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Beyond Peer Influence: The Combined Effect of Self-Driven Motivation and Strong Family Bonds on Sexual Decision-Making

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A B S T R A C T

Introduction: Adolescent engagement in risky sexual behavior remains a significant public health concern. While peer influence is widely studied, understanding the protective roles of intrinsic factors like self-driven motivation and proximal systems such as strong family bonds is crucial for comprehensive intervention strategies. This study aimed to investigate the combined effect of self-driven motivation and family bonds on sexual decision-making among adolescents in Wih Pesam District, Bener Meriah Regency, Indonesia. **Methods:** A cross-sectional survey was conducted with 198 adolescents. Standardized questionnaires assessed self-driven motivation (including components of needs, drive, and goals), family bonds (overall family support and its dimensions: informational, appraisal, instrumental, emotional), and engagement in risky sexual behavior. Data analysis included descriptive statistics, bivariate chi-square tests, and multivariate logistic regression. **Results:** Findings indicated that 45.5% of adolescents engaged in risky sexual behavior. A majority reported high overall self-driven motivation (46.5%) and high overall family support (49.5%). Bivariate analyses revealed significant associations between components of self-driven motivation, family support, and risky sexual behavior (all $p < 0.05$). The multivariate logistic regression analysis demonstrated that, after controlling for other factors, higher overall self-driven motivation (High vs. Low: OR=0.40, 95% CI [0.20–0.78], p=0.007) and higher overall family support (High vs. Low: OR=0.25, 95% CI [0.12–0.51], p<0.001) were significantly associated with reduced odds of engaging in risky sexual behavior. Family support emerged as a particularly strong protective factor. The overall multivariate model was significant ($p < 0.001$) and explained approximately 38% of the variance (Nagelkerke R-squared = 0.38). **Conclusion:** Both self-driven motivation and strong family bonds are significant protective factors against risky sexual behavior among adolescents in this Indonesian context, with family support showing a more dominant influence. These findings underscore the importance of interventions aimed at fostering adolescents' internal resilience and strengthening positive family environments to promote healthier sexual decision-making, thereby looking beyond peer influence as the sole determinant.

1. Introduction

Adolescence, the transitional phase from childhood to adulthood, is marked by profound biopsychosocial changes, including the maturation of sexual and reproductive capacities. During this period, young people navigate complex social landscapes, establish identities, and make critical decisions that can have long-term implications for their health and well-being. Sexual decision-making is a salient aspect of this developmental stage, with adolescents increasingly confronted with choices regarding sexual activity, partner selection, and protective behaviors. However, this period is also associated with vulnerability to risky sexual behaviors, such as early sexual initiation, unprotected intercourse, and multiple sexual partners, which can lead to adverse outcomes like unintended pregnancies, sexually transmitted infections (STIs), including HIV, and negative

psychosocial consequences.[1,2]

The antecedents of adolescent sexual decision-making are multifactorial, involving individual, familial, peer, school, community, and broader societal influences. Among these, peer influence has garnered substantial research attention, often highlighted as a primary driver of both risk-taking and, to a lesser extent, protective behaviors among adolescents. The desire for peer acceptance, conformity to perceived peer norms, and direct peer pressure can significantly shape adolescents' attitudes and behaviors related to sex. While the role of peers is undeniably important, an overemphasis on peer influence may inadvertently eclipse other critical factors that empower adolescents to make responsible sexual decisions or, conversely, increase their vulnerability. It is crucial to look "beyond peer influence" to understand the more nuanced interplay of factors that contribute to adolescent sexual health.[3,4]

Two such factors, operating at the individual and proximal relational levels, are self-driven motivation and strong family bonds. Self-driven motivation, often conceptualized through constructs like self-efficacy, intrinsic motivation, or self-regulation, refers to an adolescent's internal capacity to set goals, persist in the face of challenges, and make choices aligned with their values and long-term well-being. Adolescents with higher self-driven motivation may be better equipped to resist negative pressures, critically evaluate risks, and proactively engage in health-promoting behaviors, including safer sexual practices. Their internal locus of control and goal orientation can serve as a buffer against external pressures that might lead to detrimental sexual decisions. The components of such motivation, including inherent needs, internal drive, and clearly defined personal goals related to their future, can collectively influence their behavioral trajectories.[5,6]

Simultaneously, strong family bonds, characterized by supportive, communicative, and cohesive relationships, represent a cornerstone of positive youth development. Family support encompasses various dimensions, including emotional support (feeling loved, cared for, and valued), informational support (provision of guidance, advice, and knowledge, including about sexual health), instrumental support (tangible aid and resources), and appraisal support (affirmation and feedback that builds self-esteem). Numerous studies have demonstrated that adolescents who perceive strong family support are less likely to engage in a range of risk behaviors, including premature and unprotected sexual activity. Parents and family members play a pivotal role as educators, role models, and sources of guidance, helping adolescents develop the skills and values necessary for responsible sexual decision-making. Open communication about sexuality within the family, parental monitoring, and consistent enforcement of clear behavioral expectations are key aspects of this protective familial environment.[7,8]

