

# Shyness and psychological adjustment: the moderating role of friendship relationships

*Timidezza e adattamento psicologico: il ruolo moderatore delle relazioni di amicizia*

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## Summary

### Objectives

The goals of this study were to explore the relationship between shyness and the quantitative and qualitative aspects of friendship during adolescence and to analyse the moderating role of such variables in the relationship between shyness and internalizing difficulties.

### Methods

A total of 683 adolescents who were attending secondary and high schools in Florence were enrolled: 398 early adolescents (220 males and 178 females) aged 11 to 13 ( $M = 12.32$ ;  $SD = 0.71$ ) and 285 late adolescents (161 males and 124 females) age 17 to 19 ( $M = 17.71$ ;  $SD = 0.68$ ). Subjects completed a battery of questionnaires that included measures of shyness, quantitative and qualitative aspects of friendship and internalising problems. Shyness was assessed using the Italian version (Ponti & Tani, 2009) of the Revised Cheek and Buss Shyness Scale (RCBS; Cheek, 1983). Reciprocal friendships were measured using friendship nominations (Bukowski, Hoza, & Boivin, 1994) and friendship qualities were assessed via the Italian version (Ponti, Guarnieri, Smorti, & Tani, 2010) of the Friendship Qualities Scale (FQS; Bukowski et al., 1994), which assesses 5 dimensions: conflict, companionship, help, security and closeness. Internalising problems were assessed using the Italian version (Pastorelli, Gerbino, Vecchio, Steca, Picconi & Paciello, 2002) of the Youth Self Report (YSR) developed by Achenbach (1991). Two analyses of variance (ANOVAs) were conducted to assess between group differences in the number of reciprocal friendship and in levels of social rejection. Multivariate analyses of variance (MANOVA) were conducted to as-

sess between group differences in friendship relationship qualities. Finally, a series of hierarchical regression analyses were conducted to explore the moderating role of the quality of friendship relationship on the correlation between shyness and psychological adjustment.

### Results

The results indicated that shyness does not affect the quantitative aspects of friendship considered. However, shy adolescents perceived their friendship relationships as characterized by more negative aspects than did their peers. Moreover, the moderating role only of qualitative aspect of friendship was seen: participants who perceived their friend as helpful and supportive showed significantly fewer internalising problems related to shyness.

### Conclusions

Overall, these results showed that the quantitative aspects of friendship do not vary as a function of shyness, but that, in contrast, the qualitative aspects of reciprocal friendships vary significantly between shy and non-shy individuals. In other words, shy individuals have the same number of reciprocal friendships and were not significantly more rejected by their peers than non-shy adolescents, but they do show a friendship relationship quality characterised by more negative aspects than their peers. Moreover, these results demonstrated the importance that a positive friendship relationship has in influencing individual well-being, such as internalising difficulties, especially for shy individuals.

### Key words

Shyness • Friendship relationship • Psychological adjustment

## Introduction

Several authors have already pointed out that peer relationships provide a significant context for child development and psychosocial adaptation<sup>1,2</sup>. Those claims have been amply demonstrated through numerous more recent empirical studies (see Rubin et al. for a review)<sup>3</sup>. However, in the last 30 years, peer relationships have been a topic of greater interest in clinical and developmental psychology. This growing attention is due to awareness of the impor-

tance that these relationships play in the development of children<sup>4</sup> and, consequently, of outcomes of children who interact less with their peers<sup>5</sup>. Indeed, regarding this, some authors have proposed that socially withdrawn or friendless children often experience difficulties in social and emotional development. For example, they can suffer from loneliness, internalising problems, lack of social skills, or develop negative feelings about themselves<sup>6,7</sup>. Similarly, friendship quality constitutes a significant indication of well-being. To live satisfactory and supportive friend-

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ship relationships leads to adequate social adaptation and protects from stressful events and depressive emotions <sup>4</sup>.

## Friendship Quality and Adjustment

A growing number of empirical findings have documented that friendship is central in individuals' lives and that the quality of this relationship has a substantial impact on psychological and social adjustment. Relationships with best friends are especially important during adolescence, when young people become less dependent on their parents for emotional support and desire autonomy <sup>8</sup>. In this period, friendships became more salient and complex, and are defined not only by companionship but also by reciprocity, trust and emotional closeness <sup>9</sup>.

Several investigations have demonstrated that friendships give adolescents opportunities to improve their social skills and competence. Specifically, these relationships foster self-esteem, provide companionship and support, and increase the ability to cope with stressors <sup>10</sup>. Moreover, relationships with friends facilitate the exploration of identity and the construction of the Self, through sharing problems and disclosing one's personal thoughts and feelings <sup>11</sup>. Friends also use more positive conflict management during disagreements and more mutual orientation when working together than when working with other classmates <sup>12</sup>.

