Journal of Youth and Adolescence (2023) 52:1206–1218
https://doi.org/10.1007/s10964-023-01763-0

EMPIRICAL RESEARCH

The Power Dynamics of Friendship: Between- and Within- Person Associations among Friend Dominance, Self-Esteem, and Adolescent Internalizing Symptoms

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Received: 11 January 2023 / Accepted: 3 March 2023 / Published online: 15 March 2023

Abstract

Although forming close, egalitarian peer relationships is a central developmental task of adolescence, little is known about the psychological consequences of power imbalances in adolescents' friendships. The current study investigated whether there are psychological costs of feeling subordinate to friends by examining longitudinal associations between adolescents' perceived friend dominance and internalizing symptoms. Across one year, five waves of survey data were collected from 388 adolescents ($M_{age} = 14.05$, $SD_{age} = 0.41$; 61% female; 46% White, 19% Black, 17% Asian, 6% Arab, Middle Eastern, North African, 6% Biracial/Multiethnic, 3% Latinx/Hispanic, 1% American Indian/Native American, 1% identifying with another race/ethnicity, <1% not reporting). Multilevel modeling disentangled between- and within-person effects of perceived friend dominance on depressive and anxiety (internalizing) symptoms and tested self-esteem as a mediator. The results indicated that both individual differences and intraindividual fluctuations in perceived friend dominance were associated with internalizing symptoms. At the between-person level, adolescents who perceived their friends as more dominant reported more severe depressive and anxiety symptoms than adolescents who perceived their friends as less dominant. At the within-person level, increases in perceived friend dominance were accompanied by increases in depressive and anxiety symptoms, and these associations were partially explained by changes in self-esteem. The findings advance understanding of power dynamics in adolescents' close friendships and highlight the psychological toll of feeling dominated by friends.

Keywords Friendship · Dominance · Anxiety · Depression · Self-esteem · Adolescence

Introduction

During adolescence, peer status hierarchies are ubiquitous and exert powerful influences on adolescents' psychological adjustment. As adolescents become increasingly concerned with fitting in and being accepted by peers, those who occupy dominant positions within the peer hierarchy experience less loneliness (Putarek & Keresteš, 2016) and higher self-esteem (Sun et al., 2023), whereas their lower-ranking peers are more vulnerable to emotional distress, particularly depressive and anxiety symptoms (Zimmer-Gembeck, 2016). Considerably less is known about the nature and impact of dominance hierarchies within close friendships, which function as critical relational contexts for adolescents' psychological development (Bagwell & Bukowski, 2018). Although equity has traditionally been touted as a defining feature of adolescent friendships (Hartup 1998), more contemporary accounts of peer relationships highlight the potential for disequilibrium (Faur et al., 2023) and power differentials (Rubin et al., 2008) within friendships. Given the psychological costs of low peer status during adolescence, youth who perceive their friends to be highly dominant (e.g., holding decision-making power; always getting things their way) may experience depleted self-worth and, consequently, elevated risk for internalizing distress. The current study tests this novel hypothesis by examining the effects of friend dominance on adolescents' depressive and anxiety symptoms across one year and investigating self-esteem as a putative underlying mechanism.

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Theory and Research on Interpersonal Dominance

Power and dominance are pivotal dimensions of interpersonal relationships (Simpson et al., 2019). Here, the terms "power" and "dominance" are used interchangeably, referring to the ability of one relationship partner to influence another relationship partner in the interest of obtaining a desired outcome (Simpson et al., 2015). Whereas equity in close relationships has been theorized to promote positive individual and dyadic outcomes, experiencing or perceiving interpersonal powerlessness is proposed to undermine psychological well-being (Hatfield & Rapson, 2012). To date, much of the empirical work examining relational power dynamics has focused on intimate relationships or the family context. Studies among adults, for example, demonstrate that individuals who perceive themselves as having less power than their romantic partner experience lower self-esteem and more negative emotions (e.g., anxiety, sadness) in the face of social rejection (Kuehn et al., 2015). Similar patterns have emerged in the context of sibling relationships, such that adolescents who perceive themselves as wielding less power than their siblings experience more severe internalizing symptoms (Buist et al., 2017). Together these theories and empirical findings suggest that when people feel dominated by close relationship partners, they are more prone to having negative self-views and feeling depressed and anxious. However, whether power imbalances may have similar psychological ramifications in the context of close friendships remains relatively unexplored.

During adolescence, as youth place increasing value on their peer relationships, it is particularly important to consider how power and dominance operate within the peer context. Most of the research on peer power dynamics has been situated at the group level, rather than in the context of dyadic peer relationships (e.g., friendships), and focused on perceived popularity, a status indicator that captures an adolescent's dominance within the peer hierarchy at large. Popularity is not only highly valued in adolescence (LaFontana & Cillessen, 2010), but it has also been linked with positive developmental outcomes. Indeed, past research demonstrates that adolescents who are perceived as more popular with their peers experience higher self-esteem (Litwack et al., 2012) and fewer internalizing symptoms (Ellis et al., 2022), whereas those with lower status exhibit poorer well-being outcomes (Zhou & McLellan, 2021). Thus, adolescents who lack power in the peer group appear to incur greater psychological costs, relative to those who are more socially dominant.

