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Adolescent Interpersonal Relationship Quantity and Quality, Belongingness, and Loneliness

Wan-Chen Chen

Abstract

Adolescence is a time of experiencing widespread and particularly intense feelings of loneliness. This study investigated how the quantity and quality of evolving interpersonal relationships affect adolescent feelings of belongingness to family, friends, and romantic partners, and moreover, how such relationships influence their feelings of loneliness. A total of 479 adolescents aged between 12 and 22 from a middle school, a senior high school, and a university participated in the study. A quantitative approach using structural equation modeling was employed to address the appropriateness of the hypothetical adolescent loneliness model from the perspective of belongingness. The results indicated that the hypothetical model was reliable for assessing loneliness during the three stages (early, middle, and late) of adolescence. The study found that the interaction between the quality and quantity of adolescents' interpersonal relationships with family members contributed to their feelings of belongingness to family. Similarly, interaction between relationship quality and quantity with a best friend contributed to adolescents' feelings of belongingness to their friends. Moreover, feelings of belongingness to family and friends were associated with decreased adolescents' level of loneliness. However, the results from multiple group modeling failed to demonstrate predicted differences between adolescents' feelings of loneliness and belongingness to family and friends for the three stages of adolescence. As regards adolescents' feelings of belongingness to family, the interaction between relationship quantity and quality with one's father was more important for middle and late adolescents than for early adolescents. The findings of this study also had relevance for the individuation process of adolescence. The pursuit of friendships and romantic partners, including their increased appreciation of these relationships, was achieved without loss of connection with family members.

Keywords: adolescents, belongingness, interpersonal relationship, loneliness

Wan-Chen Chen Department of Education, National Chengchi University (wan_chen@nccu.edu.tw)

INTRODUCTION

Belongingness in Adolescence

According to Erikson's (1950, 1968) contributions to psychosocial development during the life cycle, a major task in adolescent development is establishing role identity, which means forming a unique and self-chosen identity. According to this theory, the life cycle goes directly from the latency tasks of acquiring concrete knowledge and skills to the adolescent tasks of questioning identifications, taking perspective from the past, and developing a new sense of self. Nevertheless, Noam and his colleagues found that most virtues described in the adolescence stage, including a high sense of duty or the quality of genuineness, are only found in late adolescents and adults. Noam et al. concluded that many early adolescents search for a mutual-inclusive self because early adolescents identify the self as strongly defined by a group, and the self defined through others' eyes (Noam, 1999; Norm & Borst, 1994; Noam, Powers, Kilkenny, & Beedy, 1990). Similarly, feminist theory states that identity formation with others is needed in adolescence for true intimacy in adulthood (Gilligan, 1982).

Erikson's psychosocial developmental theory may be missing a development task between the latent stage of industry and the adolescent stage of identity development. This possible missing stage is the belonging-versus-rejection stage which is parallel to Erikson's development task terminology (Noam, 1999). Levine (1979) supported the importance of belongingness in adolescence by stating, "adolescents have two basic psychological needs which, when fulfilled, enable them to cope better with those critical years and thereafter." These needs include a belief system, something intense to believe in and a

sense of belonging, such as belonging to a community" (p. 41).

According to Noam (1999), adolescents identify more with group identification and less with a unique or individualistic identification in the belonging-versus-rejection stage. For example, adolescents care more about issues such as "Where do I belong," "What am I part of," or "Who accepts me," rather than the issue of "Who am I?" in this development model. However, identification and belongingness are key adolescent issues before reaching the developmental task of "true" identity (Noam, 1999). Without belongingness, a sense of isolation, alienation, and loneliness can easily affect adolescents in this stage of development.

The danger of not satisfying belongingness needs is an important issue for adolescents. Since teenagers experience dramatic life changes, they may be desperate for new sources of belongingness. In acquiring new sources of belongingness, adolescents tend to unintentionally use inappropriate strategies when their needs are not met. For example, adolescents might become addicted to alcohol or the internet in order to feel accepted. Partaking in these activities may increase the probability of being included in special groups, and to numb the distressed emotions of being rejected by others (Fu, 2007; Leary, Schreindorfer, & Haupt, 1995). Teenagers might also partake in indiscriminate sexual activity in an attempt to achieve a sense of belonging (Leary et al., 1995).

Loneliness in Adolescence

Adolescence is the period or stage when the developmental transition from childhood to adulthood occurs. Adolescents may not become lonelier than people at other transition points in their lives; however, this period's unique nature

and the developmental tasks that adolescents experience create different feelings of loneliness. During adolescence, loneliness can be part of a dreadful, pathological adjustment to the world (Fromm-Reichmann, 1980). Lonely, disturbed adolescents probably feel disappointed and frustrated with different human relationships for most of their lives. Young adolescents are especially prone to feelings of loneliness because they tend to be keenly aware of the great discrepancy between the search for intimacy and the failure to satisfy it (Rubenstein, Shaver, & Peplau, 1979).

Possible factors that lead to loneliness in adolescence include intellectual and physiological changes, the developmental tasks of separation-individualism from parents, and situational changes such as leaving their parents and home for school. The adolescence is when a young person develops the ability to intellectually reflect on many new possibilities rather than on immediate realities. When considering values and life choices, social expectations and physical growth push adolescents to greatly increase mastery and autonomy (Piaget, 1967). The increased sense of freedom and autonomy can be frightening for adolescents because they become aware of an increased expectation to self-manage and take personal responsibility for things.

Along with the cognitive and physiological maturations, teenagers become more capable of questioning old assumptions about life and might start to think about who they are and whether or not they will be able to find a place in the society where they will receive love and respect. To address these uncertainties, adolescents tend to experience feelings such as feeling lonely in this big, external world because they need to find the specialty for self-characters (Ostrov & Offer, 1980). Adolescents often struggle to find mean-

ingfulness in their lives.

The issue of separation from parents and the original family and the emergence of new interpersonal needs contribute to adolescent loneliness. Adolescents may become lonely when they realize that some day they will leave their parents and separate from this family unit. The thought of separation might awaken childhood fears of being helpless and alienated from significant others, which in turn leads to feelings of loneliness in adolescents (Ostrov & Offer, 1980). According to Sullivan's (1953) theory of socio-emotional development, a developmental sequence of emerging social needs should be satisfied through certain key relationships. During adolescence, the need for intimacy and integration into adult society are intensified by close friendships, romantic partners, and a mature network of friends. However, adolescents tend to suffer from emotional distress when particular needs are unmet. Moreover, adolescents may refrain from reaching out to others in order to protect their vulnerable self-esteem at this stage. However, they may continue to yearn for someone to care about them. These lonely teenagers may feel a desperate need for attention, approval, and external confirmation of their own worth (e.g., Mijuskovic, 1986; Prinstein & La Greca, 2002; Stednitz & Epkins, 2006).