Recent studies, however, have shown that these positive outcomes on development depend on friendship quality. Specifically, only high-quality friendships, characterised by more prosocial behaviour, intimacy and support, as well low levels of conflict and antagonism, reduce the risk for psychosocial problems. In contrast, negative friendship quality increases the risk for poor developmental outcomes <sup>13</sup>. For example, studies have shown that jealousy, criticism and punishment are associated with loneliness, aggression and social maladjustment <sup>14</sup>.

Considering the advantages linked to these aspects of peer relationships, researchers who focus on shyness have devoted considerable attention to analysing characteristics of the friendship networks of shy individuals. Studies addressing the relationship between friendship and shyness have mainly focused on childhood, while relatively little attention has been devoted to friendship in shy adolescents, even though numerous studies have demonstrated that friendships are central across the lifespan <sup>15</sup>. In fact, as mentioned above, these relationships significantly promote autonomy, self-esteem, identity, social-cognitive development, overall adjustment and individual well-being <sup>4</sup>.

## Shyness and friendship

Research in the field of peer relationships has shown that shy children, those avoiding interactions with peers, are more rejected by their classmates, have a bad reputation

within the peer group and are also often the targets of peer victimisation <sup>16</sup>. Moreover, shy children have been found to be less involved, prosocial and accepted in peer interactions than uninhibited children <sup>17</sup>.

Studies in this area have also shown that these aspects seem more evident in males than in females. For example, there is evidence showing that shy boys appear to be at greater risk of peer exclusion, while shy girls appear to enjoy greater peer acceptance <sup>18</sup>.

Despite these relational difficulties, shy and non-shy children appear to have same probability of having mutual friendship, during early childhood, middle childhood and late childhood <sup>19</sup>.

However, what distinguishes the friendships of shy children from non-shy children seems to be the quality of these links. Shy children, compared to their coetaneous peers, have friendships characterised by lower quality. In particular, research has shown that they consider their friendship relationships as less useful, close, fun and resilient when inevitable conflicts and disagreements occur <sup>19</sup>.

Despite the paucity of available data, a similar trend seems to emerge during adolescence and early-adulthood <sup>20</sup>. In this regard, Asendorpf has highlighted that shy individuals, with entry into University, needed more time to establish new friendships, but some months later the numbers of friendships of shy and non-shy individuals appear to be similar. Nevertheless, shy people perceived their friendship relationship as less close and supportive than did non-shy people <sup>21</sup>.

Among the studies that have investigated friendship relationships of shy people, some authors have analysed the influence of some aspects related to peer relationships on outcomes of shyness, such as being involved in close dyadic friendship, or the level of social rejection experienced in the classroom. Regarding this, peers viewed shy children involved in close dyadic relationships as more popular and sociable than those without close friendship <sup>19</sup>. Moreover, negative outcomes of shyness seem significantly more evident in shy children that experienced peer rejection and exclusion daily, unlike shy children who did not experience significant peer exclusion. These children, in fact, showed significantly lower levels of depressive symptoms and significantly higher levels of prosocial behaviours <sup>22</sup>.

Despite the importance of such results, these studies have been conducted during middle childhood, and to the authors' knowledge no studies have analysed the possible protective role that friendship network may play during adolescence.

## The present study

The present work aims to contribute to the research on friendship of shy adolescents. More specifically, using a

*cross-sectional* design, this study aimed to investigate the characteristics, both quantitative (number of reciprocal friendship and level of social reject) and qualitative (quality of the best friendship relationship), of the friendship networks of shy individuals in two age groups: early adolescence and late adolescence. Moreover, these aspects were analysed separately for males and females to detect possible gender differences.

Subsequently, the study investigated the moderating role of such variables, both quantitative and qualitative, in the relationship between shyness and internalising difficulties during both early and late adolescence.

In line with findings from previous studies, the following hypotheses were formulated. In relation to the first aim, we expected that shy adolescents would have the same number of reciprocal friendships as non-shy adolescents, but that they would, at the same time, be more rejected by peers. In addition, we hypothesised that shy adolescents would perceive their friendship relationships as being characterised by more negative quality than their non-shy peers. Drawing on previous research in this area, it was also hypothesised that shy boys might be more rejected by their peers. Given the scarcity of data, no hypothesis was formulated about gender differences on qualitative aspects of friendship or about age differences on the quantitative and qualitative aspects of the friendship network.

In relation to the second aim, in agreement with studies conducted during childhood, we expected that some characteristics related to friendship networks would protect shy adolescents from negative adjustment outcomes. In other words, we hypothesised that the relation between shyness and internalizing difficulties would be dependent on the value of the aspects of friendships. The level of social rejection, number of reciprocal friendship and the quality of the best friendship, moderator variables in our theoretical model were expected to modify the casual effect of shyness on internalising problems.