Friendships and Social Dominance in Adolescence

Despite theoretical models and empirical evidence implicating varying power dynamics as an important dimension of close relationships (Simpson et al., 2015), including adolescent peer relationships (Rubin et al., 2008), there has been curiously little research considering the power dynamics of adolescents' close friendships. This lack of research around power and dominance within friendships may, in part, reflect the traditional theoretical premise that equity is a defining feature of youth's friendships. That is, unlike relationships with parents or teachers, which are typically involuntary and hierarchical, adolescents' friendships are thought to be unique in their voluntary, reciprocal, and egalitarian structure (Hartup, 1998). Based on this conceptualization, a rich literature documents friendships as protective forces in adolescents' lives (see Erdley & Day, 2017 for a review). These studies have largely focused on positive dimensions of adolescent friendships, demonstrating that adolescents who perceive their friendships as supportive, validating, and secure enjoy a host of positive developmental outcomes, with some of the most robust evidence linking high friendship quality to lower levels of internalizing symptoms (Bagwell & Bukowski, 2018).

Although there has been a prevailing focus on positive friendship features and their protective effects on adolescents' psychological adjustment, friendships are not protective by default. Friendships can greatly vary in their quality, and some are characterized by negative features that undermine, rather than promote, adolescents' psychological well-being (Bagwell & Bukowski, 2018). Compared to positive dimensions, negative friendship dimensions have been the focus of far less empirical inquiry, yet recent meta-analytic evidence suggests that negative friendship qualities are stronger predictors of adolescent depressive symptoms than positive friendship qualities (Schwartz-Mette et al., 2020), and friendship scholars have called for increased attention to the negative dimensions of friendships, including consideration of power distributions and hierarchies (Rubin et al., 2008). As previously noted, past research on other types of close relationships (e.g., romantic; sibling) highlights that feeling dominated by close others is related to heightened emotional distress, and contemporary theories of adolescent friendship acknowledge the potential for power differentials to exist (Bagwell & Bukowski, 2018). There is also some empirical evidence for such power differentials in adolescent friendships. In a study of perceived friendship control, which is one component of dominance, nearly one third of adolescents felt like they had less control in the friendship compared to their best friend (Updegraff et al. 2004). However, no studies have investigated the dynamic links between perceived friend dominance and internalizing symptoms during adolescence, a time when close friendships become highly influential relationships and when adolescents are increasingly vulnerable to developing depression and anxiety (Pfeifer & Allen, 2021). Dominant friends often hold

decision-making power (e.g., dictating which classmates their friend should follow on Instagram) and harness behavioral control (e.g., making their friend go to a party despite the friend's expressed disinterest), both of which are autonomy-limiting actions that could rouse feelings of worthlessness and concern in the recipient. Therefore, extending past theoretical and empirical work on the impact of power differentials in other relationship contexts, the current study investigated whether adolescents who feel dominated by their friends are at heightened risk for internalizing difficulties.

It is important to also acknowledge that the qualities of friendships and identities of friends can change over time (Meter & Card, 2016; Poulin & Chan, 2010). Especially following school transitions, adolescents engage in friendship exploration in concert with their own identity development (Ganeson & Ehrich, 2009). Recognizing the dynamic nature of adolescents' friendships, it is perhaps then unsurprising that adolescents exhibit considerable friendship instability (i.e., losing and gaining friends) across a given school year (Chan & Poulin, 2009). Additionally, even within stable friendships, the qualities and features of such relationships often fluctuate over time (Way & Greene, 2006). For example, past research indicates that adolescents' perceptions of friend closeness and support significantly vary on a day-to-day basis (Pouwels et al., 2021), suggesting that a focus on individual differences in friendship quality may conceal intraindividual fluctuations in friendship perceptions. Similarly, adolescents' perceptions of power dynamics within their close friendships are likely to fluctuate over time, rather than remain static, as youth shift friendship networks or negotiate control and influence within steady friendships. Indirect support for this hypothesis comes from recent research documenting considerable intraindividual variability in youth's social dominance goals (i.e., desire for power over peers) over time (Pan et al., 2023). However, no studies have considered how within-person (i.e., time-varying) changes in perceived friend dominance may be linked with corresponding changes in adolescents' internalizing symptoms.

Self-Esteem as a Potential Mediator

In addition to understanding connections between perceived friend dominance and internalizing symptoms, a consideration of underlying mechanisms can shed light on why perceiving oneself to lack power in close friendships could contribute to experiences of depression and anxiety. A central function of friendships during adolescence is to help bolster a positive sense of self and facilitate the development of autonomy and self-definition (Zimmer-Gembeck & Collins, 2008). Indeed, past research demonstrates that adolescents with close friendships characterized by high levels of autonomy support (i.e., where friends are respectful of and responsive to each other's perspectives and choices) experience greater needs satisfaction (Deci et al., 2006). In contrast, adolescents with friendships defined by negative dimensions, such as conflict and rivalry, have lower self-esteem (Erdley & Day, 2017).

Not only do negative friendship experiences appear to undermine self-esteem, but separate literature demonstrates that lower self-esteem, in turn, can function as a major risk factor for mental health problems during adolescence (In-Albon et al., 2017). Growing evidence implicates low self-esteem as a distinct vulnerability factor for the development of depression and anxiety (Sowislo & Orth, 2013). However, it remains unknown whether self-esteem functions as a mechanism linking friend dominance to internalizing symptoms at either the inter- or intra-individual level and following the developmentally significant transition to high school. In turn, the final aim of the current study was to test self-esteem as a potential between- and within-person mechanism linking friend dominance to adolescent internalizing symptoms across one year.