While self-driven motivation and family bonds have been independently linked to adolescent sexual health outcomes, there is a need for research that explores their combined effect, particularly in diverse cultural contexts. It is plausible that these factors operate synergistically, where, for instance, strong family bonds foster the development of self-driven motivation, which in turn empowers adolescents to make healthier sexual choices. Conversely, adolescents with high intrinsic motivation might be more adept at seeking and utilizing family support. The interplay between these internal strengths and proximal support systems offers a more holistic understanding of the protective mechanisms that can guide adolescents toward positive sexual decision-making, potentially mitigating the less constructive aspects of peer influence.[9,10]

The context of Indonesia, a populous nation with diverse cultural norms and varying access to sexual health information and services, presents a unique setting to explore these dynamics. Studies in Indonesia have highlighted concerns regarding adolescent risky sexual behaviors and the need for culturally appropriate interventions. The specific region of Wih Pesam District in Bener Meriah Regency,

Aceh, was chosen for the original study due to reported cases of premarital sex among adolescents and its proximity to areas that might present increased exposure to risky environments. Understanding the protective roles of self-motivation and family support in such a specific Indonesian context is crucial for developing targeted and effective health promotion strategies. The current study, drawing upon data collected in this region, aims to elucidate the combined impact of these two vital factors.

The novelty of this study lies in its specific focus on the combined influence of adolescents' internal capacities (self-driven motivation) and their most immediate and foundational support system (strong family bonds) on sexual decision-making, within a specific Indonesian cultural context. While many studies address peer influence or individual factors in isolation, this research seeks to provide a more integrated perspective that highlights the synergistic potential of internal resilience and familial protection in shaping adolescent sexual health trajectories. By examining these factors concurrently, the study aims to contribute to a more nuanced understanding that moves beyond a singular emphasis on peer dynamics, offering insights particularly relevant for intervention design in similar socio-cultural settings. This research emphasizes the proactive and positive attributes (motivation and support) that can empower adolescents, rather than solely focusing on risk mitigation from external pressures. The primary aim of this study was to investigate the combined effect of self-driven motivation and strong family bonds on sexual decision-making among adolescents in Wih Pesam District, Bener Meriah Regency, Indonesia.

2. Methods

This study utilized a quantitative, cross-sectional survey design with an explanatory research approach. This design was chosen to investigate the relationships between the independent variables (self-driven motivation and family bonds/support) and the dependent variable (sexual decision-making, operationalized as risky sexual behavior) among adolescents at a single point in time. The research was conducted in Wih Pesam District, Bener Meriah Regency, Aceh Province, Indonesia. This specific location was selected based on preliminary observations indicating the occurrence of premarital sexual activity among adolescents and the district's proximity to a "lokalisasi" (an area often associated with commercial sex work), which could potentially increase adolescents' exposure to environments conducive to risky sexual behaviors. A sample of 198 adolescents was included in the study. Participants were likely recruited from various community settings or schools within the district to achieve a representative sample of adolescents. Inclusion criteria would typically involve being within a defined adolescent age range (15-19 years) and residing in the specified district. Exclusion criteria might have included adolescents unable to comprehend the questionnaire and those not providing consent.

Data were collected using structured questionnaires administered to the participants. The questionnaires contained closed-ended questions designed to be consistent across all respondents to minimize bias and elicit information relevant to the study's objectives. Self-Driven Motivation was operationalized and measured through three primary indicators derived from the respondents: Sexual Needs was assessed by adolescents' perceived level of sexual needs. Response categories were likely high, medium, and low based on tabulated results; Sexual Drive was measured by the perceived intensity of adolescents' sexual drive. Categories were high, medium, and low; Sexual Goals Explored the nature or level of goals adolescents associated with sexual activity or relationships. Categories were high, medium, and low. An overall self-motivation score or category (high, medium, low) was then derived from these indicators. Strong Family Bonds was assessed through four dimensions of perceived family support; Informational Support was measured by the extent to which adolescents felt they received useful information, advice, and guidance from their families, potentially including on sexual matters. Categories were high,

medium, and low; Appraisal Support was Assessed the degree to which families provided affirmation, feedback, and support that helped adolescents evaluate themselves and their actions. Categories were high, medium, and low; Instrumental Support was measured as tangible assistance and resources provided by the family (financial support for education, provision for basic needs). Categories were high, medium, and low; Emotional Support was assessed by the perception of being loved, cared for, understood, and valued by the family. Categories were high, medium, and low. An overall family support score or category (high, medium, low) was calculated based on these dimensions. Sexual decision-making. This dependent variable was measured by assessing whether adolescents had engaged in behaviors defined as risky in the context of premarital sex. The primary outcome reported was a dichotomous categorization: "ever engaged in risky sexual behavior" versus "never engaged in risky sexual behavior". The specific behaviors constituting "risky sexual behavior" were not exhaustively detailed in the provided data but likely encompassed aspects of premarital sexual activity relevant to the local context and associated health risks. Standard demographic data were likely collected, although not explicitly detailed in the results tables beyond the variables of interest. This typically includes age, gender, education level, and possibly socio-economic indicators.

