience adolescents to abstain from sexual intercourse before marriage cannot be calculated because of the number of events premarital sexual relations that occurred less than 50% of the total samples. If seen from the time of the occurrence of premarital sexual intercourse in adolescents, the number of events premarital sexual intercourse occurred on the current 16 years old as many as 77 teenagers. Cumulative probability resilience adolescents to abstain from premarital sexual intercourse until the age of 23 years is equal to 0.926 (92.6%), meaning that 1,000 teenagers are 926 teenagers who survived to abstain from sexual intercourse until the exact age of 23 years.

Prior to the multivariable analysis, assumption test Proportional Hazard (PH) by using time-dependent covariates cox regression. PH assumption test results obtained:

Table 3. Proportional Hazard assumption test with Cox Time-Dependent Covariate

No	Determinants	-2LL	wald	P-value	PH Assumption
1	Sex	2982			Qualified
	T_Cov*Sex		0.490	0.144	
2	Comprehensive Knowledge	3060.3			Qualified
	T_Cov* Comprehensive Knowledge		1.264	0.261	
3	Living with	3059.1			Qualified
	T_Cov*Living with		1.153	0.283	
4	Father's Education Level	3052.7			Qualified
	T_Cov*Father's Edu. Level (>Senior High School)		0.519	0.771	
	T_Cov*Father's Edu. Level (≤Senior High School)		0.259	0.611	
	T_Cov*Father's Edu. Level (No Formal Education)		0.039	0.843	
5	Mother's Education Level	3056.2			Qualified
	T_Cov*Mother's Edu. Level (>Senior High School)		0.234	0.890	
	T_Cov*Mother's Edu. Level (≤Senior High School)		0.013	0.908	
	T_Cov* Mother's Edu. Level (No Formal Education)		0.107	0.743	
6	Reproductive Health Education on School	3061.4			Qualified
	T_Cov* Reproductive Health Education		0.006	0.798	
7	Health Education About STD's on School	3060.7			Qualified
	T_Cov*STD's Education		0.090	0.765	
8	Health Education about HIV/ AIDS on School	3060.3			Qualified
	T_Cov*Health Education HIV/AIDS		0.589	0.443	
9	Health Education about drug abuse on School	3059.7			Qualified
	T_Cov*Drug Abuse Education		1.290	0.256	
10	Peer education	3060.8			Qualified
	T_Cov*Peer education		0.408	0.523	
11	Life skill education	3058.8			Qualified
	T_Cov*Lifeskill Education		0.116	0.733	
12	Kissing	2780.6			Not Qualified
	T_Cov*Kissing		6.826	0.009*	
13	Sexual Arousal Behavior	2663.5			Qualified
	T_Cov* Sexual Arousal Behavior		1.664	0.197	
14	Drug Abuse	3029.8			Qualified
	T_Cov* Drug Abuse		0.041	0.840	
15	Smoking	2961.9			Qualified
	T_Cov*Smoking		0.596	0.440	
16	Drunk With Alcohol	2952			Qualified
	T_Cov*Drunk With Alcohol		0.054	0.815	

*significance on level $\alpha = 0.05$

From Table 3 above, it appears that the variables that do not meet the PH assumption that kissing behavior ($p > 0.05$). Then performed a multivariable analysis of the variables that enter the candidate multivariable Cox regression analysis using time-dependent covariate. Model complete (Gold Standard) and the final model (parsimonious) can be seen in the following table:

Table 5. Parsimonious model of resilience adolescents for not doing premarital sexual intercourse based on IBBS 2013

Determinants	B	SE	HR _{adjusted} (Exp B)	95% CI	p-value
Sex:					
• Female			Reff.		
• Male	0.222	0.174	1.3	0.9 – 1.8	0.201
Father’s Education Level:					
• > Senior High School			Reff.		
• ≤ Senior High School	0.263	0.203	1.3	0.9 – 1.9	0.196
• No Formal Education	0.050	0.367	1.1	0.5 – 2.2	0.891
Mother’s Education Level:					
• > Senior High School			Reff.		
• ≤ Senior High School	-0.234	0.203	0.8	0.5 – 1.2	0.248
• No Formal Education	0.216	0.338	1.2	0.6 – 2.4	0.522
Kissing					
• Never			-	-	
• At Least Once	-7.867	3.732	-	-	0.035*
• T_Cov*Kissing Behavior	0.687	0.254	-	-	0.007*
Sexual Arousal Behavior:					
• Never					
• At least once	2.039	0.196	7.7	5.2 – 11.3	0.0001*
Drug Abuse:					
• Never			Reff.		
• At least once	0.435	0.241	1.6	1.0 – 2.5	0.071
Drunk with Alcohol					
• Never			Reff.		
• At least once	0.420	0.157	1.5	1.1 – 2.1	0.008*