## Materials and methods

### Participants

A total of 683 students were recruited for the present study and divided into two age groups:

1. 398 early-adolescents (220 males and 178 females) aged 11 to 13 ( $M = 12.32$ ;  $SD = 0.71$ ) attending secondary school and who were randomly selected from all the secondary schools in the metropolitan area of Florence. Specifically, five schools were randomly drawn from the list of schools of the district, and were then contacted to participate in the study;
2. 285 late-adolescents (161 males and 124 females)

age 17 to 19 ( $M = 17.71$ ;  $SD = 0.68$ ) attending three high schools in Florence (a lyceum specializing in classical studies, a lyceum specializing in science education, and a technical institute). Firstly, one high school of any type was randomly extracted, and then three were selected at random.

Formal consent was obtained from parents and educational authorities prior to the commencement of data collection. After adolescents had also agreed to participate in the present study, they were asked to anonymously complete a battery of questionnaires in the classroom during normal school hours.

The questionnaires were designed to gather information about personal and demographic data (i.e., age, gender, grade and origin), and information about parents' school attendance and occupations. The battery also included a measure of shyness, two measures of the quantitative aspects of friendship, a measure of qualitative aspect of the best friendship and a measure of internalising problems as a measure of psychological difficulties.

More than 98 of the participants came from the centre of Italy, and particularly the area around Florence. Participants were from families who had middle to high socioeconomic status. Approximately 70% of their parents had a high school diploma or university degree (41.1% of fathers had a high school diploma and 29% had a university degree; and 48.3% of mothers had a high school diploma and 28.4% of them had a university degree). Moreover, 98.7% of fathers were employed and only 1.3% were unemployed. Finally, 99.2% of mothers were employed and only 0.8% were not employed.

After data collection, participants were classified based on their shyness scale score. Using the 40<sup>th</sup> and 60<sup>th</sup> percentile as cut-off points as indicated by the authors of the instrument<sup>23</sup>, participants were divided into three groups:

- I. *Shy participants*. RCBS scores above the 60<sup>th</sup> percentile: 188 early adolescents (96 M, 92 F) and 88 late adolescents (41 M, 47 F);
- II. *Shy on average participants*. RCBS scores between the 40<sup>th</sup> and 60<sup>th</sup> percentile: 72 early adolescents (41 M, 31 F) and 66 late adolescents (34 M, 32 F);
- III. *Non-Shy participants*. RCBS scores below the 40<sup>th</sup> percentile: 138 early adolescents (83 M, 55 F) and 131 late adolescents (86 M, 45 F).

### Measures

*Shyness*. The Italian version<sup>24</sup> of the *Revised Cheek and Buss Shyness Scale*<sup>25</sup> was used to measure shyness. This scale is a unifactorial measure of shyness consisting of 13 items that measure discomfort and inhibition in social situations. Items were measured on a 5-point scale ranging from 1 (*very uncharacteristic*) to 5 (*extremely characteristic*).

This scale has shown good psychometric properties. The

results of the Italian adaptation of the scale have confirmed a unidimensional factorial structure. Confirmatory factor analysis procedures were used to assess the adequacy of the model, and the fit index indicated an adequate fit to the data (CFI = 0.91; SRMR = 0.06). Moreover, the internal reliability of the scale, measured through the  $\rho$  index<sup>26</sup>, was 0.86.

## Friendship relationships

The quantitative dimensions of friendship were assessed via two instruments.

*Friendship nomination*<sup>27</sup>. Students were asked to write the names of their best friend classmates whom they feel to be “really good friend”. Participants could report up to three names in preference order. Using this instrument, it is possible to measure the number of reciprocal friendships considering the times in which partners choose each other as first, second, or third choice.

*Sociometric test*<sup>28</sup>. This measure was used to indicate social rejection in the classroom. In particular, students were asked to write the names of their classmates with whom they would not like to do any activities. Also in this case, participants could report up to three names.

The Italian version<sup>29</sup> of the *Friendship Qualities Scale* (FQS) developed by Bukowski et al.<sup>27</sup> was used to measure qualitative friendship dimensions. This scale consisted of 22 items that assessed 5 dimensions: (1) companionship, (2) conflict, (3) help, (4) security, and (5) closeness. Prior to filling out the questionnaire, respondents were asked to choose the friend whom they considered to be most important or closest to them and to answer the questions on the scale thinking of their *actual* relationship with this person. Response choices for each item were rated on a 5-point Likert scale from 1 (*Absolutely false*) to 5 (*Absolutely true*).