Current Study

Although extensive research indicates that high-quality, supportive friendships promote adolescents' psychological well-being, there is a paucity of studies considering how negative experiences in close friendships may undermine adolescents' psychological adjustment. Additionally, whereas accumulating evidence highlights the costs of lacking power within close relationships or the broader peer group, little is known about the ramifications of power imbalances within friendships. Therefore, the current longitudinal study investigated an understudied yet developmentally relevant friendship dimension—friend dominance—to determine whether feeling subordinate within friendships contributes to adolescent internalizing difficulties (i.e., depressive and anxiety symptoms) and whether such associations are explained by reduced self-esteem. Specifically, the first aim of the current study was to investigate between-person associations between perceived friend dominance and internalizing symptoms (Aim 1). It was hypothesized that adolescents who perceived their friends as more dominant across the year would experience greater severe depressive and anxiety symptoms compared to adolescents who perceived their friends as less dominant across the year (positive between-person effect; Hypothesis 1). The second aim of the current study was to investigate within-person associations between perceived friend dominance and internalizing symptoms (Aim 2). It was hypothesized that adolescents experiencing relative increases in perceived friend dominance at any given time point,

compared to their average level of perceived friend dominance, would exhibit corresponding increases in depressive and anxiety symptoms (positive within-person effect; Hypothesis 2). Finally, the third aim of the study was to examine whether individual differences or intraindividual changes in self-esteem accounted for (i.e., mediated) associations between friend dominance and internalizing symptoms (Aim 3). It was hypothesized that associations between perceived friend dominance and internalizing symptoms would be partially mediated by self-esteem (Hypothesis 3). That is, individual differences and within-person changes in friend dominance would be linked with lower self-esteem which, in turn, would predict greater depressive and anxiety symptoms.

Methods

Participants and Procedure

Data used in the current study come from the Promoting Relationships and Identity Development in Education (PRIDE) project, a five-wave longitudinal online survey study ($N = 388$) assessing the effectiveness of a brief identity-based self-affirmation intervention and investigating adolescent adjustment following the ninth-grade transition to high school. The intervention was administered during the first three waves of data collection. Although there were no mean-level differences in internalizing symptoms or self-esteem as a function of the intervention, the intervention has been found to protect against declines in self-esteem across the study (Hoffman & Schacter, in revision). An a priori sample size of 300 was established to allow 90% power for detecting medium-sized intervention effects (Fan 2003; Xitao & Xiaotao, 2005), with an aim to achieve a final $N = 400$ to allow for some attrition across the study. Given that the study was carried out during the COVID-19 pandemic in the United States, study procedures took place exclusively online. Participants, all of whom were enrolled in ninth grade at the beginning of the study, were recruited via communication with local school administrators, counselors, and teachers. School personnel shared information about the study with students (e.g., via e-flyer or posts on learning management systems), and interested students enrolled online. All ninth-grade students at the schools that were contacted were eligible to participate. A waiver of parental consent was obtained given the sensitive nature of certain survey topics (i.e., sexual identity and orientation) and to avoid systematic exclusion of sexual minority youth from participation. All participants provided written assent before completing the online surveys. Participants completed a baseline (T1) online survey in November 2020 and were invited to participate in follow-up online surveys approximately every three months: February 2021 (T2), May 2021 (T3), September 2021 (T4), and December 2021 (T5). After completing each survey, participants received a $10 e-gift card as compensation. Participants who completed all five surveys were also entered into a $100 e-gift card raffle at the end of the study. The study was approved by the Wayne State University Institutional Review Board.

The study included 388 adolescents (61% female; 36% male; 3% non-binary, trans, or identifying with another gender; $M_{age} = 14.05$; $SD_{age} = 0.41$) recruited from 38 high schools in the state of Michigan, most of which were in the city of Detroit or Metro Detroit area. The sample was ethnically/racially and socioeconomically diverse, with 46% White, 19% Black, 17% Asian, 6% AMENA (Arab, Middle Eastern, North African), 6% Biracial/Multiethnic, 3% Latinx/Hispanic, 1% American Indian/Native American (AI/NA) and 1% identifying with another race/ethnicity (<1% did not report).

Measures

Friend dominance

At each of the five time points, perceived friend dominance was assessed using the three-item dominance subscale from the Network of Relationships Inventory: Relationships Qualities Version (NRI-RQV; Buhrmester & Furman, 2008; Furman & Buhrmester, 1985). Participants were first asked to nominate up to three of their close friends from in or outside of school. For each friend listed, they completed the three items capturing friend dominance. Sample items included "How often does [Friend Name] end up being the one who makes the decisions for both of you?" and "How often does [Friend Name] get you to do things their way?" Participants responded to each item on a five-point scale (1 = *"Never or hardly at all,"* 5 = *"Always or extremely much"*). At each study time point, subscale items were averaged across nominated friends to calculate a friend dominance score, where higher scores indicate that adolescents perceive their friends as more dominant. Given variable participation rates across schools and that participants could nominate friends outside of school, this study relied exclusively on participants' friendship perceptions (i.e., as opposed to focusing on reciprocated friendships, which could not be identified). The measure exhibited good reliability, with alphas ranging from 0.80 to 0.87 across the five study time points.

Depressive symptoms

At each of the five time points, depressive symptoms were assessed using the Center for Epidemiologic Studies

Depression Scale-Revised (CESD-R-10; Bradley et al., 2010; Radloff, 1977). Participants responded to 10 items based on how they felt over the past week using a 4-point scale (0 = "*Rarely or none of the time*," 3 = "*Most of the time*"). Sample items include "I felt everything I did was an effort" and "I was bothered by things that don't usually bother me." The scale has shown strong reliability and validity among adolescent samples (Bradley et al., 2010). Two positively worded items were reverse coded, and items were summed to create an overall depressive symptoms indicator ranging from 0 to 30, where higher scores indicate more severe depressive symptoms. The measure exhibited good reliability, with alphas ranging from 0.84 to 0.86 across the five study time points.