Developmental Transitions of Relationships, Belongingness, and Loneliness

Adolescent development can be described as a period of "storm and stress". It is a difficult period of life characterized by conflicts with parents, mood disruption or extreme emotions, increased substance abuse, heavy reliance on peers and vulnerability to peer pressure, and risky behavior (Arnett, 1999; Dellinger-Ness & Handler, 2007). However, under these disruptive

manifestations, the pressing task for all adolescents is to create new types of interpersonal relationship. These new relationships may help them overcome developmental issues such as establishing self-identity, intimacy, and autonomy. This stage of life may be challenging and difficult.

Previous research shows that during puberty, adolescents have an increase in conflict with their parents, and a decrease in closeness with their parents (Grotevant, 1997). This is an example of a qualitative change in adolescent relationships within the family, Diminished closeness towards the family comes from an adolescent's need for privacy. Increased conflicts are mainly over mundane issues, such as personal appearance, dating, curfews, and household chores. Adolescents try to play a more forceful role in the family, but their parents may not acknowledge it, which creates a source of conflict (Grotevant, 1997). These changes might not impair the quality of parent-adolescent relationship at the beginning of the adolescent stage. However, if both parties cannot renegotiate and accept relationship changes, these changes may affect the psychological well-being of adolescents and their parents (Cheng, 1993; Steinberg, 1999).

An adolescent's relationship with friends includes concepts such as intimacy, loyalty, and shared values or attitudes which are created from early adolescence (Savin-Williams & Berndt, 1990). These psychological changes that occur in adolescence are consistent with the cognitive changes in early adolescence whereby adolescents master the ability to think about abstract concepts, such as intimacy and loyalty. Hence, adolescents' judgments of others become more sophisticated and psychological oriented. Adolescents also become more responsive toward

close friends, and may become more generous and helpful toward each other (Berndt, 1982). Even when conflicts arise between close friends, they are more likely to make efforts to resolve arguments and restore relationships. Furthermore, with an increase in emotional abilities such as empathy and social understanding, adolescents become more sensitive in understanding and acknowledging how their friends feel when they have problems (Denton & Zarbatany, 1996; Yoolim, 2007).

In addition to the qualitative changes of relationships between adolescents and their parents and friends, a dramatic decrease occurs in the amount of time adolescents spend with their parents (Brown, 1990). A decrease in the amount of time spent with parents is mainly replaced by time spent alone for adolescent boys, or by time spent with friends for adolescent girls. Hence, families may have a tough time adjusting to adolescents' increasing interest in peer activities in lieu of family activities. Moreover, living arrangements raise another issue related to the amount of time adolescents spend with their parents or friends (Stattin & Magnusson, 1996).

The belongingness hypothesis, proposed by Baumeister and Leary (1995), indicates that "human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (p. 497). That is, "frequent interactions" and "relatedness (interpersonal relationships marked by stability and affective concern)" are two essential elements that satisfy the need of belongingness. Adolescent parental and peer relationships change qualitatively and quantitatively during this developmental stage. Thus, adolescents might extend the need of belongingness from the family towards their peer group. Therefore, while peers become relatively

more important during adolescence as sources for emotional support, parents do not become unimportant. Research emphasizes that the peer group plays a crucial role in the occurrence of adolescent loneliness because most adolescents achieve a sense of belongingness and acceptance when they can get acceptance from their peers (Medora & Woodward, 1986). When they are not accepted by their peers, loneliness may result. Nevertheless, what would happen if some adolescents successfully maintained a strong sense of belongingness with their families, but not with their peer groups, and vice versa? Would these two groups of adolescents suffer from loneliness? In addition to these questions, another potential source of "belongingness" for adolescents is adolescence romance.

The Romantic Relationship as a Source of "Belongingness"

Close relationships are generally limited to family members and friends. However, when adolescence begins, new close relationships emerge, such as romantic relationships. Transformation, in many respects, occurs in early adolescence because adolescents physically and psychologically mature. Adolescents also change significantly by placing an increased emphasis on social networks with peers. Although same-sex peers are still regarded as the most important relationships, adolescents increasingly seek out the company of opposite-sex peers, and eventually establish romantic relationships with them (Brown, 1999).

In adolescence, the importance of the support and intimacy in romantic relationships gradually increases with age. Friends and family members may remain important figures in an adolescent's life even as the importance of romantic relationships increases. A romantic part-

ner gradually replaces the parental attachment figures, and becomes the most important attachment figure in the attachment hierarchy (Hazan & Shaver, 1987; Laursen & Bukowski, 1997). In middle adolescence most adolescents view a romantic relationship as their closest relationship. In late adolescence, the importance of affection, intimacy, companionship, and support in romantic relationships go beyond friendships or parent-child relationships (Furman & Buhrmester, 1992; Laursen & Bukowski, 1997).

Brown (1999) proposed a sequential model for the development of adolescent romantic relationships. In his model, the development of romance starts with initiation, then affection, and eventually becomes mature bonded relationships. Romantic relationships for younger adolescents are needed for companionship, and for older adolescents romantic relationships are needed for emotional closeness and caring (Shulman & Scharf, 2000). Adolescent romantic relationships gradually mature, and are full of emotionally-laden experiences of closeness that can provide support, comfort, and care.

A romantic relationship can provide a particular type of social interaction, which makes a young person feel totally accepted, esteemed, supported, and cared for from his or her romantic partner. Moreover, the emergence of adolescent romantic relationships simultaneously occurs at a similar period as the development of self-identity and autonomy from parents (Brown, 1999). Romantic relationships may provoke great experiences that enhance one's self-worth or self-identity because adolescents may feel acceptance from another person they adore and like. Previous research shows that romantic relationships are organized on the basis of interdependence in thoughts, emotions, and behaviors. These relationships represent what both parties

would establish for connectedness in frequent, diverse, and influential exchanges (Kelley & Thibaut, 1978).

A romantic relationship may contribute to a sense of connectedness for both romantic partners and provide acceptance, caring, and valuing reciprocally. A satisfying romantic relationship may contribute to “belongingness” in adolescence. However, belongingness in a romantic relationship, where two people are involved, contradicts definitions of belongingness in previous research, where belongingness refers to “a group of people” (e.g., Bollen & Hoyle, 1990; Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992). This study questions why adolescents should limit their sources of belongingness to a group of people when a romantic relationship provides a strong sense of belongingness, which is beneficial to psychological well-being and functioning. This study analyzes the adolescent romantic relationship and its role in belongingness.