Internal consistency coefficients (Cronbach’s alpha) we-

re 0.71 for companionship dimension, 0.64 for conflict dimension, 0.82 for help dimension, 0.70 for security dimension and 0.79 for closeness dimension.

*Internalizing problems*. The Italian version<sup>30</sup> of the *Youth Self Report* (YSR)<sup>31</sup> was administered to measure internalising problems. The YSR assesses 3 syndrome scales, grouped under one broad scale that is labelled as the internalising scale (withdrawn, somatic complaints and anxious/depressed subscales). Each item is rated on a 3-point Likert scale ranging from “not true” (0) to “very true or often true” (2). The internal consistency coefficient (Cronbach’s alpha) for the internalising scales was 0.87.

## Results

### *Shyness and quantitative aspects related to peer networks*

The means and standard deviations of number of reciprocal friendship and of level of social reject for the shyness groups created are presented in Table I.

Two analyses of variance (ANOVAs) were conducted to assess between group differences in number of reciprocal friendship and levels of social rejection. The independent variables were Group (shy, shy on average, and non-shy), Gender (males and females), and Age (early adolescents and late adolescents). The dependent variable was the number of reciprocal friendship in first case and levels of social reject in second case.

Referring to the number of reciprocal friendships, an ANOVA analysis showed no significant effects for Group, Gender, and Age. In addition, there were no significant interactions for Group x Gender, Group x Age, and Group x Gender x Age.

Also with regard to levels of social rejection, an ANOVA test revealed no significant differences by Group, Gender, and Age. Also in this case, there were no significant inte-

**TABLE I.**

Means and standard deviations of the number of reciprocal friendships and social rejection by group and gender. *Medie e deviazioni standard del numero di amicizie reciproche e di rifiuto sociale in funzione del gruppo e del genere.*

	EARLY-ADOLESCENTS						LATE-ADOLESCENTS					
	Shy		Shy on average		Non-shy		Shy		Shy on average		Non-shy	
	M	DS	M	DS	M	DS	M	DS	M	DS	M	DS
<b>Reciprocal friendships</b>												
Males	1.42	0.95	1.83	0.95	1.45	1.07	1.54	1.03	1.53	1.02	1.42	1.07
Females	1.37	1.01	1.58	1.12	1.53	1.03	1.64	0.76	1.66	1.00	1.73	.89
<b>Social reject</b>												
Males	2.30	2.84	2.15	2.29	2.07	2.24	2.15	1.96	1.59	1.44	1.59	1.91
Females	1.68	2.28	1.71	2.36	1.96	2.63	1.91	1.73	1.75	2.14	2.04	2.11

**TABLE II.**

Means and standard deviations of friendship qualities dimensions assessed through FQS instrument in early and late adolescent groups. *Medie e deviazioni standard delle dimensioni della qualità dell'amicizia valutate attraverso l'FQS nei gruppi di preadolescenti e tardo adolescenti.*

	SHY				SHY ON AVERAGE				NON-SHY			
	Males N = 96		Females N = 92		Males N = 41		Females N = 31		Males N = 83		Females N = 55	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<b>Early adolescents</b>												
Com.	11.34	2.18	11.80	2.24	10.90	2.27	12.10	1.90	11.88	2.10	12.94	2.07
Con.	9.07	3.64	8.68	3.80	8.66	3.15	7.58	3.00	9.64	4.01	7.67	3.14
Hel.	19.29	3.92	21.51	3.50	19.39	3.48	21.65	2.50	20.47	3.78	22.82	3.44
Sec.	18.25	3.52	20.27	3.45	18.76	3.80	21.71	2.58	19.73	3.81	22.47	2.89
Clo.	19.42	3.69	21.87	3.02	19.73	3.50	23.16	2.00	20.49	3.45	23.24	2.82
<b>Late adolescents</b>												
Com.	10.32	2.39	11.19	1.83	10.70	2.30	11.74	1.54	11.22	2.01	12.18	1.54
Con.	9.32	3.09	9.06	3.16	8.94	3.33	8.22	3.66	8.89	3.33	8.91	3.15
Hel.	18.39	4.10	22.19	2.39	20.18	3.64	22.50	2.44	21.64	2.97	23.35	1.69
Sec.	17.97	3.70	20.19	2.84	19.79	3.54	21.69	2.92	20.74	3.13	22.80	1.96
Clo.	17.51	4.01	20.70	2.32	19.65	4.07	22.56	2.31	19.67	3.13	22.93	1.53

Com.: Companionship; Con.: Conflict; Hel.: Help; Sec.: Security; Clo.: Closeness.

reactions for Group x Gender, Group x Age, and Group x Gender x Age.

### *Shyness and friendship relationship qualities*

Table II illustrates the means and standard deviations for the five FQS subscales for the shyness groups identified for early adolescents and late adolescents.