Anxiety symptoms

At each of the five time points, anxiety symptoms were assessed using the Generalized Anxiety Disorder Scale (GAD-7; Spitzer et al. 2006). Participants responded to seven items based on how they felt over the past two weeks using a 4-point scale (0 = "*Not at all*," 3 = "*Nearly every day*"). Sample items included "Feeling nervous, anxious, or on edge" and "Worrying too much about different things." The scale has been widely validated among adolescents, such that GAD-7 scores are strongly associated with clinical-related youth anxiety symptoms and moderately correlated with depressive symptoms (Mossman et al., 2017; Tiirikainen et al., 2019). Items were summed to create an overall anxiety symptoms indicator that could range from 0 to 21, where higher scores indicate more severe anxiety symptoms. The measure exhibited excellent reliability, with alphas ranging from 0.90 to 0.92 across the five study time points.

Self-esteem

At each of the five time points, self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1979). Participants responded to ten items based on how they felt over the past 30 days using a 5-point scale (1 = *"Strongly disagree,"* 5 = *"Strongly agree"*). Sample items included "I feel that I am a person of worth, or at least equal to others" and "I wish I could have more respect for myself." Five negatively worded items were reverse coded, and items were averaged to create an overall self-esteem indicator where higher scores indicate greater self-esteem. The validity and reliability of the scale has been supported in prior research among adolescent samples (Hagborg, 1993; Rosenberg and Rosenberg, 1978), and the measure exhibited excellent reliability in the current study, with alphas ranging from 0.91 to 0.92 across the five study time points.

Table 1 Frequencies for control variables at Time 1

	%
Schooling Format	
Online	85.8
Hybrid	5.2
In-Person	4.4
Gender	
Female	60.6
Male	35.8
Non-binary/Trans/Other	3.7
Sexual Orientation	
Straight	74.2
LGBQ+	25.0
Not Reporting	0.8
Ethnicity	
White	46.4
Black	19.1
Asian	16.8
AMENA	5.9
Biracial/Multiracial	5.9
Latinx/Hispanic	3.4
Other	1.3
AI/NA	0.8
Not Reporting	0.4
Intervention Condition	
Values Affirmation	34.3
Identity Affirmation	33.0
Control Group	32.7

LGBQ+ lesbian, gay, bisexual, queer+, *AMENA* Arab, Middle Eastern, North African, *AI/NA* American Indian/Native American

Controls

Because data were collected during the COVID-19 pandemic and participants' schooling formats changed throughout the five study time points, all analyses controlled for participants' self-reported school format (online, hybrid, or in-person) at each timepoint as a within-person control. All other control variables were collected through the T1 survey and were included in analyses as between-person controls: gender, sexual orientation, ethnicity/race, and intervention condition. Table 1 presents frequencies for all control variables across the sample.

Statistical Analyses

Data were analyzed using Mplus Version 8 (Muthén & Muthén, 1998–2017). To test the study's hypotheses, a series of three-level multilevel models (MLMs) were estimated. The data were structured such that repeated measures at Level 1 were nested within individuals at Level 2

who were nested within schools at Level 3, allowing us to examine both intra- and inter-individual variability in friendships and internalizing symptoms while also accounting for school-level variability. That is, each individual acts as their own control to eliminate confounding of within- and between-person effects (Curran & Bauer, 2011). First, unconditional models were estimated to determine intraclass correlations of the two outcome variables, depressive and anxiety symptoms, which reflect the proportion of total variance in depressive and anxiety symptoms that is attributable to between-person differences ($ICC_{individuals}$) and between-school differences ($ICC_{schools}$). To test Hypotheses 1 and 2, two separate three-level multilevel path models were run to estimate between-person and within-person effects of friend dominance on adolescents' internalizing symptoms while accounting for school-level differences in internalizing. To test Hypothesis 3, two separate three-level multilevel mediation models were estimated to assess whether there were indirect between- and within-person effects of friend dominance on internalizing symptoms via self-esteem while accounting for school-level differences in internalizing. A set of supplementary mediation analyses wherein internalizing symptoms were modeled as the predictors and friend dominance was modeled as the outcome were also estimated. These models were not of primary interest, given that the current study hypothesized perceptions of friend dominance to precede internalizing symptoms based on the theory and research reviewed in the introduction.

Across both sets of models, time (centered at zero, or T1) and adolescents' current school format (with online school as the reference group) were included as within-person controls at Level 1, and adolescents' gender (with female identification as the reference group), sexual orientation (with straight identification as the reference group), race/ethnicity (with White identification as the reference group), and intervention condition (with control group as the reference group) were included as between-person controls at Level 2. Reference groups reflect the largest n within each categorical variable, except for the intervention variable, for which participants in the control condition functioned as the reference group. To disaggregate within- and between-person effects, continuous Level 1 predictors were person-mean centered, such that scores reflect deviations from an individual's average, and continuous Level 2 predictors were grand-mean centered, such that scores reflect deviations from the entire sample average. Although there were no Level 3 predictors of interest, all analyses included a third level of nesting to account for school-level differences in depressive and anxiety symptoms.

Multilevel models were fit using the Bayes estimator in Mplus (Muthén & Muthén, 1998–2017). Bayesian analysis is advantageous because it does not assume a normal distribution of the indirect effects (Yuan & MacKinnon, 2009). Results of Bayesian analyses in Mplus are reported with one-tailed significance, with a significance threshold of $p < 0.025$ rather than $p < 0.05$, and 95% credibility intervals (Asparouhov & Muthén, 2010).

