

The Influence of Parent-child Communication, Self-esteem, and Physical Activity Levels on Children's Use of Slang

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[Abstract]

This study conceptualizes adolescents' slang use as a social mechanism for identity formation and peer affiliation and investigates the joint effects of family communication and physical activity through self-esteem. Using data from the 2021 Korean Children's Panel Survey, 1,326 adolescents aged 13 were analyzed. Structural equation modeling with confirmatory factor analysis was applied, and indirect effects were tested via bootstrapping. The results indicated that mother-child communication, reasoning-based parental communication, and physical activity significantly and positively predicted adolescents' self-esteem, whereas father-child communication was not significant. Higher self-esteem was associated with lower levels of slang use. Mediation analyses further confirmed that self-esteem significantly mediated the relationships between maternal communication, reasoning-based communication, physical activity, and slang use. These findings suggest that adolescents with stronger self-esteem, fostered through supportive communication and regular physical activity, are less likely to rely on slang for social validation. The study highlights the importance of reasoning-based parenting and physical activity in promoting adolescents' resilience and healthy language behaviors.

▶ **Key words:** Parent-child communication, self-esteem, physical activity, slang, adolescents

[요 약]

본 연구는 청소년의 비속어 사용을 정체성 형성과 또래 소속감의 사회적 기제로 보고, 가족간 의사소통과 신체활동이 자아존중감을 매개로 비속어 사용에 미치는 영향을 규명하고자 하였다. 이를 위해 2021년 한국아동패널조사 자료 중 만 13세 청소년 1,326명을 대상으로 구조방정식 모형을 적용하였다. 분석 결과, 모-자녀 의사소통, 부모의 합리적 의사소통, 신체활동은 자아존중감을 유의하게 증진시켰으나 부-자녀 의사소통은 유의하지 않았다. 자아존중감은 비속어 사용 감소와 유의한 관련을 보였으며, 매개분석 결과 자아존중감은 모-자녀 의사소통, 부모의 합리적 설명 중심 의사소통, 신체활동과 비속어 사용 간의 관계를 유의하게 매개하였다. 이는 부모와의 의사소통과 신체활동을 통해 형성된 자아존중감이 청소년의 건강한 언어 사용을 촉진함을 시사한다.

▶ **주제어:** 부모-자녀 커뮤니케이션, 자아존중감, 신체활동, 비속어, 청소년

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I. Introduction

1. Needs for the study

Childhood language acquisition is deeply influenced by a child's emotional state, social interactions, and the quality of familial relationships[1-4]. Of particular significance is slang, an informal and dynamic form of expression that serves not only as a linguistic variant but also as a powerful social tool. Among adolescents, slang plays a crucial role in identity formation, fostering group belonging, and asserting autonomy from adult expectations[2]. Adolescence, a time of linguistic innovation, is pivotal in driving language change and variation[5]. Slang transcends stylistic expression, facilitating peer affiliation and acting as a means of emotional and cultural self-expression[6]. From the perspective of Social Identity Theory[7][8], slang can be seen as a communicative strategy to strengthen peer bonds and navigate status dynamics within youth groups[2][3]. Especially, for adolescents with lower self-esteem, slang may function as a compensatory tool, offering emotional security and social acceptance[4][9]. While higher self-esteem is often associated with greater assertiveness in language use, it may paradoxically reduce the need to use slang for social approval. Confident adolescents may be less inclined to conform to peer norms, unlike those with lower self-esteem, who often rely on slang to assert group membership or bolster their self-worth[2-4].

The development of self-esteem in adolescents is deeply affected by parental communication[10-14]. Effective communication, characterized by openness, mutual respect, and reasoned discussion, has been associated with higher self-esteem among adolescents[10][13]. Inductive parenting, where parents explain rules and engage in reciprocal dialogue, fosters a positive self-concept and strengthens emotional resilience[11][14]. Both paternal and maternal reasoning have been shown to positively influence

adolescent self-esteem[12]. Inductive communication, marked by non-coercive, bidirectional exchanges, promotes autonomy and discourages peer pressure, contributing to a more resilient self-concept[15]. In other words, parental attachment further shapes self-esteem[16]. Warm, supportive parental bonds help establish a stable sense of self-worth, whereas a lack of such attachment often leads adolescents to seek validation from peers. In these cases, slang can serve as a means of securing group membership[16], compensating for the absence of emotional support at home.