Multivariate analyses of variance (MANOVA) were conducted to assess between group differences in friendship relationship qualities. A follow-up univariate ANOVA was carried out when the MANOVA results were significant. The independent variables were Group (shy, shy on average, and non-shy), Gender (males and females), and Age (early adolescents and late adolescents). The dependent variables were the five friendships relationship subscales.

The MANOVA was statistically significant, showing significant multivariate effects for Group,  $F(10, 1334) = 7.98$ ;  $p < 0.001$ ,  $\eta^2 = 0.06$ , Gender,  $F(5, 667) = 28.34$ ;  $p < 0.001$ ,  $\eta^2 = 0.18$  and age,  $F(5, 667) = 12.40$ ;  $p < 0.001$ ,  $\eta^2 = 0.09$ . In contrast, there were no significant interactions for Group x Gender, Group x Age, and Group x Gender x Age.

Follow-up univariate analyses conducted with Group as the independent variable showed significant differences on four dimensions: *Companionship*,  $F(2, 671) = 11.99$ ;  $p < 0.001$ ,  $\eta^2 = 0.04$ , *Help*,  $F(2, 671) = 16.71$ ;  $p < 0.001$ ,  $\eta^2 = .05$ ,

*Security*,  $F(2, 671) = 28.98$ ;  $p < 0.001$ ,  $\eta^2 = 0.08$ , and *Closeness*,  $F(2, 671) = 19.35$ ;  $p < 0.001$ ,  $\eta^2 = 0.06$ . In particular, Bonferroni post-hoc tests revealed that adolescents in the shy group perceived lower levels of companionship and help from their friends than did their peers from the shy on average group. These, in turn, perceived them lower than did non-shy peers. Moreover, shy participants perceived less security and less closeness than did their peers from the other two groups. No significant differences emerged between groups on the *Conflict* dimension.

Subsequent univariate analyses showed that Gender was a significant variable for four dimensions: *Companionship*,  $F(1, 671) = 29.94$ ;  $p < 0.001$ ,  $\eta^2 = 0.04$ , *Help*,  $F(1, 671) = 77.64$ ;  $p < 0.001$ ,  $\eta^2 = 0.10$ , *Security*,  $F(1, 671) = 71.42$ ;  $p < 0.001$ ,  $\eta^2 = 0.10$ , and *Closeness*,  $F(1, 671) = 130.74$ ;  $p < 0.001$ ,  $\eta^2 = 0.16$ . Girls perceived higher levels of companionship, help, security and closeness than did boys. On the contrary, no differences emerged between boys and girls in relation to perceived levels of conflict. Finally, univariate analyses of variance revealed that Age was a significant factor for two dimensions of friendship: *Companionship*,  $F(1, 671) = 11.76$ ;  $p < 0.01$ ,  $\eta^2 = 0.02$ , and *Closeness*,  $F(1, 671) = 9.67$ ;  $p < 0.01$ ,  $\eta^2 = 0.02$ . The results indicated that early adolescents perceived higher levels of companionship and closeness from their friend than did late adolescents, however it must be noted that

there was a low power effect associated with these results. No gender differences emerged for *Conflict*, *Help*, or *Security* dimensions.

### *Shyness, quantitative and qualitative characteristics related to peer network, and psychological wellbeing*

In order to explore the moderating role of the quality of friendship relationship on the relationship between shyness and internalizing difficulties, a series of hierarchical regression analyses were conducted, following procedures recommended by Aiken and West<sup>32</sup>, separately for the early and late adolescents groups.

The independent variables were included in the regression equation in three consecutive steps. In Step 1 the shyness score was entered. In Step 2, the moderating variables relative to the number of reciprocal friendship, the levels of social rejection and the friendship relationship quality were entered. Lastly, in Step 3 the two-way interactions between shyness and the moderating variables (the multiplicative products of the standard scores, shyness x number of reciprocal friendship, shyness x level of social reject and shyness x quality of friendship relationship) were entered. As dependent variable the score obtained at the Internalizing scale of the YSR was included. Significant interaction between the predictor (the shyness score) and the moderating variables are represented graphically. Moreover, to examine the significance of each slope, simple slope analyses were conducted utilising *post-hoc* regressions<sup>31</sup>.

### *Preliminary analyses*

In order to obtain a single score for the quality of friendship relationship to include in the regression equation, two factorial analyses with the five dimensions of the FQS were conducted pre-emptively and separately for the early and late adolescent groups.

Table III shows the correlation analyses among the five dimensions of FQS in relation to the early adolescent

and late adolescent groups. As indicated in the table, the conflict dimension correlated negatively with all other dimensions in both the early and late adolescent groups. For this reason, the conflict score was reversed before factorial analyses were conducted in order to obtain loadings with the same sign on the hypothetical common factor.