*significance on level $\alpha = 0.05$

Based on the results of selection confounder and interaction variables, then the final model robustness adolescents to abstain from sexual intercourse before marriage are described in Table 5 above. The final model was a parsimonious models with statistical significance at 0.0001 (-2Log Likelihood = 2565.928). From the results of Cox regression Time Dependent covariates multivariable analysis known that variables related to resilience adolescents to abstain from sexual intercourse before marriage was kissing behavior, the behavior of sexual arousal, and behavior influence of alcohol. While variable gender, father's education, mother's education level and the misuse of drugs act as counfounder variables.

From the analysis we found that the behavior of sexual arousal become the most dominant factor associated with resilience adolescents to abstain from sexual intercourse before marriage. Adolescents who have committed sexual arousal risk 7.7 times fail to survive to abstain from sexual intercourse before marriage compared with adolescents who never made sexual arousal (95% CI: 5.2-11.3) after being controlled by the variable gender, level of education father and mother, kissing behavior, drug abuse and drunk behavior due to alcohol. While adolescents who've drunk because alcohol is 1.5 times greater risk of failing to survive to abstain from premarital sexual intercourse than adolescent who have never drunk alcohol (95% CI: 1.1-2.1) after being controlled by variable sex, educational level fathers and mothers, kissing behavior, drug abuse and sexual stimulation. The risk of adolescents who have done differently kiss per unit time, can be explained by the following curve (Figure 2).

Based on Figure 2, on a group of adolescents who have sex, father's education, mother's education level, the behavior of excitatory sexual, drug abuse and drunk with alcohol were the same, the risk of adolescents who've kissed for not viable to abstain from sexual intercourse before marriage continues to increase with increasing time compared to adolescent who have never kissed. At the time of 17-years-old, the risk amounted to 45.2 times fail to survive to abstain from sexual intercourse before marriage than adolescent who have never kissed.

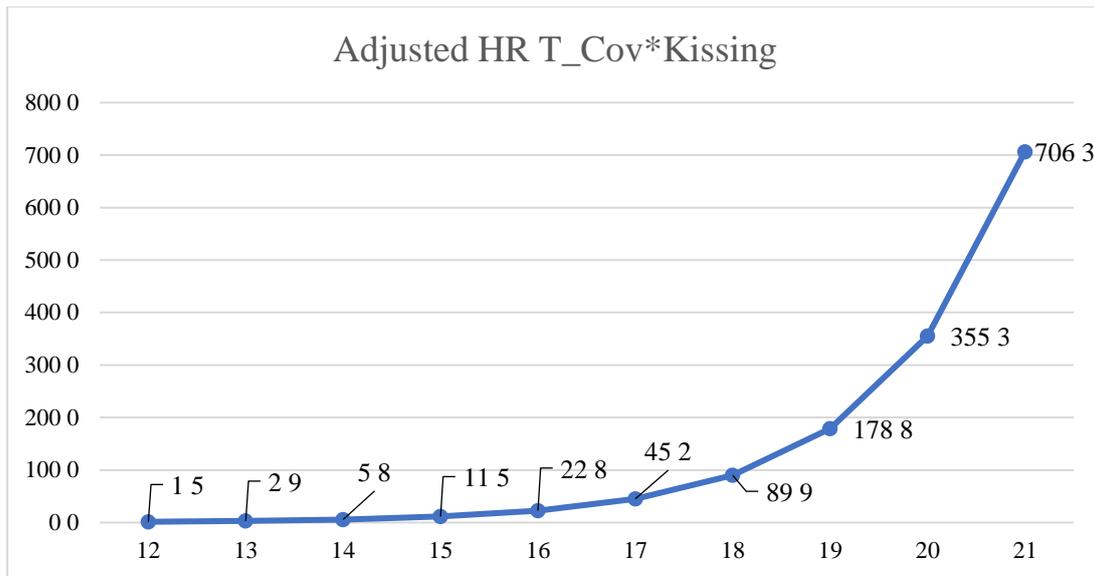


Figure 2. Adjusted hazard ratio time dependent covariance kissing behavior based on adolescent age (data analysis of integrated biologic and behavior survey year 2013)