Meanwhile, another critical factor influencing the formation of adolescents' self-esteem is engagement in physical activity. Physical activity, including organized sports and recreational play, contributes to both psychological well-being and social competence[17-19]. Experiences of physical success, such as athletic achievement or improvements in fitness, may enhance a child's confidence, especially when accompanied by positive feedback from coaches, peers, and parents.[17]. Participation in physical activity is also associated with reduced anxiety, improved mood, and enhanced body image, which further bolsters self-esteem[18]. Longitudinal studies indicate that consistent participation in physical activity predicts higher self-esteem, particularly among early adolescents[19]. Involvement in sports also facilitates the development of a positive social identity[20]. Accordingly, adolescents in athletic contexts tend to develop greater self-esteem and establish peer networks grounded in cooperation and achievement, which may serve as an alternative to peer pressure mediated through linguistic markers such as slang. Nevertheless, previous research on adolescent slang has tended to emphasize either linguistic variation and peer identity or family and psychological factors separately. Less attention has been paid to how family communication and everyday health-related behaviors, such as physical activity, may operate

together through self-esteem to explain adolescents' slang use. In addition, empirical studies using nationally recognized panel data remain limited. Addressing this gap, the present study integrates family communication, physical activity, self-esteem, and slang use into a single mediation model.

2. Purpose and hypotheses

The present study investigates the interplay between parental communication, physical activity, self-esteem, and slang use among adolescents. We hypothesize that stronger parental communication and increased participation in physical activity will be positively correlated with higher self-esteem. In turn, higher self-esteem is expected to reduce reliance on slang as a means of social compensation or identity formation. Followings are research hypotheses:

H1: Father-child communication is positively associated with adolescents' self-esteem.

H2: Mother-child communication is positively associated with adolescents' self-esteem.

H3: Parental reasoning-based communication is positively associated with adolescents' self-esteem.

H4: Physical activity level is positively associated with adolescents' self-esteem.

H5: Adolescents' self-esteem is negatively associated with their use of slang.

H6: Adolescents' self-esteem mediates the relationship between father-child communication and adolescents' slang use.

H7: Adolescents' self-esteem mediates the relationship between mother-child communication and adolescents' slang use.

H8: Adolescents' self-esteem mediates the relationship between parental reasoning-based communication and adolescents' slang use.

H9: Adolescents' self-esteem mediates the relationship between physical activity and adolescents' slang use.

II. Material & methods

1. Participant

This research draws upon the original dataset from the 2021 Korean Children's Panel Survey, conducted by the Korea Institute of Child Care and Education, a government-funded research institute affiliated with the Office of the Prime Minister of the Republic of Korea[21]. The Korean Children's Panel Survey is designated as an official statistical survey in accordance with Article 18 of the Statistics Act of Korea, and it holds the statistical approval number 402002. The target population for the survey consists of children born in 2008, who were 13 years old at the time of the 2021 data collection, aligning with the first year of middle school in the South Korean education system. A two-stage sampling design was employed. Initially, a sampling frame was developed using a nationwide list of medical institutions that reported a minimum of 500 childbirths annually. These institutions served as the primary sampling units. In the second stage, households with newborns were selected as the secondary sampling units. This was achieved by visiting the identified medical institutions and recruiting mothers who expressed willingness to participate. The finalized panel was established after confirming consent from households in the preliminary sample pool. For data collection, trained interviewers visited the participants' residences and conducted personal interviews, which included structured questionnaires. In this study, data were analyzed from a total of 1,326 adolescents (677 males and 649 females) born in 2008, with two cases excluded due to missing data.

2. Instruments

In this study, we selected and analyzed only the research variables relevant to our study's objectives from the 2021 Korean Children's Panel survey. The variables used in this study include father-child communication, mother-child

communication, parental reasoning-based communication, self-esteem, physical activity level, and slang usage tendency.

The level of father-child communication was assessed using four items rated on a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. Higher scores reflect a greater perceived level of communication with the father. Sample items include: "I talk to my father about my problems or difficulties," "My father encourages me to talk about the challenges I face," "When we discuss something, my father takes my opinions into account," and "When my father notices that I am struggling, he asks me about it."

The level of mother-child communication was assessed using four items rated on a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. Higher scores reflect a greater perceived level of communication with the mother. Sample items include: "I talk to my mother about my problems or difficulties," "My mother encourages me to talk about the challenges I face," "When we discuss something, my mother takes my opinions into account," and "When my mother notices that I am struggling, she asks me about it."