Missing Data

Of the original $N = 388$ adolescents who participated in the baseline (T1) survey, 336 (87%) completed the T2 survey, 306 (79%) completed the T3 survey, 271 (70%) completed the T4 survey, and 270 (70%) completed the T5 survey. Attrition analyses using independent samples t-tests indicated that there were no significant mean differences in friend dominance, self-esteem, anxiety symptoms, or depressive symptoms at any time point between adolescents who participated at all five time points versus those who missed at least one study time point. As for demographic differences, results from logistic regression models indicated that adolescents identifying as male or Black were less likely to participate in all five study waves (compared to those identifying as female or White). The Bayesian analysis approach allowed for missing data handling, akin to Full Information Maximum Likelihood (FIML) estimation, using Monte Carlo Markov Chains (MCMC) based on the Gibbs sampler (Gelman et al., 2004). MCMC with the Gibbs sampler treats missing data as parameters to be estimated and uses an imputation procedure that leverages all available data. Similar to maximum-likelihood estimation, this approach provides reliable estimates under the assumption that data are missing at random (Asparouhov & Muthén, 2010). Although there is not a formal test for determining whether data are missing at random (MAR), the current analyses incorporated control variables that were related to missingness (i.e., gender, ethnicity) to serve as auxiliary variables. Thus, all participants contributing data during at least one time point (i.e., $N = 388$) were included in all analyses.

Results

Descriptive Statistics and Correlations

Table 2 presents descriptive statistics and bivariate between- and within-person correlations for continuous study variables. Analysis of intraclass correlations (ICCs) indicated that depressive and anxiety symptoms varied considerably both within and between individuals and minimally between schools. Specifically, for depressive symptoms the ICC_{school} was 0.04 and the $ICC_{individual}$ was 0.66. That is, 4% of the variability in depressive symptoms was attributable to school-level differences and 66% of the variability in depressive symptoms was attributable to individual differences between adolescents, whereas 30% of the variability in depressive

Table 2 Bivariate correlations and descriptive statistics for T1-T5 friend dominance, self-esteem, and internalizing symptoms

	1	2	3	4
Between-Person (Level 2; $n = 388$)				
1. Friend Dominance	–			
2. Self-Esteem	−0.07	–		
3. Depressive Symptoms	0.15**	−0.80***	–	
4. Anxiety Symptoms	0.15**	−0.68***	0.85***	–
Mean	2.77	3.28	11.60	8.11
Standard Deviation	0.51	0.79	5.95	5.24
Within-Person (Level 1; $n = 1940$)				
1. Friend Dominance	–			
2. Self-Esteem	−0.12**	–		
3. Depressive Symptoms	0.07	−0.51***	–	
4. Anxiety Symptoms	0.10**	−0.34***	0.53***	–
Mean	0.00	0.00	0.00	0.00
Standard Deviation	0.35	0.36	3.21	2.83

Friend dominance, self-esteem, depressive symptoms, and anxiety symptoms statistics at the between-level are based on aggregated (i.e., mean) scores for each individual across the five time points. Friend dominance, self-esteem, depressive symptoms, and anxiety symptoms statistics at the within-level are based on person-centered scores across the five time points, and therefore all mean values = 0. Correlations calculated using maximum likelihood estimation to handle missing data in M*plus*

**$p < 0.01$, ***$p < 0.001$

symptoms was attributable to within-person changes over time. Similarly, for anxiety symptoms, the ICC_{school} was 0.06 and the $ICC_{individual}$ was 0.64. That is, 6% of the variability in anxiety symptoms was attributable to school-level differences and 64% of the variability in anxiety symptoms was attributable to individual differences between adolescents, whereas 30% of the variability in anxiety symptoms was attributable to within-person changes over time.

Between- and Within-Person Effects of Friend Dominance on Psychological Distress

Two three-level multilevel models assessed the between- and within-person effects of perceived friend dominance on depressive and anxiety symptoms across one year. As seen in Table 3, friend dominance was a significant between-person (i.e., time-invariant) and within-person (i.e., time-varying) predictor of both depressive and anxiety symptoms. At the between-person level, compared to adolescents who perceived their friends as less dominant, adolescents who perceived their friends as more dominant across the year exhibited greater average depressive symptoms ($b = 1.19$, $p = 0.003$, 95% CI = 0.33, 1.88) and anxiety symptoms ($b = 1.56$, $p < 0.001$, 95% CI = 0.58, 2.24). At the within-person level, when adolescents perceived a relative increase in their friends' domineering behaviors, they experienced

Table 3 Within- and between-person main effects of friend dominance on internalizing symptoms from three-level multilevel models

	Depressive Symptoms	Anxiety Symptoms
Within-Person Predictors (Level 1)		
Time	0.11 (−0.12, 0.34)	**−0.33 (−0.53, −0.14)**
WP Schooling Format (*reference group = Online)*		
In-Person	−0.11 (−0.75, 0.59)	−0.17 (−0.76, 0.38)
Hybrid	−0.39 (−1.17, 0.47)	0.13 (−0.56, 0.77)
WP Friend Dominance	**0.61 (0.00, 1.21)**	**0.97 (0.44, 1.53)**
Between-Person Predictors (Level 2)		
Gender (*reference group = Female)*		
Male	**−2.97 (−4.06, −1.76)**	**−2.86 (−3.91, −1.89)**
Non-Binary/ Trans/Other	**4.58 (1.64, 7.55)**	1.16 (−1.23, 3.54)
Sexual Orientation (*reference group = Straight)*		
LGBQ +	**4.28 (2.95, 5.45)**	**3.58 (2.33, 4.76)**
Ethnicity (*reference group = White)*		
AMENA	0.72 (−1.68, 2.83)	0.93 (−1.11, 2.78)
AI/NA	2.16 (−2.91, 7.77)	2.02 (−3.24, 7.45)
Asian	0.51 (−1.07, 2.01)	−0.67 (−2.02, 0.59)
Black	0.98 (−0.54, 2.44)	0.19 (−1.16, 1.56)
Latinx/Hispanic	0.91 (−1.95, 4.15)	0.12 (−2.71, 2.63)
Biracial/ Multiracial	1.20 (−1.00, 3.38)	0.93 (−1.11, 2.98)
Other	2.96 (−1.75, 8.28)	2.40 (−1.79, 6.66)
Intervention Condition (*reference group = Control)*		
Identity Affirmation	−0.23 (−1.44, 1.16)	−0.32 (−1.58, 0.78)
Values Affirmation	−0.52 (−1.93, 0.63)	−0.41 (−1.51, 0.77)
BP Friend Dominance	**1.19 (0.33, 1.88)**	**1.56 (0.58, 2.24)**