Purposes and Goals of this Study

This study addresses the importance of belongingness and adolescent loneliness. It also explores how adolescents significantly transform from their childhood relationships with parents into intimate relationships with peers, and from the need of belongingness in the family into a peer group. This study discusses romantic relationships as an important source of belongingness for adolescence. This research paper analyzes the relative effects of the different domains of adolescents’ belongingness (families, groups of friends, and romantic relationships) on preventing feelings of loneliness.

This study has four objectives: 1. To explore romantic relationships as a potential source of belongingness in adolescence; 2. To test the

belongingness hypothesis, where the formation of belongingness requires intensity and frequency in interaction; 3. To analyze how belongingness in different groups affects feelings of loneliness in adolescence; and 4. To test and refine a hypothetical model of adolescent loneliness and belongingness.

METHOD

Participants

This study utilizes middle-school, high-school, and college students from Tao-yuan County as the population sample to represent the early, middle, and late stages of adolescence. Purposive sampling was used to select middle-school, high-school, and college students from relationship networks familiar to the researcher. With the agreement of proper authorities and teachers, the researcher performed group testing in a classroom environment. Questionnaires were completed by students during class time and immediately collected. A total of 491 questionnaires were collected. 12 questionnaires (9 from middle-school students and 3 from high-school students) were eliminated due to incompleteness or careless answering. Thus, the percentage of viable questionnaires is 97.56%. Lastly, participants in this study included 479 adolescents aged 12 to 22 who were students at a middle school (from five classes, $n = 164$), a senior high school (from four classes, $n = 165$), and a university (from one department, $n = 150$). The research duration of this study lasted from September 2002 to December 2002.

Instruments

All instruments were translated in Chinese, and back-translation procedure was conducted to guarantee the preciseness of the translation.

1. UCLA Loneliness Scale (ULS, version 3)

Russell (1996) designed this 20-item questionnaire (9 positive and 11 negative items) to measure loneliness. The author reports high internal consistency in college student populations ($\alpha = .92$), with good test-retest reliability after 12 months ($r = .73$). Confirmatory factor analysis supports the feasibility of a unidimensional factor structure (Russell, 1996). The shortened form of the UCLA Loneliness Scale was used for this study in consideration of time constraint, and the selection of items is based on Dr. Russell's suggestions (Somers, 2000). This short-form of Version 3 contains 10 items, which demonstrate good internal consistency reliability as well as significant positive correlation with burnout and significant negative correlations with several measures of social support.

2. The Measure of Adolescent Connectedness (MAC: version 5)

The Measure of Adolescent Connectedness scale contained a total of 78 items, which was constructed to assess adolescents' involvement in and attentiveness to four major connectedness worlds, including being social, demonstrating academic interests, relating to family, and becoming an adult individual (Karcher, 2001). Fifteen specific ecological subscales were also incorporated, which included the participant's neighborhood, friends, self-in-the-present, parents, siblings, school, teachers, self-in-the-future, reading, kids from other cultures, religion, romantic partner, mother, and father. The internal reliabilities for these 14 subscales among adolescent populations were acceptable (alpha range from .71 to .94).

For the purposes of this study, only four subscales were included. These were: (1) connectedness to parents (6 items; e.g., "It is important that my parents trust me"); (2) connect-

edness to siblings (5 items; e.g., "I feel close to my brother(s) or sister(s)"); (3) connectedness to friends (6 items; e.g., "My friends and I talk openly with each other about personal things"); and (4) connectedness to romantic partner (5 items; e.g., "I share my worries and concerns with a girlfriend / boyfriend").

3. The Network of Relationships Inventory (NRI)

Furman and Buhrmester (1985) design this 30-item Likert scale to assess 10 relationship qualities and quantities and 3 items are tapped on each. They were reliable alliance, enhancement of worth, mental help, companionship, affection, intimacy, relative power of the child and other, conflict, satisfaction, and importance of the relationship. The internal consistency reliabilities for these 10 subscales were all above .60. For the purpose of this study, only 9 items were included to assess relationship qualities (6 items; e.g., "How much does this person treat you like you're admired and respected") and relationship quantities (3 items; e.g., "How much free time do you spend with this person"). In addition, participants answered questions for relationships within each of the following type of relationships: (1) father, (2) mother, (3) sibling(s), (4) best friend, and (5) current romantic partner. Responses to the three items assessing each relationship quality are summed for each relationship. Thus, 10 scale scores were obtained in this study.

Statistical Analysis

The model, based on hypothetical theories of loneliness and belongingness, was tested with data from surveys to show that the multiple of qualities and quantities of interpersonal relationship leads to belongingness, and belongingness to family and friends leads to loneliness (see Figure 1). Due to above two-thirds participants