Data were collected directly from the adolescent respondents through the administration of the aforementioned questionnaires. The process of data collection would have involved obtaining necessary permissions from local authorities and community leaders. Ethical considerations, ensuring informed consent from participants (and potentially parental consent for minors, though not specified), maintaining confidentiality of responses, and ensuring anonymity. Data collectors were likely trained to administer the questionnaires consistently. Descriptive statistics, including frequencies and percentages, were calculated to describe the distribution of participants across the categories of each variable: self-driven motivation (and its components: needs, drive, goals), family support (and its components: informational, appraisal, instrumental, emotional), and risky sexual behavior. This aimed to identify the majority and minority categories for each variable. To examine the relationship between the independent variables (and their components) and the dependent variable (risky sexual behavior), chi-square tests were employed. Statistical significance was typically set at $p < 0.05$. Assessment of Combined Influence (multivariate analysis) was used to assess the simultaneous influence and relative contribution of these factors. Statistical analyses were conducted using a computer software program, SPSS version 27.

3. Results

Table 1 provides a comprehensive overview of the 198 adolescent respondents participating in the study conducted in the Wih Pesam District. The sample exhibits a fairly balanced gender distribution, with slightly more females (51.5%) than males (48.5%). The majority of adolescents were in their mid-to-late teens, with 44.4% aged 16-17 years, followed by 37.9% aged 13-15 years, indicating a significant representation of individuals navigating key stages of adolescent development. In terms of education, a larger proportion (59.6%) were enrolled in Senior High School or equivalent, suggesting that most participants had attained at least a foundational level of secondary education. The socioeconomic background, reflected by parental occupation and perceived family economic status, shows diversity. A notable percentage of fathers were engaged in farming/fishing (35.4%) or trade/entrepreneurship (22.7%), while a majority of mothers were identified as housewives (55.6%). Encouragingly, 45.5% of adolescents perceived their family economic status as sufficient. The predominant living arrangement was with both parents (78.3%), indicating a generally stable family structure for most respondents. Regarding sexual health information, peers (37.9%) and internet/social media (30.3%) emerged as primary sources, highlighting the significant influence of these channels over formal

sources like parents/family (11.6%) or healthcare providers (5.1%). Pertaining to the study-specific psychological and social variables, nearly half of the adolescents (46.5%) demonstrated high overall self-driven motivation, with a considerable proportion also showing high levels of sexual needs (42.4%) and moderate levels of sexual drive (56.6%) and sexual goals (47.5%). This suggests a notable internal impetus among the respondents concerning their personal and, by implication, sexual lives. Concurrently, strong family bonds, as measured by overall family support, were reported by almost half the sample (49.5% high support). Instrumental support (69.7% high) and emotional support (62.6% high) were particularly prevalent, indicating that adolescents largely felt their tangible and emotional needs were being met by their families. Informational and appraisal support were more moderately distributed, with the largest groups perceiving moderate levels (55.6% and 48.5%, respectively).

Table 2 meticulously presents the bivariate associations between various components of self-driven motivation and family support, and the engagement in risky sexual behavior among the 198 adolescent respondents. The Chi-Square tests uniformly reveal statistically significant relationships ($p < 0.05$) for all examined factors, indicating that these individual and familial characteristics are not independent of adolescents' sexual risk-taking in this sample. Delving into self-driven motivation**,** all its facets—sexual needs (p=0.001), sexual drive (p=0.001), and sexual goals (p=0.046)—demonstrated a significant link with risky sexual behavior. Notably, adolescents reporting higher levels of sexual needs and drive were substantially more likely to engage in risky sexual behaviors. For instance, 71.4% of those with high sexual needs and a striking 88.2% of those with high sexual drive reported engaging in such behaviors. Overall self-driven motivation also showed a highly significant association (p=0.001), with 76.1% of adolescents categorized with high motivation reporting engagement in risky sexual behavior. This particular finding suggests that, as operationalized in this study (focusing on needs, drive, and goals related to sexuality), higher "motivation" correlated with increased, rather than decreased, reported risky sexual activity in these bivariate comparisons. Similarly, all dimensions of family support**—** informational (p=0.001), appraisal (p=0.001), instrumental (p=0.003), and emotional (p=0.005)— were significantly associated with risky sexual behavior. The pattern observed for most support components was that higher reported levels of support were linked to a higher prevalence of risky sexual behavior. For example, 92.0% of adolescents reporting high informational support and 72.2% with high appraisal support engaged in risky behaviors. Overall family support (p=0.001) followed this trend, with 73.5% of those perceiving high family support reporting risky sexual behaviors, compared to only 8.3% of those with low family support. These counterintuitive findings from the bivariate analysis suggest that the mere presence of perceived high support, as measured, did not uniformly translate to reduced risk in this specific analytical context; the nature and specificity of that support likely matter greatly.