DISCUSSION

This study has several limitations, among others, can not avoid recall bias that may occur because teenagers forget with a variety of information related to the age of first sexual intercourse. In addition, because the topics in this study tended to taboo for some teenagers, many adolescents tend to answer questions based on the answers expected according to prevailing norms of society, called the socio norm bias. There are still other variables that may be associated with resistance adolescents to abstain from sexual intercourse before marriage cannot be controlled in the analysis of the so-called uncontrolled confounding bias. So that could be the result of statistical analysis in this study have not described the effect of the determinant of the truth because there are the effects of other variables that have not been controlled. The variables include: the relationship and communication patterns of parent-child, pattern of parental control of children, exposure to pornographic media, the attitude of teenagers, parents and peers related to sexuality, as well as other variables that are not included in this study, In this study, the sample design are ignored in the analysis process because researchers did not obtain the data weights (weight). Some experienced missing variable data that may result from the answers of the respondents were less well during the process of data input, resulting analysis is not optimal due to the limited number of samples and the loss of some of the event data (events) that premarital sexual relations thereof.

In adolescence, the sexual urge is felt very big, especially peaking during middle adolescence (14-17 years old). It encourages young people to engage in sexual activity tends to a more active form of physical touches, even sometimes to have sexual intercourse. Most of them have an attitude that does not want to be responsible sexual behavior which they did. The more often adolescent sexual behavior, risk for sexual intercourse before marriage increases. Some sexual activities are common in adolescence that sexual touching, sexual arousal, oral sex, anal sex, masturbation, up to a heterosexual relationship⁽¹¹⁾.

The primary finding of the study by Wlodarski & Dunbar (2014) that purported kissing abilities can influence a potential mate's attractiveness and general desirability, particularly for women in casual sex situations⁽¹²⁾. The amount of the percentage of adolescents who do kiss (lips with lip) may be caused by an infiltration of western culture and acculturation adopted by teenagers from the media from the media television, magazines, and the Internet. The high exposure to media that contains aspects of pornography stimulates adolescent to emulate and do these things. The assumption that kissing is a common thing to do is growing among teenagers. This is evidenced by the growing proportion of teenagers who do kiss, as the research results Prihati (2014) which states that students on Senior High School in Klaten have kiss the lips by 15% and that has done the opposite sex kiss with the tongue of 9%⁽¹³⁾.

According Pangkahila in Soetjningsih (2004) some groups of adolescents are confused to understand about things that can be done and what should not be done by him, among others, may or not do the courting, masturbation, watching together or kiss⁽¹⁴⁾. This confusion leads to a less healthy sexual behavior among adolescents. Finally, many teenagers who had initially intended only to try and finally because the sexual urges

are very strong at a time when adolescents resulted in teenagers are tempted to commit further sexual behavior to sexual intercourse.

Forms of sexual stimulation that teenagers do vary. Based on the research results Prihati (2014) of 56 senior high school students in Klaten obtained teenagers who have been kissing the neck of 3%, groping the body of the opposite sex by 2%, touching the breast of the opposite sex by 2%⁽¹³⁾. While the research results Suwarni (2009) to 348 students in 50 high school/ vocational school in Pontianak City found that 56.9% had had a kiss (kissing), 30.7% kissing the neck (necking), 13.8% did petting, 7.2% perform oral sex and anal sex 5.5%⁽¹⁵⁾.

Usually adolescents show consistent progress in their sexual behavior. In a study of 452 adolescents aged 18 to 25 years old about their sexual experiences found that despite progress in their sexual behavior⁽¹⁶⁾. Kiss fondle precede behavior, and precede sexual intercourse or oral sex. For this reason, a teenager who has never kissed lips tend to make riskier sexual behavior, even to have sexual intercourse.