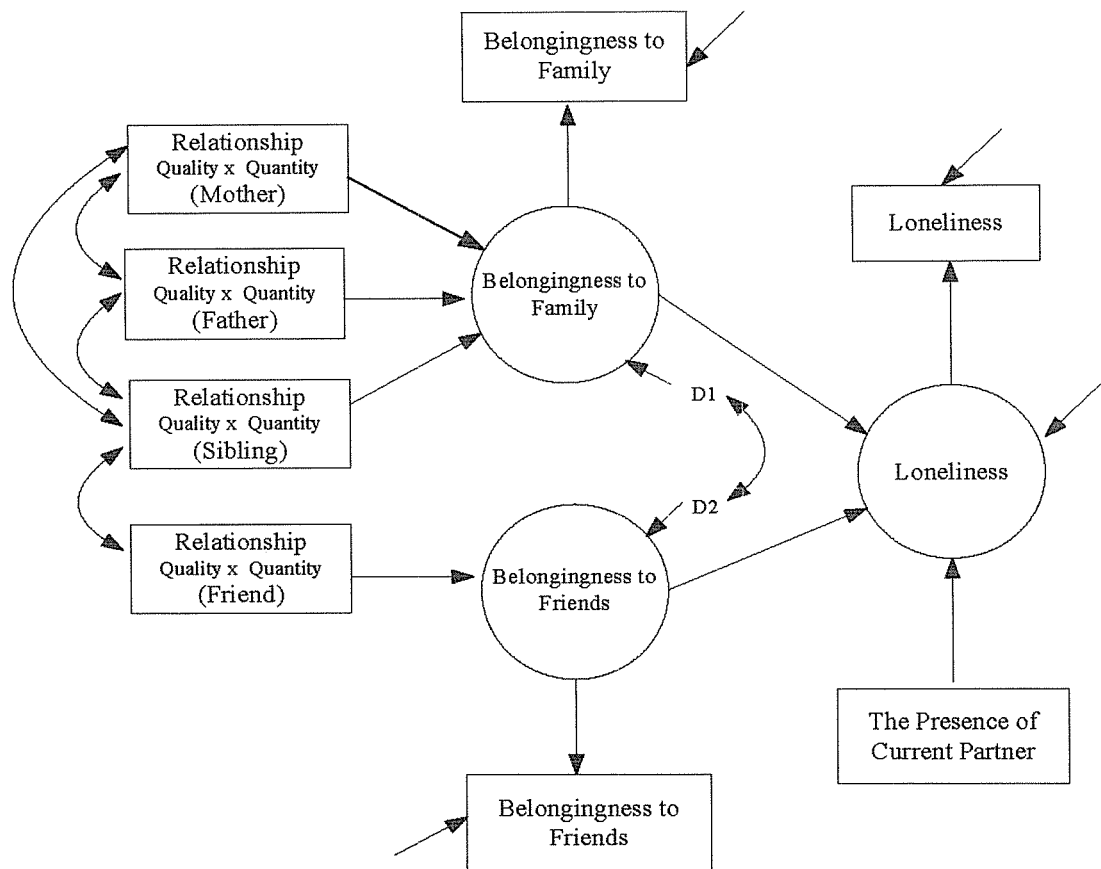


Figure 1. Model of Relationship Quality and Quantity, Belongingness, and Loneliness

do not have current romantic partner, belongingness to romantic partner was not used in the model; instead, the presence of current romantic partner was tested. Structural equation modeling was conducted by using EQS to test the fitness of this hypothesized model and the significance of each path, and to compare the differences among different age groups.

RESULTS

Reliability Coefficients of the Scales

Internal consistency reliability coefficients were computed for the scales used in this study to provide information regarding the preliminary validity of each instrument. The internal consistency reliability coefficient of the UCLA Loneliness Scale (Version 3, 10-item Short-Form) was

computed as .82. For the Measure of Adolescent Connectedness scale used to calculate adolescent belongingness, the internal consistency reliability coefficient for the 11-item Family Subscale was computed as .87, while the 6-item Friend Subscale was calculated as .75 and the 5-item Romantic Partner being as .76. For the scales used to calculate Relationship Quantity, the internal consistency reliability coefficient for the 3-item Mother Subscale was computed as .83; the 3-item Father Subscale was .83; the 3-item Sibling Subscale was .84; the 3-item Romantic Partner was .89; and the 3-item Best Friend Subscale was .86. For the scales used to assess Relationship Quality, the internal consistency reliability coefficient for the 6-item Mother Subscale was computed as .90; the 6-item Father Subscale was .90; the 6-item Sibling Subscale

was .87; the 6-item Romantic Partner was .91; and the 6-item Best Friend Subscale was .89. In summary, the Cronbach alphas for the all scale scores were satisfactory.

Comparison for the Three Stages of Adolescence

The means, standard deviations, intraclass correlation, and results from the ANOVAs that examined group differences in loneliness, belongingness, and relationship quantity and quality are reported in Table 1. As the data in the table illustrate, significant differences were found between the three groups in the following areas: including measurements for belongingness to family and romantic partner; as well as relationship quantity and quality with one's mother, father, sibling, and romantic partner. In using Tukey HSD, the post hoc test indicated that be-

longingness to family and belongingness to romantic partner were higher in the Late Adolescent group than in the *Early Adolescent* and *Middle Adolescent* groups. As for relationship quantity, the study found that relationship quantity with one's mother was higher in the *Early Adolescent* group than in the *Late Adolescent* group; relationship quantity with one's father and relationship quantity with sibling was higher in the *Early Adolescent* group than in the *Middle Adolescent* and *Late Adolescent* groups; and relationship quantity with romantic partner was higher in the *Late Adolescent* group than in the *Early Adolescent* and *Middle Adolescent* groups. Relationship quality with one's mother, father, sibling, and romantic partner were generally higher in the *Late Adolescent* group than in the *Early Adolescent* and *Middle Adolescent* groups.

Table 1. Mean Comparisons between Three Age Groups

	Early.			Middle			Late		<i>F of</i>		
Variable	<i>M</i>	<i>SD</i>	$\hat{\rho}$	<i>M</i>	<i>SD</i>	$\hat{\rho}$	<i>M</i>	<i>SD</i>	<i>group diff.</i>	<i>p</i>	
Belongingness											
Family	3.50	.68	.07	3.48	.70	.04	3.85	.64	14.57	.000	***
Friend	3.91	.73	.04	3.90	.69	.00	3.99	.54	.72	.485	
Romantic partner	3.64	.80	.01	3.60	.77	.00	4.12	.61	7.87	.001	***
Loneliness	2.24	.57	.01	2.31	.53	.01	2.18	.55	2.15	.118	
Relationship quantity											
Mother	2.89	1.09	.01	2.64	.91	.01	2.61	.95	3.74	.024	*
Father	2.62	1.10	.00	2.32	.84	.00	2.22	.88	7.13	.001	**
Sibling	3.04	1.06	.06	2.73	.92	.05	2.58	.90	9.07	.000	***
Romantic partner	3.06	.96	.00	3.28	.95	.00	4.05	.83	14.42	.000	***
Friend	3.61	1.03	.04	3.56	.92	.00	3.38	.93	2.38	.093	
Relationship quality											
Mother	3.32	1.07	.07	3.31	.98	.01	3.79	.82	12.25	.000	***
Father	3.13	1.09	.05	3.08	.95	.07	3.56	.94	9.68	.000	***
Sibling	2.80	1.02	.08	2.72	.98	.04	3.12	.91	7.02	.001	**
Romantic partner	3.84	1.16	.01	3.71	.96	.01	4.38	.73	7.57	.001	**
Friend	3.04	1.06	.06	2.93	.87	.00	3.15	.82	2.17	.115	

Note. * $p < .05$ ** $p < .01$ *** $p < .001$.

A Test of the Hypothesized Model

Structural equation modeling analyses were conducted to assess the adequacy of the hypothesized model by using EQS software 5.7b for Window (Bentler & Wu, 1995). First, the goodness of fit model was assessed for each group separately; then, multiple group analysis was used to compare the difference for each path.

Early Adolescents

The first hypothesized model consisted of three latent factors and eight variables. The three latent factors, belongingness to family, belongingness to friends, and loneliness, were derived from the consideration of the reliability estimates of the scales. The four variables of interaction of relationship quality and quantity with mother, father, sibling, and friend were derived from the multiple of relationship quality and quantity for each person.