LGBQ+ lesbian gay bisexual queer+, *AMENA* Arab Middle Eastern North African, *AI/NA* American Indian/Native American, *WP* within-person, *BP* between-person. Analyses also account for school-level variation in depressive and anxiety symptoms

Unstandardized estimates with Bayesian 95% credible intervals listed in parentheses. Significant effects, as indicated by a credible interval that does not include zero and $p < 0.025$, denoted in bold

corresponding increases in depressive symptoms ($b = 0.61$, $p = 0.023$, 95% CI = 0.00, 1.21) and anxiety symptoms ($b = 0.97$, $p < 0.001$, 95% CI = 0.44, 1.53). Thus, both individual differences and temporal increases in friend dominance were related to more severe internalizing symptoms over and above the effects of demographic and contextual controls.

Multilevel Mediation via Self-Esteem

Multilevel mediation analyses assessed self-esteem as a mechanism partially accounting for between- and within-person associations between friend dominance and depressive

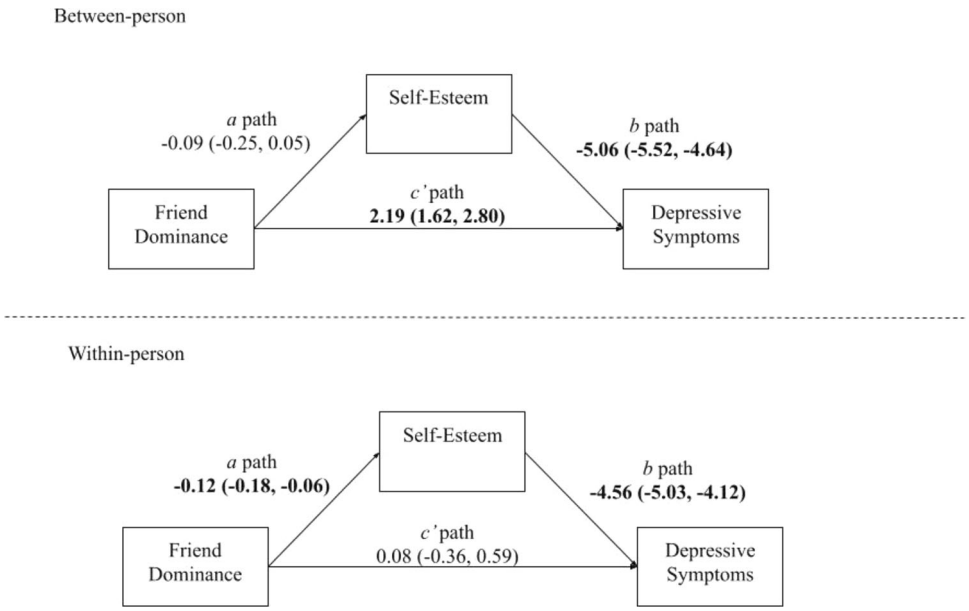

Fig. 1 Results of three-level multilevel mediation analyses testing the between- and within-person indirect effects of friend dominance on depressive symptoms via self-esteem. *Note*. All within-person paths control for time and adolescent schooling format. All between-person paths control for adolescent gender, sexual orientation, race/ethnicity, and intervention condition. Analyses also account for school-level variation in depressive symptoms. Unstandardized estimates with Bayesian 95% credible intervals listed in parentheses. Significant effects, as indicated by a credible interval that does not include zero and $p < 0.025$, denoted in bold

and anxiety symptoms. Figures 1 and 2 display results from the mediation models. At the between-person level, there were significant total effects (*c* paths) of friend dominance on depressive symptoms ($b = 2.68$, $p < 0.001$, 95% CI = 1.78, 3.76) and anxiety symptoms ($b = 1.60$, $p < 0.001$, 95% CI = 0.73, 2.46) prior to the inclusion of self-esteem as a mediator. After accounting for self-esteem as a between-person mediator, there were significant direct effects (*c'* paths) of friend dominance on depressive symptoms ($b = 2.19$, $p < 0.001$, 95% CI = 1.62, 2.80) and anxiety symptoms ($b = 1.21$, $p < 0.001$, 95% CI = 0.53, 1.84). As seen in the figures, there were nonsignificant associations between friend dominance and self-esteem (*a* paths), and significant negative associations between self-esteem and depressive and anxiety symptoms (*b* paths). In turn, there were nonsignificant indirect effects from friend dominance to depressive symptoms (indirect effect = 0.47, $p = 0.090$, 95% CI = −0.24, 1.30) and anxiety symptoms (indirect effect = 0.40, $p = 0.073$, 95% CI = −0.17, 1.00) via self-esteem. That is, although adolescents who reported higher average levels of friend dominance across the year experienced greater psychological distress than those reporting lower average levels of friend dominance, such associations were not explained by individual differences in self-esteem.