Results from factor analyses indicated that the five dimensions of FQS all loaded onto a single factor that accounted for 60.41% of the total variance in early adolescents, and for 54.88% in the late adolescent group. In addition, the saturations of the five dimensions of FQS were all statistically significant, showing saturation values of 0.71, 0.34, 0.85, 0.79 and 0.82 for the early adolescents and 0.68, 0.32, 0.84, 0.68 and 0.85 for the late adolescents in relation to companionship, low conflict, help, security and closeness dimensions, respectively.

Such a single factor reflecting a global score of friendship quality showed good internal consistency in both groups (Cronbach's alpha was 0.82 for the early adolescent group and 0.73 for the late adolescent group).

To avoid the problem of multicollinearity, Aiken and West's<sup>32</sup> guidelines were followed and mean-centred the other independent variables, such as shyness score, number of reciprocal friendship and level of social reject separately for each age group.

### *Moderating analyses*

The results of the hierarchical regression analysis regarding the moderating role of the number of reciprocal friendships on the relationship between shyness ( $M = 33.73$ ;  $SD = 8.23$ ) and internalising problems ( $M = 13.48$ ;  $SD = 8.52$ ) for the early adolescent sample and shyness ( $M = 31.48$ ;  $SD = 7.71$ ) and internalising problems ( $M = 14.05$ ;  $SD = 7.80$ ) for the late adolescent sample are shown in Table IV. As can be seen, there were no significant interactions between the predictor and moderator variables in the prediction of internalising problems in both age groups.

**TABLE III.**

Correlations between the FQS dimensions in early and late adolescents. *Correlazioni tra le dimensioni dell'FQS nei pre- e nei tardo adolescenti.*

	EARLY ADOLESCENTS					LATE ADOLESCENTS				
	1	2	3	4	5	1	2	3	4	5
1. Com.	-					1. Com.	-			
2. Con.	-0.28	-				2. Con.	-0.27	-		
3. Hel.	0.62	-0.29	-			3. Hel.	0.58	-0.28	-	
4. Sec.	0.57	-0.30	0.65	-		4. Sec.	0.43	-0.28	0.58	-
5. Clo.	0.57	-0.29	0.70	0.65	-	5. Clo.	0.59	-0.26	0.69	0.59

Com.: Companionship; Con.: Conflict; Hel.: Help; Sec.: Security; Clo.: Closeness.

**TABLE IV.**

Hierarchical regression analysis results for the number of reciprocal friendships as a predictor of internalising problems in the early and late adolescent samples. *Risultati dell'analisi di regressione gerarchica per il numero di amicizie reciproche come predittore di problemi internalizzati nei gruppi di pre- e tardo adolescenti.*

	b	t	p	R <sup>2</sup>	ΔR <sup>2</sup>
<b>Early adolescents</b>					
Shyness	0.41	9.11	< 0.001	0.17	-
Number of reciprocal friendships	-0.16	-3.52	< 0.001	0.20	0.03
Shyness x Number of reciprocal friendships	-0.03	-0.69	ns	0.20	0.00
<b>Late adolescents</b>					
Shyness	.50	9.72	< 0.001	0.27	-
Number of reciprocal friendships	-0.01	-0.22	ns	0.27	0.00
Shyness x Number of reciprocal friendships	-0.07	-0.07	ns	0.27	0.00

Regarding the moderating role of the levels of social rejection hierarchical regression analysis there were no significant interactions between shyness and such moderator variable in prediction of internalising problems, either in early adolescent group or in late adolescent group (Tab. V). The results of the hierarchical regression analysis regarding the moderating role of the quality of friendship relationship in the prediction of internalising problems for the early adolescent sample are shown in Table VI.

As seen, there was a significant interaction between shyness and friendship relationship quality variables. The moderating variable that emerged acted as a *buffer* moderator on the relationship between shyness and internalising problems. In fact, shyness was more strongly associated with internalising problems at lower levels of friendship relationship quality. This relationship is graphically shown in Figure 1.

Post-hoc analyses indicated that the relationship between

shyness and friendship relationship quality was significant and positive when quality of friendship relationship was low,  $\beta = 0.54$ ,  $t(71) = 5.45$ ,  $p < 0.001$ , medium,  $\beta = 0.39$ ,  $t(265) = 6.90$ ,  $p < 0.001$ , and high,  $\beta = 0.28$ ,  $t(56) = 1.95$ ,  $p < 0.05$ .

For the late adolescent sample, a hierarchical regression analysis revealed the significant moderating effect of the friendship relationship quality variable on the relationship between shyness and internalising problems (Table VI).