Parental reasoning-based communication was measured using four items rated on a 4-point Likert scale: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. Higher scores reflect a greater perception that parents engage in reasoned and explanatory communication. "Instead of simply making me obey their decisions, my parents explain the reasons behind them," "My parents clearly explain why they are angry when they get upset," "When giving praise or punishment, my parents provide reasons that I can understand and find reasonable," "When I behave badly, my parents first explain why the behavior is wrong before scolding me," and "When I make unreasonable requests, my parents explain why those requests cannot be accepted."

The level of physical activity was evaluated using a single-item measure: "In the past 7 days, on how

many days did you engage in physical activities (exercise)?" The response options range from (1) 0 to (6) 5 days or more. A higher score indicates a higher level of physical activity. Because the original panel survey provides physical activity as a frequency-based single item rather than a multi-item scale, this variable was treated as a single-indicator construct in the SEM rather than as a fully developed latent scale.

Self-esteem was assessed through a set of five items rated on a 4-point Likert scale: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. A higher score indicates a higher level of self-esteem. Example items include "I can do things as well as others", "I have a lot of good qualities", "I think I am a valuable person".

Slang usage tendency was measured with a total of 1 item on a 4-point scale with the following options: (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree. A higher score indicates a more positive perception of one's slang usage. Example items include "How frequently do you use expressions such as 'freaking,' 'bastard,' 'hell yeah,' or 'meet up and fight'?". In the present study, slang was conceptualized as an informal and socially symbolic form of language used by adolescents to express peer affiliation, emotional identity, and group belonging. Because the Korean Children's Panel Survey measured slang use with one item, this variable was also treated as a single-indicator construct. Therefore, the findings related to slang use should be interpreted as associations with a specific self-reported tendency rather than as a comprehensive assessment of all contexts, functions, and forms of adolescent slang.

3. Data Analysis

Descriptive statistics and internal consistency assessments were conducted using SPSS version 20.0. For structural equation modeling(SEM), the AMOS 20.0 software was employed, adhering to the two-step analytical strategy recommended by Anderson and Gerbing[22]. In the first phase,

Table 1. Summary of the Confirmatory Factor Analysis

Variable		M	SD	SC	α	CR	AVE
Father-child communication	Item1	3.08	1.135	.762	0.864	0.868	0.623
	Item2	3.46	1.042	.787			
	Item3	3.61	1.007	.869			
	Item4	3.44	1.027	.732			
Mother-child communication	Item1	3.74	1.019	.725	0.872	0.876	0.640
	Item2	3.90	0.905	.805			
	Item3	3.90	0.880	.886			
	Item4	3.84	0.892	.776			
Parental reasoning-based communication	Item1	3.02	0.680	.724	0.845	0.845	0.523
	Item2	2.95	0.731	.712			
	Item3	3.13	0.679	.750			
	Item4	2.98	0.756	.718			
	Item5	3.08	0.698	.710			
Self-esteem	Item1	3.09	0.661	.761	0.861	0.864	0.561
	Item2	3.16	0.655	.760			
	Item3	3.03	0.690	.615			
	Item4	3.41	0.608	.763			
	Item5	3.27	0.662	.830			
Physical activity	Item1	3.47	1.693	0.548	0.70	-	-
Slang usage	Item1	2.15	0.836	0.549	0.70	-	-

M=Mean, α =Cronbach's alpha, SD=Standard deviation, SC=Standardized coefficients, CR=Composite reliability, AVE=Average variance extracted

confirmatory factor analysis(CFA) was applied to evaluate the adequacy of the measurement model. Following satisfactory model fit, the structural model was examined in the second phase. Model fit was considered acceptable when the ratio of chi-square to degrees of freedom(χ^2/df) was below 5.0, the Comparative Fit Index(CFI) was 0.90 or greater, the Root Mean Square Error of Approximation(RMSEA) was below 0.10, and the Standardized Root Mean Square Residual(SRMR) was under 0.08[23-24]. Measurement reliability was verified by ensuring that Cronbach's alpha coefficients met or exceeded the 0.70 threshold. Convergent validity was confirmed if the composite reliability(CR) was at least 0.70 and the average variance extracted(AVE) exceeded 0.50. Discriminant validity was established when the AVE values for each construct were higher than the squared inter-construct correlations[23-24].

To evaluate the mediating role of self-esteem, indirect effects were analyzed using a bootstrap method with 5,000 samples. The 95% bias-corrected confidence intervals(CIs) were examined to assess the statistical significance of mediation effects.