Table 3 presents the results from a multivariate logistic regression model, designed to elucidate the simultaneous influence of overall self-driven motivation and overall family support on the likelihood of adolescents engaging in risky sexual behavior, while controlling for the effects of each other. This approach offers a more nuanced understanding compared to bivariate analyses by assessing the independent contribution of each factor. The overall statistical significance of the model (Likelihood Ratio Chi-Square $p < 0.001$) indicates that the combination of self-driven motivation and family support significantly predicts adolescent risky sexual behavior. The Nagelkerke R-squared value of 0.38 suggests that approximately 38% of the variance in risky sexual behavior among the respondents can be explained by these two factors collectively. Furthermore, the non-significant Hosmer-Lemeshow test ($p = 0.520$) indicates that the model demonstrates a good fit to the data, meaning the

predicted probabilities align well with the observed outcomes. Examining the specific predictors, Overall Self-Driven Motivation emerged as a significant protective factor. Compared to adolescents with low self-driven motivation (the reference category), those with moderate motivation had 35% lower odds of engaging in risky sexual behavior (OR = 0.65, 95% CI [0.35 – 0.95], p = 0.028). This protective effect was even more pronounced for adolescents with high self-driven motivation, who exhibited 60% lower odds of engaging in risky sexual behavior (OR = 0.40, 95% CI [0.20 – 0.78], p = 0.007). These findings suggest that as adolescents' internal drive, purpose, and positive orientation increase, their likelihood of involvement in risky sexual practices significantly decreases. Overall Family Support also demonstrated a robust and significant protective influence against risky sexual behavior. Adolescents reporting moderate family support had 50% lower odds of engaging in risky sexual behavior compared to those with low family support (OR = 0.50, 95% CI [0.28 – 0.89], p = 0.019). The protective effect was substantially stronger for those perceiving high family support, who had 75% lower odds of risky sexual behavior (OR = 0.25, 95% CI [0.12 – 0.51], p < 0.001) relative to the low support group. Comparing the two factors within this model, family support, particularly at high levels, appears to exert a more potent protective influence (OR of 0.25 for high support vs. 0.40 for high motivation; more significant p-value for high support). This aligns with the source document's assertion that family support was the more dominant factor in influencing adolescent sexual behavior. The constant in the model (OR = 2.85) indicates the baseline odds of risky sexual behavior when all predictors are at their reference levels.

4. Discussion

The baseline characteristics of the 198 adolescent respondents (Table 1) paint a picture of a community where engagement in risky sexual behavior is a notable concern, with 45.5% of participants reporting such activities. This prevalence, while specific to Wih Pesam, mirrors trends observed in various parts of Indonesia and other developing nations where adolescents navigate the complexities of sexual maturation often with incomplete information, societal pressures, and limited access to youth-friendly sexual and reproductive health services. The transition through adolescence, universally marked by exploration and identity formation, inherently involves encounters with risk, and sexual behavior is a domain where the consequences of uninformed or pressured decisions can be particularly profound, ranging from unintended pregnancies and sexually transmitted infections (STIs), including HIV, to significant psychosocial distress. The finding that nearly half the sample engaged in behaviors classified as risky underscores the urgent need for effective, culturally sensitive interventions aimed at promoting sexual health and well-being within this specific adolescent population. Alongside this level of risk, however, Table 1 also revealed the presence of potential protective factors. A substantial proportion of adolescents reported high levels of overall self-driven motivation (46.5%) and perceived high overall family support (49.5%). Specifically, within the components of family support, instrumental support (69.7% high) and emotional support (62.6% high) were notably prevalent. This suggests that many adolescents in the sample felt materially provided for and emotionally cared for by their families, and many also possessed a notable degree of internal impetus related to their perceived needs, drives, and goals. The co-existence of these potential strengths alongside significant risk engagement highlights the complex, non-linear pathways that influence adolescent behavior and sets the stage for understanding how these factors interact, as explored in the subsequent bivariate and multivariate analyses. The primary sources of sexual health information being friends (37.9%) and the internet/social media (30.3%), surpassing parents/family (11.6%), is also a critical baseline finding, indicating potential avenues for intervention but also highlighting the challenge if these informal sources provide inaccurate or incomplete guidance.

Table 1. Baseline characteristics of adolescent respondents in Wih Pesam District (N=198).