According Suriawiria (2002) states that alcohol can affect human behavior, including sexual behavior, because the content of methanol in the liquor can cause aggressive behavior, violent, bold, and sometimes it has been unable to control himself, so tend to do negative things like free sex⁽¹⁷⁾. The results showed that the subjects qualitatively rather be doing illicit sex and want to keep repeating the behavior of free sex. Teenagers who had been drunk because alcohol can lower self-control, so it can not be thinking clearly to abstain from sexual intercourse before marriage.

Educational activities or health-related counseling that might not be directly related to the endurance adolescents to abstain from sex before marriage, but it must be through the intermediate variables eg knowledge, perceptions and attitudes toward premarital sexual relations. For that we need more testing whether variables such intermediates are directly related to the endurance adolescents to abstain from sex before marriage.

Kirby & Lepore (2007) states that the community needs to implementation of sex and HIV education programs based on the curriculum, so that the program can be more sustainable⁽⁴⁾. In addition, appropriate suggestions expressed by Romero-estudillo, González-jiménez, Mesa-franco, & García-garcía (2014) that the sexual education should pay attention to gender, because research results reveal that there are differences in the determinants of adolescent sexual intercourse between men and women⁽¹⁸⁾.

Implementation of peer educators conducted by peer counselors who are able to provide information about health and helping peers to identify the problem, so as to make the right decision⁽¹⁹⁾. This is done in an effort to influence the attitude and behavior change to help teenagers in meneyelesaikan own problems. However, based on research conducted by Hull, Hasmi, & Widyantoro (2004) on the implementation of the peer educator appointed mostly not a peer group, only a small proportion aged 15-19 years, most of them older and some have married and stay away school environment⁽²⁰⁾. Even in one of the peer educators aged 22-35 years, so they are more to be authoritarian and more suitable to serve as a mentor than peer educator. Perhaps this has to be one of the causes that causes peer education program in schools should be reevaluated.

The results of the evaluation of the global implementation of Life Skill Education (LSE) conducted by United Nations Children's Fund (2012) states that there is strong evidence that the LSE can develop the knowledge, skills and attitudes among teachers, both in the area of risk and psychosocial skills in general. Another factor is the lack of numbers and the ability of teachers as providers of education, class size does not fit and lack of resources as a barrier to implementation. The evaluation results showed that life skills education program is important in providing psychosocial abilities of students as an essential part of learning to risks problems faced by teenagers⁽²¹⁾.

In Indonesia, the program life skill education has been developed by the Education Ministry since 1997 in the field of HIV / AIDS prevention through education and formation of the Working Group on HIV and AIDS at the ministry level, further preparation of various leaflets, posters and handbooks and modules for HIV prevention and AIDS from the level of the college, high school / vocational school and junior high school through various approaches. Then, based on the workshop held in the National Education Ministry, UNESCO and Plan International in 2006, it was agreed to enhance the guidelines and Module Life skills education for HIV and AIDS prevention for senior high school teachers⁽²²⁾.

In the module was submitted that the provision of life skills education for HIV and AIDS prevention to students high school or equivalent, have a different content emphasis to the other levels. It is given that high-school age group is prone to various problems such as fights (brawl) students and drugs and promiscuity. During this effort to inculcate behavior has been carried out among other subjects through physical education, sport and health, as well as extracurricular activities such as School Health Unit, Youth Redcross, and Scouting. However, because the skills of teachers in the delivery of the message is limited, the attempt is more directed to improving the knowledge and understanding only. Given this life skill education students are expected to increasingly play

an active role in its activities, so that in addition to improved knowledge and understanding, skills students can also be further improved.

CONCLUSION

There was a large percentages of adolescents who abstain from sexual intercourse before marriage until the age of 23 years. Sexual stimulation behavior of adolescent is the most dominant factor associated with adolescents resilience to abstain from sexual intercourse before marriage. The influence of alcohol is one of the factor associated with adolescents resilience to abstain from sexual intercourse before marriage.

Kissing is a factor associated with resistance adolescents to abstain from sex before marriage. Adolescents who have done a kiss at greater risk of not being able to survive for not doing sexual before marriage than adolescent who have never kiss. The magnitude of the risk varies in each unit of time (years).

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