At the within-person level, there were significant total effects (*c* paths) of friend dominance on depressive symptoms ($b = 0.63$, $p = 0.010$, 95% CI = 0.09, 1.20) and anxiety symptoms ($b = 0.96$, $p < 0.001$, 95% CI = 0.47, 1.44) prior to the inclusion of self-esteem as a mediator. After accounting for self-esteem as a within-person mediator, there was a nonsignificant direct effect (*c'* path) of friend dominance on depressive symptoms ($b = 0.08$, $p = 0.377$, 95% CI = −0.36, 0.59) and a significant direct effect (*c'* path) of friend dominance on anxiety symptoms ($b = 0.64$, $p = 0.007$, 95% CI = 0.16, 1.09). As seen the figures, there were significant negative associations between friend dominance and self-esteem (*a* paths) and between self-esteem and depressive and anxiety symptoms (*b* paths). In turn, there were significant indirect effects from friend dominance to depressive symptoms (indirect effect = 0.54, $p < 0.001$, 95% CI = 0.25, 0.82) and anxiety symptoms (indirect effect = 0.32, $p < 0.001$, 95% CI = 0.16, 0.49) via self-esteem. Thus, within-person associations between friend dominance and depressive symptoms were fully mediated by within-person changes in self-esteem, and within-person associations between friend dominance and anxiety symptoms were partially mediated by within-person changes in self-esteem. That is, when adolescents perceived increases in their friends' dominating behavior, they experienced corresponding decreases in self-esteem which, in turn, were associated with relative increases in depressive symptoms and anxiety symptoms.

Supplementary Analyses

Results from alternative models where internalizing symptoms were examined as predictors and friend dominance

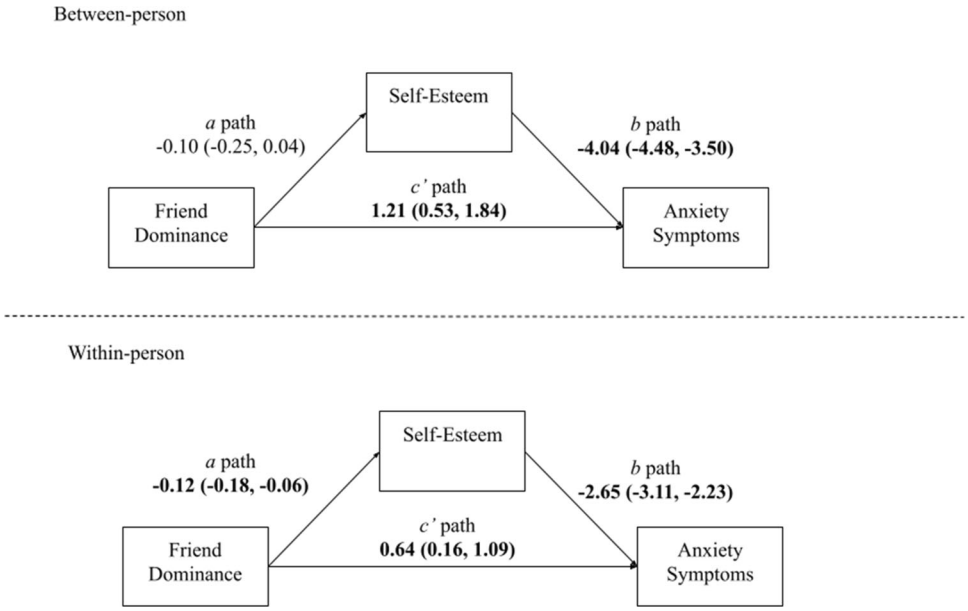

Fig. 2 Results of three-level multilevel mediation analyses testing the between- and within-person indirect effects of friend dominance on anxiety symptoms via self-esteem. *Note*. All within-person paths control for time and adolescent schooling format. All between-person paths control for adolescent gender, sexual orientation, race/ethnicity, and intervention condition. Analyses also account for school-level variation in anxiety symptoms. Unstandardized estimates with Bayesian 95% credible intervals listed in parentheses. Significant effects, as indicated by a credible interval that does not include zero and $p < 0.025$, denoted in bold

was treated as the outcome were similar to the models presented above. At the between-person level, there were nonsignificant indirect effects from depressive symptoms to friend dominance (indirect effect = −0.01, $p = 0.043$, 95% CI: −0.02, 0.00) and from anxiety symptoms to friend dominance (indirect effect = 0.00, $p = 0.477$, 95% CI: −0.00, 0.00), via self-esteem. At the within-person level, there were significant indirect effects from depressive symptoms to friend dominance (indirect effect = 0.01, $p = 0.001$, 95% CI: 0.00, 0.01) and from anxiety symptoms to friend dominance (indirect effect = 0.00, $p = 0.001$, 95% CI: 0.00, 0.01), via self-esteem. That is, within-person increases in internalizing symptoms were associated with decreases in self-esteem and, correspondingly, stronger perceptions of friend dominance.

Discussion

Although power and dominance are pervasive dimensions of all social relationships, there has been relatively little research on power dynamics in close friendships, which are critical contexts for adolescents' social-emotional development. To address this gap, this study considered if and how friendships with dominating friends contribute to adolescents' psychological adjustment. More specifically, five waves of longitudinal data were examined to determine whether individual differences and temporal fluctuations in perceived friend dominance were associated with adolescent internalizing symptoms and to evaluate self-esteem as a mediator of such links. Results of the study provided novel evidence that, both within and across adolescents, perceiving one's friends to engage in dominating behaviors (e.g., "calling the shots") was linked with elevated depressive and anxiety symptoms, and such associations were partially explained by decreases in self-esteem.