A set of indicators was used to test this model through a goodness-of-fit assessment. The first two indicators, the chi-squared statistic and the Comparative Fit Index (CFI), are the most widely used indicators. Significant chi-squared values indicate that the models are significantly different from those which may be a better fit with the data; however, the most disadvantage of this index is that chi-squared values are easily affected by sample. The CFI ranges from 0 to 1; models with values above .90 have traditionally been considered acceptable

models. However, recently a number of SEM researchers have begun advocating values closer to .95 as a desirable level. The standardized root mean-square residual (SRMR) is similar in intention to the average absolute standardized residual, with values more or less than .05 indicating an acceptable model. For the root mean-square error of approximation (RMSEA), 90% confidence intervals containing the value of .05 are considered to be a good fit. In addition, Hu and Bentler (1999) recommended using joint criteria to retain a model, such as when the CFI is equal or higher than .96 and the SRMR is equal or less than .10; or when the RMSEA is equal or less than .06 and the SRMR being equal or less than .10.

The final model for early adolescents is presented in Figure 2, along with standardized path values. The Lagrange Multiplier test indicated that adding the covariance of relationship with siblings and relationship with friends would significantly improve model fit, and moreover, this notion of relationship with siblings and relationship with friends being correlated was theoretically justified (Furman & Buhrmester, 1985). The model-fit statistics and significance tests for differences between the hierarchically related models are presented in Table 2. Based on the above criteria, results from the CFA indicated that the revised model met all criteria saved for the chi-square test and thus, the model was good for early adolescence.

Table 2. Model-Fit Statistics and Tests of the Differences for Early Adolescents

	χ^2	df	p	CFI	SRMR	RMSEA	RMSEA 90% C. I.
Initial Model	44.37	17	.000	.952	.110	.104	.067, .141
Revised Model	28.84	16	.025	.978	.090	.074	.026, .115
$\Delta\chi^2(1) = 15.53, p < .05$							

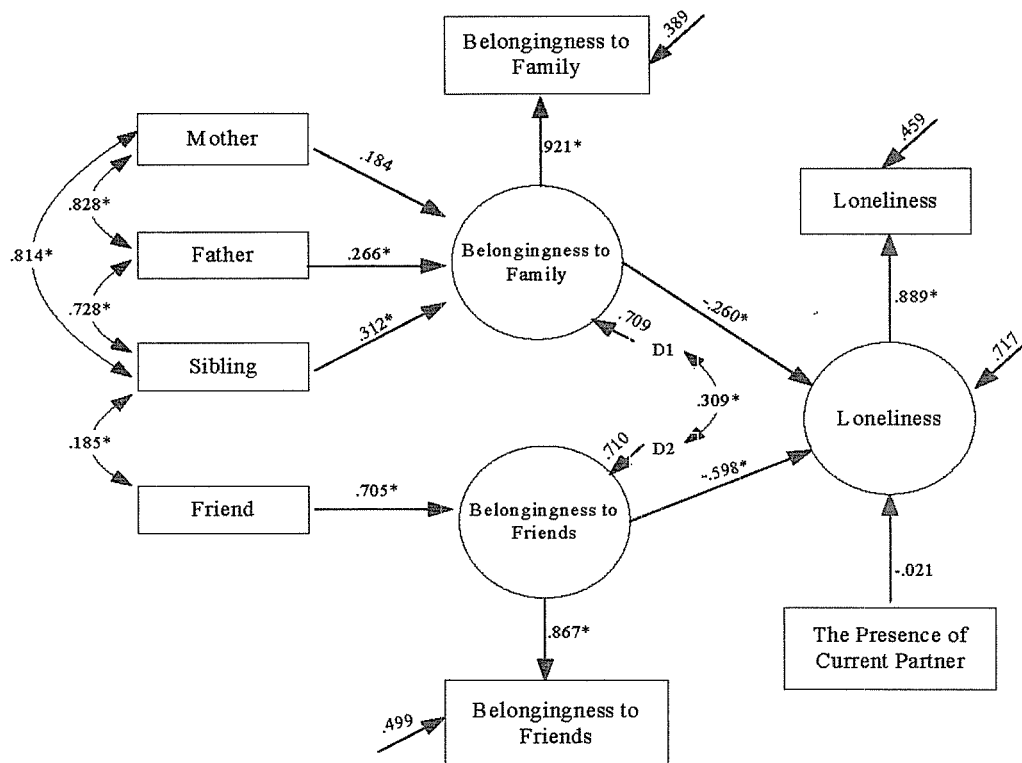


Figure 2. Final Parameter Estimates for Early Adolescents of the Model

As predicted, greater belongingness to family and belongingness to friends were related to less loneliness ($\beta = -.26$ and $-.60$, $p < .05$, respectively), while the presence of a romantic partner was not significantly related to loneliness. Moreover, interaction between relationship quantity and quality with participants' fathers and siblings were related to belongingness to family ($\beta = .27$ and $.31$, $p < .05$, respectively), while interaction between relationship quantity and quality with friends was related to belongingness to friends ($\beta = .71$, $p < .05$). Moreover, the predicted interaction between relationship

quantity and quality with participants' mothers and belongingness to family, although in the right direction, was not significant. The amount of variance explained in the three factors is large: R^2 for belongingness to family = .50; R^2 for belongingness to friend = .50; and R^2 for loneliness = .49.

Middle Adolescents

The model-fit statistics are presented in Table 3. Based on the criteria, results from the CFA indicated that the first model met all criteria and thus, the model was good for middle adolescence.

Table 3. Summary of the Model-Fit Statistics for Middle Adolescents

	χ^2	df	p	CFI	SRMR	RMSEA	RMSEA 90% C. I.
Hypothesized Model	26.08	17	.055	.984	.094	.061	.000, .104