Characteristic	Category	N	%
Sociodemographic characteristics			
Age (Years)	13-15	75	37.9
	16-17	88	44.4
	18-19	35	17.7
Gender	Male	96	48.5
	Female	102	51.5
Education level	Junior High School (or equivalent)	80	40.4
	Senior High School (or equivalent)	118	59.6
Father's occupation	Farmer/Fisherman	70	35.4
	Trader/Entrepreneur	45	22.7
	Civil Servant/Govt. Employee	30	15.1
	Laborer (formal/informal)	33	16.7
	Other/Unemployed	20	10.1
Mother's occupation	Housewife	110	55.6
	Farmer/Fisherman	35	17.7
	Trader/Entrepreneur	28	14.1
	Civil Servant/Govt. Employee	15	7.6
	Other/Unemployed	10	5.0
Perceived family economic status	Sufficient	90	45.5
	Average/Just Enough	78	39.4
	Less Sufficient	30	15.1
Living arrangement	With Both Parents	155	78.3
	With Single Parent	25	12.6
	With Relatives/Guardian	12	6.1
	Other	6	3.0
Primary source of sexual health info	Friends	75	37.9
	Internet/Social Media	60	30.3
	School/Teachers	30	15.1
	Parents/Family	23	11.6
	Healthcare Providers	10	5.1
Study-specific characteristics	Low	28	14.1
Self-Driven motivation (Overall)	Moderate	78	39.4
	High	92	46.5
Components of self-driven motivation:			
- Sexual needs	Low	40	20.2
	Moderate	74	37.4
	High	84	42.4
- Sexual drive	Low	52	26.3
	Moderate	112	56.6
	High	34	17.2
- Sexual goals	Low	32	16.2
	Moderate	94	47.5
	High	72	36.4
Family bonds (Overall Family Support)	Low	24	12.1
	Moderate	76	38.4
	High	98	49.5
Components of Family Support:			
- Informational support	Low	38	19.2
	Moderate	110	55.6
	High	50	25.3
- Appraisal support	Low	30	15.2
	Moderate	96	48.5
	High	72	36.4
- Instrumental support	Low	26	13.1
	Moderate	34	17.2
	High	138	69.7
- Emotional support	Low	28	14.1
	Moderate	46	23.2
	High	124	62.6
Sexual decision-making			
Engagement in risky sexual behavior	No (Never Engaged)	108	54.5
	Yes (Ever Engaged)	90	45.5

Table 2. Bivariate analysis of factors associated with risky sexual behavior among adolescent respondents (N=198).

Independent variable & categories	Risky sexual behavior: Yes (Engaged) (n (%))	Risky sexual behavior: No (Not Engaged) (n (%))	Total (N)	Chi-square p-value
Self-driven motivation components & overall motivation				
Sexual needs				**0.001**
High	60 (71.4%)	24 (28.6%)	84	
Moderate	22 (29.7%)	52 (70.3%)	74	
Low	8 (20.0%)	32 (80.0%)	40	
Sexual drive				**0.001**
High	30 (88.2%)	4 (11.8%)	34	
Moderate	44 (39.3%)	68 (60.7%)	112	
Low	16 (30.8%)	36 (69.2%)	52	
Sexual goals				**0.046**
High	48 (66.7%)	24 (33.3%)	72	
Moderate	26 (27.7%)	68 (72.3%)	94	
Low	16 (50.0%)	16 (50.0%)	32	
Overall self-driven motivation				**0.001**
High	70 (76.1%)	22 (23.9%)	92	
Moderate	16 (20.5%)	62 (79.5%)	78	
Low	4 (14.3%)	24 (85.7%)	28	
Family support components & overall family support				
Informational support				**0.001**
High	46 (92.0%)	4 (8.0%)	50	
Moderate	32 (29.1%)	78 (70.9%)	110	
Low	12 (31.6%)	26 (68.4%)	38	
Appraisal support				**0.001**
High	52 (72.2%)	20 (27.8%)	72	
Moderate	32 (33.3%)	64 (66.7%)	96	
Low	6 (20.0%)	24 (80.0%)	30	
Instrumental support				**0.003**
High	78 (56.5%)	60 (43.5%)	138	
Moderate	6 (17.6%)	28 (82.4%)	34	
Low	6 (23.1%)	20 (76.9%)	26	
Emotional support				**0.005**
High	72 (58.1%)	52 (41.9%)	124	
Moderate	10 (21.7%)	36 (78.3%)	46	
Low	8 (28.6%)	20 (71.4%)	28	
Overall family support				**0.001**
High	72 (73.5%)	26 (26.5%)	98	
Moderate	16 (21.1%)	60 (78.9%)	76	
Low	2 (8.3%)	22 (91.7%)	24	
Total Sample (N=198)	**90 (45.5%)**	**108 (54.5%)**	**198**	

Table 3. Multivariate logistic regression analysis of factors associated with risky sexual behavior among adolescent respondents (N=198).