Even in the late adolescent sample, the results showed a pattern consistent with that of a *buffering* process. As indicated in Figure 2, shyness was more strongly related to internalising problems when there were lower levels of friendship relationship quality.

Results of the post hoc simple slope regression equations indicated that the relationship between shyness and internalising problems was significant and positive when quality of friendship relationship was low,  $\beta = 0.65$ ,

**TABLE V.**

Hierarchical regression analysis results for the levels of social rejection as a predictor of internalising problems in the early and late adolescent samples. *Risultati dell'analisi di regressione gerarchica per i livelli di rifiuto sociale come predittore di problemi internalizzati nei gruppi di pre- e tardo adolescenti.*

	b	t	p	R <sup>2</sup>	ΔR <sup>2</sup>
<b>Early adolescents</b>					
Shyness	0.40	8.70	< 0.001	0.17	-
Social rejection	0.16	3.51	< 0.01	0.19	0.02
Shyness x social rejection	0.08	1.85	ns	0.20	0.01
<b>Late adolescents</b>					
Shyness	0.49	9.72	< 0.001	0.26	-
Social rejection	0.22	4.26	< 0.001	0.30	0.04
Shyness x social rejection	0.09	1.76	ns	0.31	0.01

**TABLE VI.**

Hierarchical regression analysis results for the quality of friendship relationships as a predictor of internalising problems in the early and late adolescent sample. *Risultati dell'analisi di regressione gerarchica per la qualità della relazione amicale come predittore di problemi internalizzati nei gruppi di pre- e tardo adolescenti.*

	b	t	p	R2	ΔR2
<b>Early adolescents</b>					
Shyness	0.41	8.80	< 0.001	0.17	-
Social rejection	-0.15	-3.30	< 0.01	0.19	0.02
Shyness x social rejection	-0.12	-2.68	< 0.01	0.21	0.02
<b>Late adolescents</b>					
Shyness	0.42	7.95	< 0.001	0.27	-
Social rejection	-0.21	-4.08	< 0.001	0.32	0.05
Shyness x social rejection	-0.15	-2.91	< 0.01	0.34	0.02

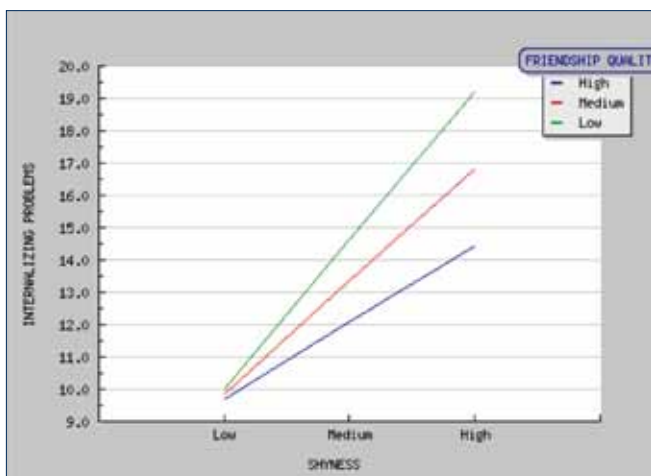
$t(36) = 4.96, p < 0.001$ , medium,  $\beta = 0.45$ ,  $t(205) = 7.71$ ,  $p < 0.001$ , and high,  $\beta = 0.37$ ,  $t(40) = 2.51$ ,  $p < 0.05$ .

## Discussion and conclusions

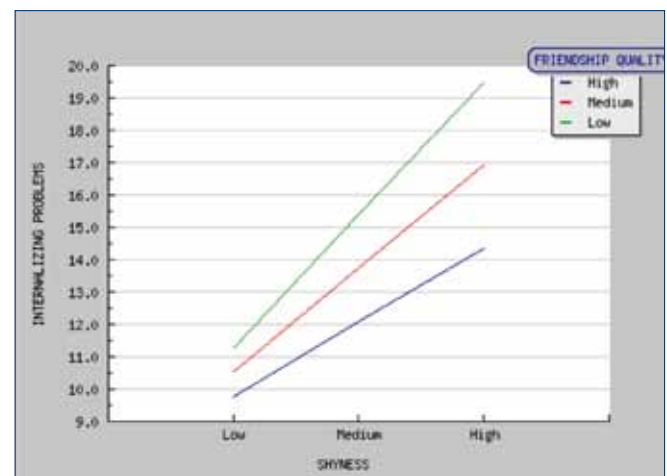
The first goal of this study was to examine the relationship between shyness and both quantitative, such as the number of reciprocal friendship and the level of social reject, and qualitative characteristics, like the quality of best friendship and friendship during adolescence.