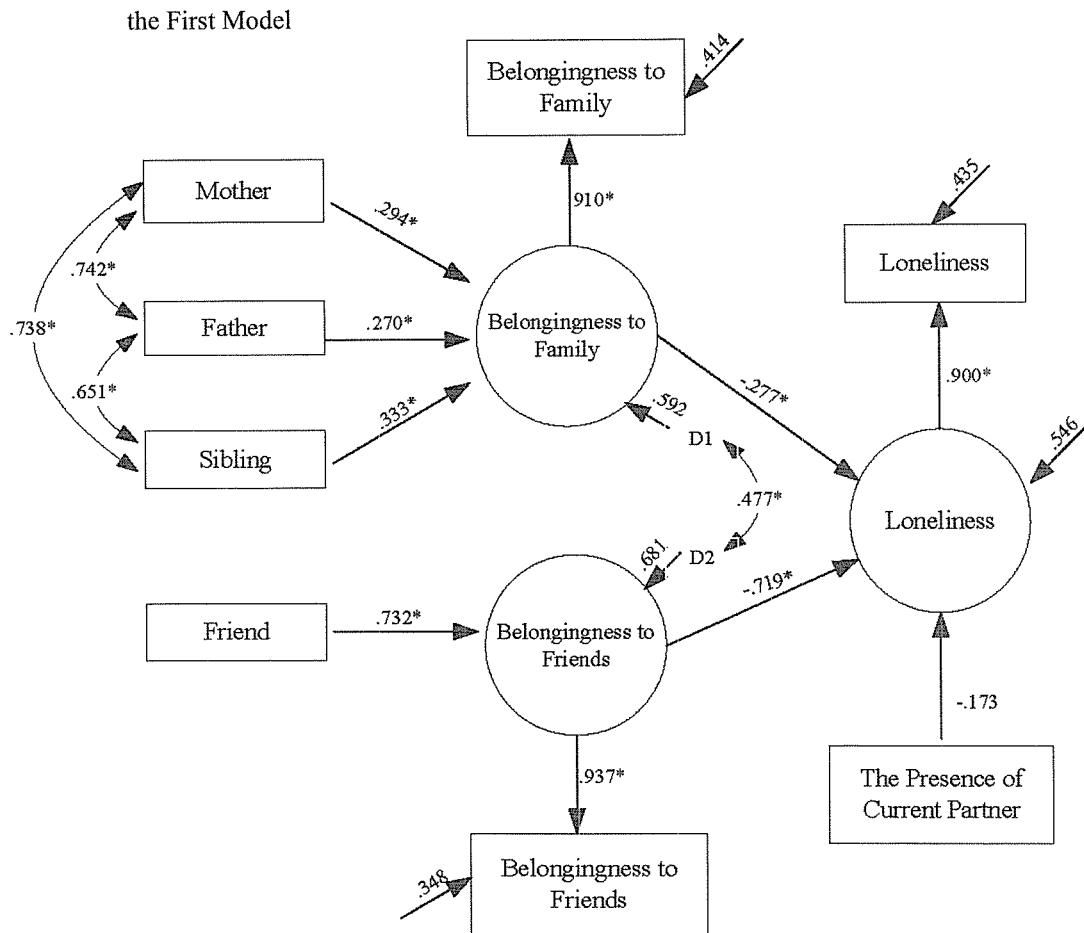


Figure 3. Parameter Estimates for Middle Adolescents of the Model

The model for middle adolescents is presented in Figure 3, along with the standardized path values. As predicted, greater belongingness to family, belongingness to friend, and the presence of a romantic partner were related to less loneliness ($\beta = -.28, -.72, \text{ and } -.17, p < .05$, respectively). Moreover, the interaction between relationship quantity and quality with mother, father and siblings were related to belongingness to family ($\beta = .29, .27 \text{ and } .33, p < .05$, respectively), while the interaction between relation-

ship quantity and quality with friends was related to belongingness to friend ($\beta = .73, p < .05$). The amount of variance explained in the three factors is large: R^2 for belongingness to family = .65; R^2 for belongingness to friend = .54; and R^2 for loneliness = .70.

Late Adolescents

The model-fit statistics are presented in Table 4. Based on the criteria, results from the CFA indicated that the model met all criteria and thus, the model was good for late adolescence.

Table 4. Summary of the Model-Fit Statistics for Late Adolescent of the Model

	χ^2	<i>df</i>	<i>p</i>	CFI	SRMR	RMSEA	RMSEA 90% C. I.
Hypothesized Model	27.40	17	.064	.977	.098	.070	.000, .116

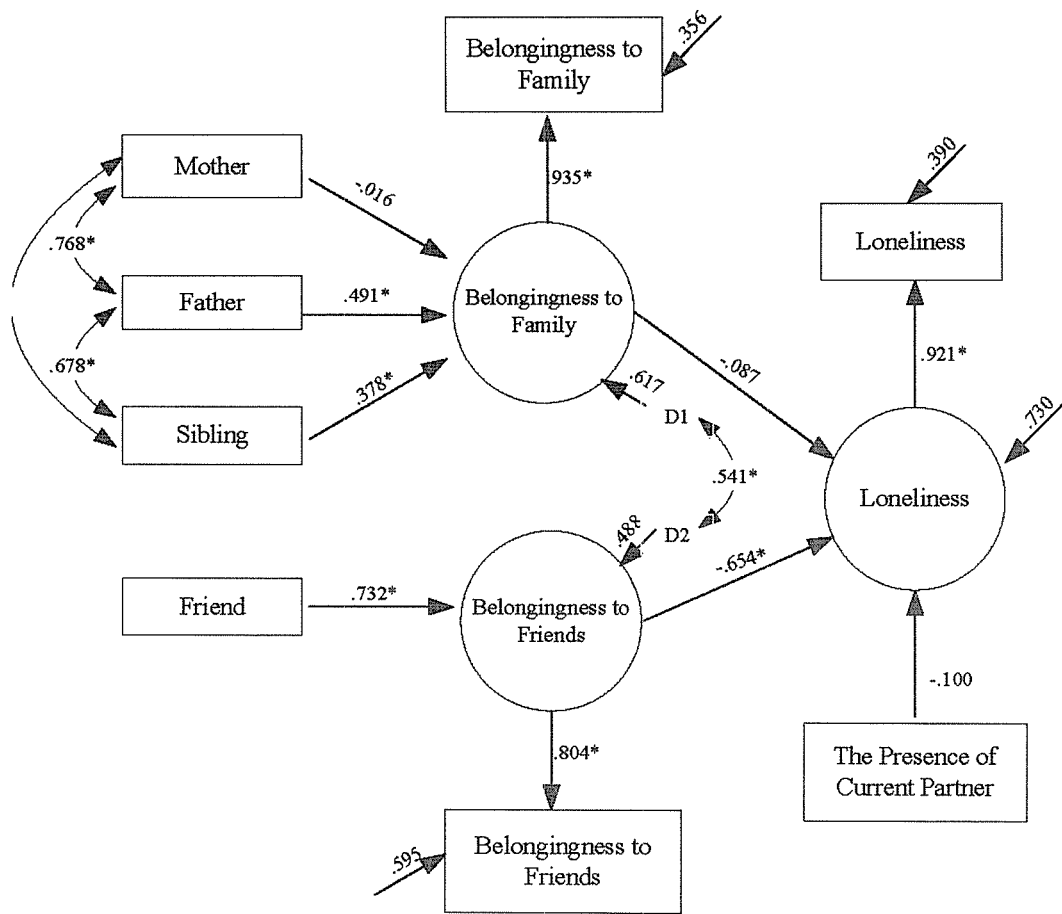


Figure 4. Parameter Estimates for Late Adolescents of the Model

The model for late adolescents is presented in Figure 4, along with the standardized path values. As predicted, greater belongingness to friend was related to less loneliness ($\beta = -.65$, $p < .05$), while belongingness to family was not significantly related to loneliness. Moreover, the interaction between relationship quantity and quality with father and siblings were related to belongingness to family ($\beta = .49$ and $.38$, $p < .05$, respectively), while the interaction between relationship quantity and quality with friends was related to belongingness to friend ($\beta = .84$, $p < .05$). However, the predicted relationship between the presence of a romantic partner and loneliness, although in right direction, was not