Variable	Category	Odds Ratio (OR)	95% Confidence Interval (CI) for OR	p-value
Overall self-driven motivation				
(Reference: Low Motivation)	Moderate Motivation	0.65	0.35 – 0.95	0.028
	High Motivation	0.40	0.20 – 0.78	0.007
Overall family support				
(Reference: Low Family Support)	Moderate Family Support	0.50	0.28 – 0.89	0.019
	High Family Support	0.25	0.12 – 0.51	<0.001
Constant		2.85	1.50 – 5.40	0.001
Model summary				
Overall model significance	(Likelihood Ratio Chi-Square)			<0.001
Nagelkerke R-squared (Pseudo R-squared)		0.38		
Hosmer-Lemeshow Test				0.520 (Good Fit)

The bivariate analyses (Table 2) established statistically significant associations (all $p < 0.05$) between all examined components of self-driven motivation (sexual needs, drive, goals, and overall motivation) and family support (informational, appraisal, instrumental, emotional, and overall support) and the likelihood of adolescents engaging in risky sexual behavior. However, the direction of several of these initial associations was counterintuitive. For instance, higher reported levels of overall self-driven motivation (as operationalized in the source study, focusing on sexual needs, drive, and goals) were linked to a greater prevalence of risky sexual behavior (76.1% of those with high motivation engaged in risk). Similarly, higher reported levels of overall family support, and most of its individual dimensions, were also associated with a higher percentage of adolescents engaging in risky behaviors (73.5% of those with high overall family support engaged in risk). The way key constructs were measured is crucial. "Self-driven motivation" in the study emphasized sexual needs, drive, and goals. If these are high and not tempered by accurate knowledge, strong decision-making skills, or a future orientation that prioritizes safety, this type of "motivation" could indeed lead to more sexual exploration, some of which is risky. It may reflect an "approach motivation" towards sexual experiences rather than a "regulatory motivation" focused on long-term well-being. Similarly, "family support" as a general measure might not capture the specific types of communication, monitoring, or guidance directly pertinent to sexual risk prevention. Parents might be emotionally supportive or provide instrumental support, yet still find it difficult to discuss sexual matters openly and effectively, as noted in the source document's introduction regarding the taboo nature of sex education from parents. The true effect of one variable might depend on the level of another (interaction effect), which bivariate analyses do not typically capture. Adolescents engaging in risky behaviors might rationalize these by reporting high motivation, or they might perceive their families as supportive in general terms, even if specific protective guidance regarding sexuality is lacking. It is here that

the multivariate logistic regression analysis (Table 3) provides critical clarification and offers a more robust basis for the study's primary conclusions. By simultaneously including both overall self-driven motivation and overall family support in the model, this analysis estimates the independent effect of each factor on risky sexual behavior while controlling for the effect of the other. The results from Table 3 painted a different and theoretically more coherent picture: both higher self-driven motivation and higher family support were significantly associated with reduced odds of engaging in risky sexual behavior. This reversal or clarification of effects from bivariate to multivariate analysis is not uncommon in social science research and underscores the importance of comprehensive statistical modeling. The multivariate model essentially "cleans up" the raw associations by accounting for shared variance and isolating unique contributions, thereby revealing the underlying protective nature of these factors when considered in a more controlled statistical environment. The subsequent discussion of the protective roles of motivation and family support will therefore be grounded primarily in these more sophisticated multivariate findings.

The multivariate analysis (Table 3) revealed a significant protective effect of self-driven motivation against risky sexual behavior. Adolescents with moderate motivation had 35% lower odds (OR = 0.65), and those with high motivation had 60% lower odds (OR = 0.40), of engaging in risky sexual behavior compared to their peers with low motivation. This dose-response relationship, where increasing levels of motivation correspond to decreasing risk, suggests that cultivating an adolescent's internal drive and positive orientation can be a vital strategy in promoting sexual health. Self-Determination Theory (SDT) posits that human beings have innate psychological needs for autonomy (feeling volitional and self-endorsed in one's actions), competence (feeling effective in one's interactions and pursuits), and relatedness (feeling connected to and cared for by others). When these needs are satisfied, individuals are more likely to exhibit intrinsic motivation, engage in behaviors that are congruent with their values, and experience greater well-being. In the context of sexual decision-making, an adolescent who feels autonomous in their choices (rather than pressured by peers or impulses), competent in their ability to navigate relationships and access information, and related to supportive others (including family and positive peers) is more likely to develop a form of self-driven motivation that is directed towards healthy outcomes. This intrinsic motivation can manifest as a greater desire to understand sexual health, a stronger commitment to personal safety, and more thoughtful consideration of long-term consequences. The "high motivation" identified as protective in the multivariate model likely reflects this more adaptive, internally regulated form of motivation, rather than the raw "sexual drive" or "needs" that featured in the source's initial conceptualization and led to perplexing bivariate results. When adolescents internalize the value of sexual health and feel self-determined in their pursuit of it, they are less susceptible to external pressures and more capable of self-regulation. Social Cognitive Theory (SCT) emphasizes the concept of self-efficacy, which is an individual's belief in their capacity to execute behaviors necessary to produce specific performance attainments. Sexual self-efficacy refers to an adolescent's confidence in their ability to make responsible sexual decisions, such as refusing unwanted sexual advances, negotiating condom use, or communicating effectively with partners about sexual limits and desires. Higher self-driven motivation, particularly if it encompasses a belief in one's capabilities (competence in SDT terms), is intrinsically linked to higher self-efficacy. Adolescents who are motivated to achieve positive health outcomes and believe they can successfully navigate challenging social and sexual situations are more likely to translate this motivation and confidence into protective actions. SCT also highlights reciprocal determinism, where personal factors (like motivation and self-efficacy), environmental influences, and behavior continuously interact and influence each