In relation to quantitative aspects of friendship, the results indicated that shyness affected neither the number of reciprocal friendship nor the level of social reject experien-

ced in classroom. In line with our hypothesis and the data about prevalence of friendship of shy children<sup>19</sup>, both shy early adolescents and late adolescents have the same number of reciprocal friendships as their coetaneous non-shy peers. In contrast, different from our hypothesis and from existing literature, the results showed that shy participants were not significantly more rejected by their peers than non-shy early- and late-adolescents. It should be emphasised, however, that previous research has been conducted during childhood and that there are few or no studies on social rejection during the ages that we considered. Although this is an aspect that requires further research, it is possible that during childhood the child unable to interact



**FIGURE 1.** Interaction between shyness and friendship relationship quality in the prediction of internalising problems in the early adolescent sample. *Interazione tra la timidezza e la qualità della relazione amicale nella predizione di problemi internalizzati nel gruppo di preadolescenti.*



**FIGURE 2.** Interaction between shyness and friendship relationship quality in the prediction of internalising problems in the late adolescent sample. *Interazione tra la timidezza e la qualità della relazione amicale nella predizione di problemi internalizzati nel gruppo di tardo adolescenti.*



with other children that shows indices of anxiety and fear that is negatively judged and rejected. Instead, during adolescence, other types of behaviour are judged more negatively by peers, such as externalising behaviours. In this regard, Rubin et al. have pointed out that social rejection constitutes a response to several types of behaviours, including both shy and aggressive behaviours<sup>33</sup>.

Referring to qualitative aspects of best friendship relationship, the results are consistent with our hypothesis and support the data from the existing previous investigations that have been conducted on the quality of friendship of shy individuals<sup>19,20</sup> showing that among shy adolescents friendship relationship quality is characterised by more negative aspects compared to their peers. More specifically, shy youths perceived lower levels of companionship and help from their best friend and reported lower levels of security and closeness than did other participants. Overall, shy participants carry out less activities with their best friends and feel less safe and protected from bullying by peers. Moreover, shy youths rated their best friendship as less durable, strong and helpful; they viewed their friendship as relatively low in proximity, warmth and tenderness than the other participants.

No significant gender differences emerged regarding variables related to the peer networks considered. Although the data indicate greater interpersonal difficulties for males than females<sup>34</sup>, our results have shown the same probability, for both shy boys and girls, of being rejected by classmates, the same ability to establish friendship relationships and, finally, to establish friendships that are qualitatively similar to those of non-shy boys and girls. These results are in agreement with recent studies that have highlighted differences in prevalence and quality of friendship between shy males and females<sup>19,20</sup>. Moreover, our results have showed no significant differences between early- and late adolescents in the variables considered. The second aim of this study was to investigate the moderating role of the variables related to friendship networks considered in the relationship between shyness and internalising difficulties. In contrast to our hypothesis, neither the number of reciprocal friendships nor the levels of social rejection were a significant moderator in the groups of early and late adolescents. Instead, the quality of best friendship exercises a protective role on levels of internalising problems related to shyness in both early and late adolescents. In fact, adolescents who perceived their best friend as helpful, reliable when in need, available for sharing their problems and desirable as a companion with whom to spend free time, showed a lower index of internalising problems.

A broad body of studies has amply demonstrated the importance that positive friendship relationships have in influencing individual well-being and adjustment<sup>4</sup>. Numerous authors have, moreover, emphasised the importance

of this, especially for shy individuals. For example, friendship relationship closeness and durability represent for shy individuals a source of support for interpersonal difficulties experienced in the social context, protecting him from the tendency to avoid other people<sup>19</sup>. Other authors have discussed such friendships in terms of concrete support for coping with potentially anxiety-producing social situations, such as speaking with little-known peers, with classmates of the opposite sex, or with teachers<sup>35</sup>. Finally, other authors have supposed that such relationships might represent a protective factor for the development of psychological problems related to shyness<sup>19</sup>. This hypothesis was supported by our results.

Altogether, despite the explorative nature of the present study and the necessity of further examination, this work represents a significant contribution to the study of the friendship networks of shy adolescents, and especially the importance that a positive friendship relationship has for these youths.

There are a number of limitations. First, all the data are self-reported by participants. While some authors have highlighted that the individual's perception represents a source of primary importance to understand the quality of relationship itself<sup>36</sup>, it would be useful integrate the subjective point of view with another source of external information. In fact, it might be that adolescents distort the characteristics of the friendships that they have. Therefore, assessing the friendship quality from the perspective of both members in the dyad might provide more accurate information about the nature of friendship itself. Second, the cross-sectional data do not allow a thorough understanding of changes in friendship aspects investigated during this time period, and this would require longitudinal research.

Finally, to further deepen the knowledge on this important topic the use of several methods of investigation in addition to self-reported questionnaires would be needed, such as the use of observational or qualitative measurements.

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