significant. Likewise, the expected path of interaction for relationship quantity and quality with participants' mothers to belongingness to family was not significant. The amount of variance explained in the three factors is large: R^2 for belongingness to family = $.62$; R^2 for belongingness to friend = $.70$; and R^2 for loneliness = $.47$.

Multiple Group Modeling

After separately running the hypothesized model on the data for all three groups, multiple group modeling was conducted to assess the difference of each path across the three groups. First, in a combined multiple group analysis, the covariance matrices for the three groups were

Table 5. Multiple Group Analysis Model Fit Indices across Three Groups

	χ^2	df	P	CFI	SRMR	RMSEA	RMSEA 90% C. I.
Unconstrained	80.10	48	.003	.980	.090	.040	.024, .052
Fully-constrained	115.18	62	.000	.967	.109	.045	.032, .058
$\Delta\chi^2 (14) = 35.1, p < .05$							
Partially-constrained	98.62	61	.002	.976	.098	.039	.024, .052
$\Delta\chi^2 (13) = 18.5, p > .05$							

Table 6. Multiple-Group Analysis Path Values of the Model

	Unstandardized Paths			Standardized Paths		
	E	M	L	E	M	L
Mother → Belongingness (FAM)	.017*	.017*	.017*	.172*	.140*	.137*
Father → Belongingness (FAM)	.019*	.055*	.055*	.189*	.389*	.419*
Sibling → Belongingness (FAM)	.043*	.043*	.043*	.409*	.340*	.316*
Friend → Belongingness (FRI)	.078*	.078*	.078*	.747*	.684*	.846*
Belongingness (FAM) → Loneliness	-.178*	-.178*	-.178*	-.208*	-.242*	-.224*
Belongingness (FRI) → Loneliness	-.536*	-.536*	-.536*	-.661*	-.731*	-.506*
The presence of partner → Loneliness	-.110*	-.110*	-.110*	-.069*	-.099*	-.112*

Note. * $p < .05$.

analyzed with this model (with added covariance of sibling and friend) without constraints. Next, all 10 correlations and structural paths were constrained to be the same across all the three groups, which resulted in 20 constrained paths. This model resulted in a good overall fit; however, the loss of fit from the unconstrained model was significantly greater than zero when using a chi-square difference test. Finally, following a suggestion from the Lagrange Multiplier test, one constraint (the path of Father to Belongingness to family is equal for early adolescents and middle adolescents) was released for a final model with a good fit and a negligible loss of fit from an unconstrained model. The summary of model fit indices of these models is presented in Table 5. Also, both the constrained unstandardized path values and the constrained standardized path values for the final model are

shown in Table 6.

Power Analysis

In single group modeling of the late adolescent group, the path from belongingness to family to loneliness was not significant, whereas for multiple group modeling, the path for late adolescents was significant while the estimated value of the path was not significantly different from the estimated value for early and middle adolescents. Due to these inconsistent results, power analyses were conducted to assess the power of each analysis procedure. The three step procedure for conducting a power analysis is as follows: (1) obtain the implied covariance matrix under the alternative hypothesis; (2) use this implied covariance matrix as input for a model-fitting and compute a chi-squared value and degree of freedom under the original model; and (3) check the desired estimate of power from

a table of noncentral chi-square by using the obtained chi-squared value (Loehlin, 1992).

For single group modeling of the *Late Adolescent* group, there is about a 5% chance that if the true model does not contain the path (belongingness to family to loneliness), the originally proposed model (that contains the path) would be rejected. On the other hand, there is approximately a 7% chance that if the true model contains the path (belongingness to family to loneliness), the originally proposed model (that does not contain the path) would be rejected.

For the multi-group model, there is about a 6% chance that if the true model does not contain the constraint (i.e., the path from belongingness to family to loneliness is not the same for the late adolescent and middle adolescent groups), the originally proposed model (that contains the constraint) would be rejected. On the other hand, there is a less than 1% chance that if the true model contains the constraint (i.e., the path from belongingness to family to loneliness is the same for the late adolescent and middle adolescent groups), the originally proposed model (that does not contain the constraint) would be rejected.

DISCUSSION

Results from the SEM indicate that the model was acceptable for all three stages of adolescence. The results also provide support for the salience of the quality and quantity of father and sibling relationships with feelings of belongingness to family for all three stages of adolescence. However, the quality and quantity of mother relationships in respect to feelings of belongingness to family was not salient for early and late adolescents. These findings appear to indicate that father relationships are the most

influential factor in adolescents' feelings of belongingness to family. These findings contradict previous research that showed that loneliness was more strongly related to mother-adolescent relationships than to father-adolescent relationships (Aunola & Nurm, 2005; Farti, Henrich, Brookmeyer, & Kuperminc, 2008). This difference could be explained by Taiwan's paternalistic society. In Taiwan, the father generally plays a more important role than the mother in families.

The model for early adolescents added the covariance of sibling and friend. As indicated in Furman and Buhrmester's (1985) study, sibling interactions provide adolescents with pro-social and conflictual opportunities through which to learn complex social exchange skills. As such, sibling relationships provide a context for learning and practicing ways of relating to similarly aged others. Logically, the quality and quantity of relationships with one's siblings are related to those with one's friends.

The model suggests that feelings of belongingness may mediate between the quality and quantity of one's relationships and feelings of loneliness. The mediation effect is consistent with Resnick et al.'s (1997) national longitudinal survey, which found that a feeling of belongingness to one's parents is a better indicator of loneliness than relationship quality or quantity. The mediation effect also explains why a number of studies have failed to verify a direct relationship between social contact and loneliness (e.g., Jones, 1981; Sermat, 1978). In order to adjust the previous relationship, Jones and Moore (1987) claimed that loneliness might be more strongly related to satisfaction with one's network than with social contact. Yet, research using the cognitive discrepancy model has failed to confirm this finding (Archibald et al., 1995).