III. Results

1. Confirmatory factor analysis

The measurement model demonstrated an overall acceptable, although not optimal, fit based on several commonly used fit indices: $\chi^2(\chi^2=2258.314, \chi^2/df=4.463, p<0.001)$, CFI=0.89, SRMR=0.044, and RMSEA=0.05. The results of the confirmatory factor analysis are presented in Table 1. According to established guidelines for structural equation modeling[23], these values were in the acceptable range. With regard to internal consistency, all latent constructs achieved sufficient reliability, as evidenced by Cronbach's alpha values exceeding the minimum recommended threshold of 0.70[25]. Convergent validity was also established, as each factor exhibited CR values above 0.70 and AVE scores greater than 0.50—criteria commonly used to confirm convergent validity[25]. Discriminant validity was verified by comparing the AVE values of each latent variable to the squared inter-factor correlations. In all cases, the AVE of each construct exceeded the corresponding squared correlations, thus satisfying the conditions for discriminant validity[24]. Detailed squared

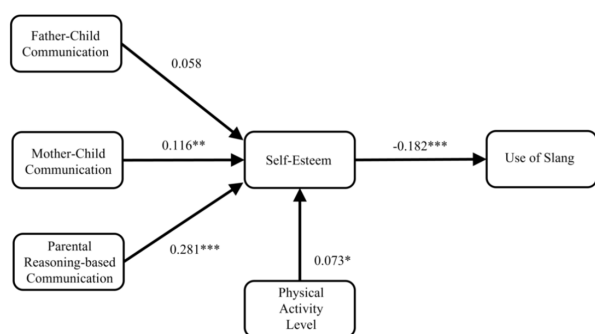


Fig. 1. Summary of the structural equation modeling

correlation values are presented in Table 2 for reference. In addition, factor analyses were conducted for the constructs “physical activity level” and “use of slang,” which were each operationalized using single-item indicators. Since confirmatory factor analysis(CFA) in AMOS requires the specification of error variance for single indicators, this was calculated using the formula: Error Variance=(1- α) σ^2 . Due to the absence of empirical reliability data, an assumed reliability coefficient of 0.70 was applied in accordance with previous recommendations for estimating error variance in single-items measures.[26-28].

2. Structural equation modeling

The analysis of the structural equation model revealed the following results: [$\chi^2=2334.500$, $\chi^2/df=4.542$, $p<0.001$], CFI=0.88, SRMR=0.05, and RMSEA=0.05. These results suggest that the model fit can be considered acceptable[23][24].

First, the effect of father-child communication level on self-esteem was positive but not statistically

significant($\beta=0.058$), thus providing no support for Hypothesis 1(H1). Second, mother-child communication level demonstrated a significant positive association with self-esteem($\beta=0.116$, $p<0.01$), thereby supporting Hypothesis 2(H2). Finally, parental reasoning-based communication exhibited the strongest positive effect on self-esteem($\beta=0.281$, $p<0.001$), confirming Hypothesis 3(H3). Physical activity level had a significant positive effect on self-esteem($\beta=0.073$, $p<0.05$), supporting Hypothesis 4(H4). Furthermore, self-esteem negatively predicted use of slang($\beta=-0.182$, $p<0.001$), offering strong support for Hypothesis 5(H5) and suggesting that children with higher self-esteem are less likely to engage in slang use.

The indirect effect of father-child communication on slang use through self-esteem was not statistically significant($\beta=-0.010$, $p>0.05$), thus providing no support for Hypothesis 6(H6). Second, the indirect effect of mother-child communication on slang use, mediated through self-esteem, was significant ($\beta=-0.051$, $p<0.01$), supporting Hypothesis 7(H7). Third, parental reasoning-based communication exhibited a significant indirect effect on slang use via self-esteem($\beta=-0.021$, $p<0.01$), confirming Hypothesis 8(H8). Finally, the indirect effect of physical activity on slang use through self-esteem was also significant($\beta=-0.013$, $p<0.05$), thereby supporting Hypothesis 9(H9). The results of the structural equation modeling are presented in Fig.1 and Table 3.

Table 2. Squared Inter-Factor Correlations

Factors	(1)	(2)	(3)	(4)	(5)	(6)
(1)Father-child communication	1					
(2)Mother-child communication	0.532** (0.283)	1				
(3) Parental reasoning-based communication	0.389** (0.151)	0.490** (0.240)	1			
(4)Self-esteem	0.258** (0.066)	0.351** (0.123)	0.270** (0.072)	1		
(5)Physical activity	0.062* (0.003)	0.114** (0.012)	0.083** (0.006)	0.112** (0.012)	1	
(6)Slang use	-0.130** (0.016)	-0.104** (0.010)	-0.151** (0.022)	-0.142** (0.020)	0.114** (0.012)	1