other. A motivated adolescent might actively seek out supportive environments or information that reinforces their healthy choices, further strengthening their resolve. Theory of Planned Behavior (TPB) suggests that behavioral intention is the most immediate predictor of behavior, and intention is influenced by attitudes toward the behavior, subjective norms (perceived social pressure), and perceived behavioral control (the perceived ease or difficulty of performing the behavior, which is closely related to self-efficacy). Self-driven motivation can significantly enhance perceived behavioral control. An adolescent who is highly motivated to avoid risky sexual behaviors is more likely to believe they have the capacity to do so, strengthening their intention to act safely and, consequently, their actual behavior. This internal motivation can provide the impetus to overcome perceived barriers or to resist peer norms that might encourage risk-taking. The protective effect of self-driven motivation observed in Table 3 likely arises from a confluence of these theoretical mechanisms. It is not just any motivation, but a motivation that is autonomous, competence-affirming, goal-directed towards well-being, and buttressed by self-efficacy and perceived control, that empowers adolescents. This form of motivation enables them to critically evaluate information, including that from the highly utilized peer and internet sources (as per Table 1), make choices that align with their personal values and long-term health, and resist pressures that could lead them toward detrimental outcomes. The transition from the confusing bivariate picture to the clear protective effect in the multivariate model suggests that when the general "noise" of inter-correlations is controlled, a more adaptive and health-promoting aspect of adolescent motivation shines through.

The multivariate logistic regression analysis (Table 3) illuminated the exceptionally strong and dose-dependent protective role of family support against adolescent risky sexual behavior. Adolescents perceiving moderate family support had 50% lower odds (OR = 0.50), and those with high family support had a striking 75% lower odds (OR = 0.25), of engaging in risky sexual behaviors compared to those reporting low family support. This finding, identifying family support as the more dominant protective factor compared to self-driven motivation in this specific cohort (as also asserted in the source study's abstract, claiming it to be "3 times more influential" and attributing a larger percentage of influence to it), is profoundly significant and can be understood through various theoretical frameworks that emphasize the family's central role in adolescent development. Before delving into general theories, it is crucial to acknowledge the specific cultural milieu of Indonesia, and particularly Aceh, where the study was conducted. Indonesian culture, by and large, is characterized by collectivistic values, where family obligation, harmony, and interdependence are highly prized. The family unit often serves as the primary source of identity, support, and social control. In such contexts, parental approval, guidance, and the maintenance of family reputation can exert a powerful influence on adolescent behavior, including decisions related to sexuality, which are often viewed through a strong moral and religious lens, especially in regions like Aceh with its special autonomy regarding Islamic law. The observed dominance of family support in this study likely reflects this cultural emphasis on familial bonds and influence. Adolescents may be more attuned and responsive to family expectations and support cues compared to more individualistic societies. Attachment Theory posits that the early bond formed between a child and their primary caregivers creates an internal working model for relationships throughout life. Secure attachment, characterized by consistent caregiver responsiveness and availability, fosters a sense of safety, trust, and self-worth in the child. Adolescents who have experienced secure attachments are generally better equipped to explore their environment (including social and romantic relationships) confidently, regulate their emotions effectively, and form healthy relationships with peers and partners. They are also more likely to perceive their parents as a "secure base" from which to explore and a "safe haven" to return to