Thus, either good or high quantities may not be sufficient to directly affect feelings of loneliness, as loneliness is comprised of inner feelings of weariness, emptiness, or feelings of being abandoned. Feelings of belongingness, on the other hand, are relatively affected by the quality and quantity of one's relationships, as they are the result of the quality of one's interactions. The better the quality of one's family relationships or the more frequent one interacts with family members, the stronger one's feelings of belongingness will be to one's family.

With regard to the relationship between the presence of a romantic partner and feelings of loneliness, it is interesting to note that for middle adolescents, the presence of a romantic partner tends to decrease loneliness; however, this trend was not found for early or late adolescents. The findings appear to support the notion that companionship is the main characteristic for the initial phase of adolescent romance (Shulman & Kipnis, 2001). Thus, for middle adolescents, the presence of a romantic partner, regardless of the quality of the relationship, contributes to decreased feelings of loneliness.

Results indicate that the predicted relationship between feelings of belongingness to friends and loneliness is very clear and consistent for all three stages. The findings support the theory that friends indeed play an important role in adolescent contexts. A paradoxical result was found between feelings of belongingness to family and loneliness. From the SEM results for each adolescent stage, the findings confirm the hypothesis that feelings of belongingness to family significantly affects loneliness for early and middle adolescents, but not for late adolescents. However, from the SEM results for multiple-group modeling, the findings indicate that no significant differences could be found be-

tween feelings of belongingness to family and loneliness for all three stages. Also, for both a single sample design and multi-group design, a power analysis indicates that the study's sample size and effect sizes were too small to have sufficient power for testing these hypotheses; however, the power analysis for neither design was greater than the other. Thus, this study could not differentiate whether feelings of belongingness to family consistently influenced or decreased loneliness throughout adolescence.

Regarding the limitations of this study, with respect to the research subjects, as this study utilizes only youth from Tao-yuan County, it may therefore be inapplicable to youth of other counties and cities. Also, with regard to the research sampling of middle-school, high-school, and college students, stratified cluster sampling is the proper sampling procedure. However, due to labor and resource constraints, this study utilized convenience sampling, which has led to a comparative lack of sample representation.

Implications for Future Research

In sum, by examining combined links between adolescent belongingness and loneliness, this study offers a hypothetical model of adolescent loneliness. This research provides a necessary foundation for future hypothesis testing on the differential influences of adolescent belongingness on loneliness. The next step is to further examine other variables associated with loneliness. For example, how does adolescent belongingness relate to teenagers' psychological health, as well as to more severe psychological distress such as depression or suicide?

Moreover, by the nature of what constitutes the adolescent world, Karcher (2001) proposes three ecological levels of adolescent belongingness, including belongingness to self, belong-

ingness to others, and belongingness to society. Researchers have demonstrated the relationship between students' perceptions of belonging and their study motivation, achievement, and class climate (e.g., Anderman, 2002; Brophy, 2005; Huang, L-P, 2003; Nichols, 2008). This study focused on adolescents' level of belongingness to others, including parents, siblings, friends, and romantic partners. How other components, such as belongingness to self-in-present or belongingness to neighborhood, would affect feelings of loneliness and adolescents' emotional lives remains to be explored.

Pertaining to adolescent romantic relationships, research indicates that adolescents view the influence of romantic relationships as being more than or equally as important as friendships or parent-child relationships (Laursen & Bukowski, 1997). The present study confirms that belongingness to a romantic partner is negatively associated with loneliness. Also, absence of a romantic relationship shows absence of belongingness in the field of romantic experience. However, results also indicate that the presence of a current romantic partner did not demonstrate a significant association; this result suggests that the presence of a current romantic partner may have harmful or helpful effects on loneliness. Thus, the following question remains as a participant for future research: how do unsatisfactory romantic relationships affect self-rated loneliness?

Implications for Educational or Counseling Practices

This study posits several implications for educational and counseling practices. First, an important aim in adolescent education and counseling should be to address adolescent

loneliness by increasing adolescent belongingness. Clearly, the findings demonstrate that belongingness to family, friends, or romantic partners and loneliness are negatively related. Consequently, the promotion of adolescent belongingness can aid in preventing or reducing high levels of adolescent loneliness.

Second, this study suggests that many early and middle adolescents are actively involved in romantic relationships. The findings also show that, in the development of adolescent romantic relationships, middle adolescents place greater emphasis on having a romantic partner; in contrast, late adolescents place greater emphasis on having strong feelings of belongingness to a romantic partner. Yet, despite the fact that romantic relationships during adolescence provide an opportunity to decrease one's level of loneliness, few educational/developmental programs address these relationships. Instead, programs typically emphasize the prevention of sexual behaviors that may place adolescents at risk (Montgomery & Sorell, 1998). Unfortunately, adolescents' psychosocial needs for intimacy are not discussed in these contexts; thus, reducing education and counseling to sexuality only will not meet these adolescents' needs for guidance.

Third, this study specifically suggests that in Taiwan society, the role of the father is extremely important for the constitution of the family in the eyes of adolescents, especially middle and late adolescents. However, compared to mothers, most fathers spend much less time with their children, and they may have difficulty in communicating their feelings to children. Thus, educating and encouraging fathers to actively and consistently participate in family activities should promote belongingness within the family, especially in Taiwan society.

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青少年人際關係的量與質、歸屬感以及寂寞感之研究

陳婉真

摘 要

青少年時期是一段最容易感受到強烈寂寞感的時間。本研究探討青少年之人際關係的質與量如何影響其對家庭、朋友與親密伴侶的歸屬感與寂寞感。研究樣本為 479 名 12 至 22 歲之國中、高中及大學學生，採用結構方程模型驗證從歸屬感角度探討青少年寂寞感之模式。研究結果顯示該模式能夠解釋國中、高中以及大學青少年的寂寞感。青少年與家庭成員的關係能夠促進對家庭的歸屬感；與最要好朋友的关系則有利於對朋友的歸屬感；對家庭與對朋友的歸屬感均可降低青少年的寂寞感。然而，多群組模式無法證明三階段的青少年對家人與朋友的寂寞感與歸屬感有所差異。在家庭歸屬感方面，高中與大學階段的青少年與父親互動比國中階段更為重要。研究發現青少年在追求友誼與親密關係的個體化過程，並不會損及與家庭成員既有的關係。

關鍵字：人際關係的質與量、青少年、歸屬感、寂寞感

陳婉真 國立政治大學教育學系 (wan_chen@nccu.edu.tw)