***= $p<0.01$, **= $p<0.05$, The numbers inside () indicates squared correlations

Table 3. Results of the Structural Equation Modeling

Direct effect			
Path	β		
H1: Father-child communication $\rightarrow$ self-esteem	0.058		
H2: Mother-child communication $\rightarrow$ self-esteem	0.116**		
H3: Parental reasoning-based communication $\rightarrow$ self-esteem	0.281***		
H4: Physical activity level $\rightarrow$ self-esteem	0.073*		
H5: self-esteem $\rightarrow$ slang use	-0.182***		
Indirect effect			
Path	β	95% CI	
		LL	UL
H6: Father-child communication level $\rightarrow$ self-esteem $\rightarrow$ slang use	-0.010	-0.029	0.004
H7: Mother-child communication level $\rightarrow$ self-esteem $\rightarrow$ slang use	-0.051**	-0.081	-0.028
H8: Parental reasoning-based communication $\rightarrow$ self-esteem $\rightarrow$ slang use	-0.021**	-0.044	-0.005
H9: Physical activity level $\rightarrow$ self-esteem $\rightarrow$ slang use	-0.013*	-0.030	-0.002

***= $p < .001$, **= $p < .01$, *= $p < .05$, β = Standardized coefficients, LL=lower limit, UL= upper limit

IV. Discussion

This study contributes to the understanding of adolescent slang use by exploring its relationship with parent-child communication, physical activity and self-esteem. The findings support a multidimensional perspective, highlighting how psychological and social dynamics intertwine to shape language use among adolescents.

Interestingly, while maternal communication significantly predicted self-esteem and indirectly influenced slang usage, paternal communication did not demonstrate a statistically significant effect. This difference could reflect culturally influenced parenting roles, where mothers traditionally engage more frequently in emotional and expressive interactions with children[16]. Future research should explore the qualitative differences in father and mother communication patterns to elucidate their distinct impacts on adolescent psychological outcomes such as self-esteem and slang usage.

The results of this study also confirmed the pivotal role of parental reasoning-based communication in enhancing adolescents' self-esteem, aligning with prior findings emphasizing that inductive, reciprocal dialogue between parents and children significantly strengthens adolescents' emotional and psychological resilience[10-12]. Reasoning-based communication provides adolescents with cognitive

tools and emotional security to navigate social pressures independently, reducing their dependence on peer-group acceptance strategies, such as slang usage. This outcome supports Social Identity Theory[7][8], indicating that adolescents secure in their identity are less compelled to employ linguistic markers, such as slang, for social approval[2][3].

The study also underscored the significance of physical activity in reinforcing adolescents' self-esteem, confirming previous findings[17][19]. Regular participation in sports or recreational activities enhances emotional resilience, social competence, and self-worth, which collectively reduce adolescents' reliance on slang for social compensation. Adolescents involved in structured physical activities often benefit from positive peer and adult interactions, creating environments that encourage self-confidence and emotional stability[18]. This potentially shifts their focus away from linguistic conformity as a means of peer integration, thereby decreasing slang dependency.

Consistent with our hypothesis, higher self-esteem strongly correlated with decreased slang use. Adolescents who feel valued and secure in their familial and social environments exhibit greater autonomy and lesser need for linguistic validation from peers. This aligns with Hernández et al.[4], who argue that adolescents with secure self-perceptions are less inclined to seek social

approval through adaptive linguistic behaviors like slang.

Practically, these findings have implications for adolescent language guidance, parent education, and school-based physical activity programs. First, language education should move beyond simple prohibition or punishment and address the psychological and relational contexts in which adolescents use slang. Programs that strengthen self-esteem, peer respect, and reflective language awareness may be more effective than approaches that only emphasize correction. Second, parent education programs should encourage reasoning-based communication, including explaining rules, listening to adolescents' opinions, and providing understandable reasons during discipline. Such communication may help adolescents internalize norms rather than comply only superficially. Third, schools can connect language guidance with physical education and extracurricular sport programs by creating activity environments that promote competence, belonging, cooperation, and self-confidence. When physical activity contributes to self-esteem and positive peer affiliation, it may indirectly support healthier language behavior.

Limitations of the present study include its cross-sectional design, restricting causal inference. Longitudinal studies could provide further insights into developmental changes over time. Additionally, the generalizability of findings might be limited due to cultural or regional variations in language use and parental communication styles. Furthermore, the non-significant result for father-child communication could not be further explained because the dataset did not include qualitative information or additional father-specific variables. Further studies should investigate these dimensions cross-culturally to enhance the robustness of the conclusions.

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