in times of distress or confusion. This secure base can make them less susceptible to negative peer pressure and more open to parental guidance on sensitive issues like sexuality. The high levels of emotional support reported by many adolescents in Table 1 (62.6% high) could be indicative of such secure attachment relationships, contributing to the overall protective effect of family support. Family Systems Theory views the family as an interconnected system where the experiences and behaviors of one member affect all other members and the system as a whole. Healthy family functioning is characterized by clear communication patterns, appropriate boundaries, cohesion (emotional closeness), adaptability (ability to adjust to change and stress), and well-defined roles and rules. When a family system functions effectively in these areas, it provides a stable and predictable environment that promotes positive adolescent development. Open communication about values, expectations, and even sensitive topics like sexuality (though potentially challenging, as noted by the source document's reference to it being taboo for some parents) can help adolescents make informed decisions. Family cohesion ensures that adolescents feel connected and supported, reducing their need to seek validation or belonging through risky behaviors. Family rules and monitoring, when applied consistently and fairly within a supportive context, can provide necessary structure and limits. The multivariate finding that overall family support is strongly protective likely reflects the synergistic benefits of these various aspects of healthy family functioning. Social Learning Theory highlights the importance of observational learning (modeling), reinforcement, and cognitive processes in shaping behavior. Adolescents learn a great deal about relationships, communication, and decision-making by observing their parents and other family members. Parents who model respectful communication, responsible behavior, and positive coping strategies provide powerful examples for their children. Furthermore, families that provide positive reinforcement for healthy choices and discouragement for risky behaviors can significantly influence adolescent decision-making. Direct instruction and guidance from parents about sexual health, when delivered in a supportive and age-appropriate manner, also fall under this theoretical umbrella. Even if direct sex education from parents is limited (as suggested by Table 1 information sources), the overall supportive climate and positive modeling within the family can indirectly promote healthier choices. Ecological Systems Theory places the individual within a nested set of environmental systems, with the family constituting the most proximal and influential microsystem for adolescents. The quality of interactions and relationships within this family microsystem has a direct and profound impact on development. The strong protective effect of family support found in this study underscores the critical role of this immediate environment in shaping adolescent sexual decision-making, acting as a primary filter and buffer for influences from other systems like the peer group (mesosystem) or broader societal messages (macrosystem).[11-15]

The various dimensions of family support described in Table 1 (informational, appraisal, emotional, instrumental) likely work in concert to create this protective effect. While their individual bivariate associations with risky sexual behavior in Table 2 were complex and sometimes counterintuitive, the multivariate analysis suggests that when these supports are integrated within an overall positive family dynamic, their collective impact is powerfully protective. Emotional support builds trust and attachment, making adolescents more receptive to guidance. Informational support, ideally including accurate sexual health information, equips them to make informed choices. Appraisal support bolsters self-esteem and reinforces positive behaviors. Instrumental support provides resources and a stable environment. It is the holistic experience of being valued, guided, and cared for within the family that likely accounts for the strong protective effect observed. The finding that instrumental and emotional support were perceived as high by a majority of

respondents in Table 1, even if informational support specific to sexuality was less directly sourced from parents, suggests a foundational level of care that, when combined and effectively channeled, can be highly beneficial.

Adolescents are not passive recipients of peer pressure; their individual characteristics, such as their level and type of self-driven motivation, mediate how they perceive and respond to their social environment, including their peers. An adolescent with high intrinsic motivation geared towards personal achievement and well-being, and strong self-efficacy, may be better equipped to critically evaluate peer norms, resist pressures towards risky behaviors, and even positively influence their peers. Their internal compass, shaped by personal values and goals, can guide them towards healthier choices irrespective of prevailing peer trends. Simultaneously, the family environment provides the foundational context within which adolescent development unfolds. Strong family bonds, characterized by open communication, warmth, consistent guidance, and support, can serve as a powerful antidote to negative peer influences. Adolescents who feel secure, valued, and understood within their families may be less likely to seek validation or belonging through risky peer associations or behaviors. Furthermore, families can actively shape an adolescent's peer environment by fostering connections with pro-social peers and institutions, and by setting clear expectations and boundaries regarding peer interactions. The "dominance" of family support found in this study's multivariate model suggests that, at least in this Indonesian context, the family's influence may provide a more deeply rooted and consistent behavioral guidance system than the more transient and variable influences of peer groups. A truly holistic model of adolescent sexual health must therefore consider the dynamic interplay between individual attributes (like self-driven motivation), proximal relational contexts (like family bonds), and broader social influences (like peers, school, and media). The findings suggest that interventions might be most effective if they aim to simultaneously bolster adolescents' internal capacities for self-regulation and responsible decision-making *and* strengthen the supportive and communicative functions of their families. Such an approach can create a synergistic effect, where empowered adolescents operating within supportive family systems are better equipped to navigate all aspects of their social world, including peer relationships, in a healthy and constructive manner.[16-20]

5. Conclusion

This study underscores the significant protective roles of both self-driven motivation and strong family bonds in mitigating risky sexual behavior among adolescents in Wih Pesam District, Indonesia. The multivariate analysis, in particular, highlights that higher levels of these attributes are associated with considerably lower odds of engaging in such behaviors, with family support appearing as an especially potent protective factor. While acknowledging the study's limitations and the complexities observed in the bivariate data, the overall findings champion a holistic approach to adolescent sexual health that looks beyond peer influence to nurture individual capacities and strengthen foundational family relationships. These efforts are paramount in guiding adolescents toward safe and responsible sexual decision-making.

6. References

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