The findings of the current study were generally consistent with hypotheses, highlighting the psychological costs of adolescents perceiving their friends as dominant. By taking a multilevel approach, the current study disentangled how individual differences as well as temporal changes in friend dominance were related to adolescents' internalizing symptoms. Consistent with Hypothesis 1, at the between-person level, the results indicated that adolescents who consistently perceived their friends to be higher in dominance across one year, compared to adolescents who perceived their friends to be less dominant, experienced more depressive and anxiety symptoms across that year. Consistent with Hypothesis 2, at the within-person level, the results indicated that when adolescents experienced relative increases in their friends' dominating behaviors, they also experienced corresponding increases in internalizing symptoms. That is, even among adolescents who, on average, perceived low levels of friend dominance, higher-than-usual friend dominance was linked with higher-than-usual depressive and anxiety symptoms. Though traditional theories of adolescent friendships highlight the egalitarian nature of such peer relationships (Hartup 1998), the current findings suggest that adolescents' close friendships are not immune from power imbalances, which have been theoretically and empirically explored in other close adult relationships (e.g., romantic relationships; Kuehn et al., 2015) and adolescent peer contexts (e.g., popularity hierarchies; Putarek and Keresteš 2016). Moreover, the results provide some of the first evidence that inequitable friendships can be emotionally costly for adolescents who perceive themselves in a subordinate position.

This study also offered novel insights into one underlying mechanism linking changes in perceived friend dominance to fluctuations in internalizing symptoms: self-esteem. Specifically, in partial support of Hypothesis 3, self-esteem emerged as a significant within-person, but not between-person, mediator of links between friend dominance and internalizing symptoms. At the within-person level, adolescents who experienced relative increases in perceived friend dominance exhibited corresponding reductions in self-esteem which, in turn, were linked with increases in internalizing symptoms. These findings indicate that when adolescents felt like their friends were wielding greater control and power than usual (i.e., during time points when they reported higher levels of friend dominance compared to their average level across the year), they reported more negative evaluations of their own self-worth. Having lower self-esteem than usual (i.e., during time points when adolescents reported lower self-esteem compared to their average level across the year) then predicted having elevated depressive and anxiety symptoms. These findings build upon past research conducted from an individual differences perspective showing that positive friendship features can protect against adolescent internalizing symptoms via enhancements to self-esteem (Bosacki et al., 2007), whereas negative peer experiences (e.g., victimization) can amplify psychological distress via interfering with self-esteem (Ybrandt & Armelius, 2010).

However, inconsistent with the study's hypotheses, self-esteem was a nonsignificant mediator at the between-person level. That is, adolescents who typically or consistently perceived their friends to be dominant, despite reporting greater depressive and anxiety symptoms, experienced no worse self-esteem than those adolescents who typically did not perceive their friends to be dominant. One possibility for this finding is that adolescents who regularly associate with domineering friends might become accustomed to the imbalanced power dynamic, do not "take it personally," and thus do not experience reductions in self-esteem. Another related possibility is that adolescents who maintain friendships with highly dominant peers are less motivated by social status goals and thus less affected by a position of relatively less social power. Indeed, past research suggests considerable variability in adolescents' social goal orientations, and agentic goals in particular (Ojanen & Findley-Van Nostrand, 2014). That is, whereas some adolescents report a strong desire to achieve social dominance, others exhibit fewer concerns about status or power. Thus, individual differences in social motives may shape the degree to which friend dominance interferes with adolescents' sense of self-worth.

Although the present study provides novel evidence for longitudinal links between friend dominance, self-esteem, and depressive and anxiety symptoms, the study also had some limitations. First, the study exclusively relied on self-report data, including participants' friendship nominations. Given that participation rates considerably varied across schools and participants were allowed to nominate in-school or out-of-school friends, it was not possible to reliably determine whether friendships were reciprocated or unilateral. Rather, the study relied on adolescents' subjective perceptions of their friendships. Relatedly, to minimize participant burden and maximize data quality, adolescents were limited to nominating three close friends. It is possible that a more comprehensive picture of adolescents' full friendship networks would be gained by allowing unlimited friendship nominations (Cillessen & Marks, 2017). Another limitation of the study concerns generalizability; data for this study were collected during the COVID-19 pandemic in the United States, as students oscillated between online, hybrid, and in-person school formats. Although school format was included as a control variable in all analyses, and there is not a clear theoretical reason to believe that the current findings are unique to the pandemic, it is nevertheless unknown whether the results are generalizable in other contexts. There was also a modest gender imbalance in the current sample, with 61% of participants identifying as female. Given the gendered nature of some of the constructs studied in this study (e.g., dominance) and well-established gender differences in adolescent internalizing symptoms (McLaughlin & King, 2015), an important future direction could be to test whether the effects of friendship dominance on internalizing symptoms vary as a function of adolescent gender identity, as well as to consider the power dynamics of same- versus cross-gender friendships. Additionally, although we examined depressive and anxiety symptoms as two separate outcomes among a community sample of youth, depression and anxiety are highly comorbid during adolescence (Cummings et al., 2014). Future studies that focus on friendship processes among clinical populations of adolescents could help elucidate whether there are transdiagnostic versus unique pathways from friend dominance to depression and anxiety. Finally, the current findings preclude conclusions about causality or directionality. Supplementary analyses suggested that within-person increases in depressive and anxiety symptoms were associated with relative decreases in self-esteem and, correspondingly, relative increases in perceived friend dominance. Thus, it is possible that adolescents are more likely to associate with domineering friends at times when they are experiencing relative increases in emotional distress, rather than or in addition to friend dominance contributing to worsened internalizing symptoms. These findings raise fascinating questions about temporality that could be directly tested using intensive longitudinal designs (e.g., daily diary), wherein bidirectional spillover from peer experiences to psychological well-being could be evaluated in real-time.

Conclusion

Power and dominance are central features of all close relationships, and yet little research has considered how they may operate in the context of close friendships during adolescence, a time when peer relationships take on unique significance and youth experience increased vulnerability for internalizing problems. The current findings provide some of the first evidence that adolescents who lack or lose power in their close friendships display heightened risk for depressive and anxiety symptoms, in part via harm to self-esteem. Conceptually, these results shed light on a potentially pernicious side of adolescent friendships, underscoring that friendships are not always a panacea for adolescents. They also implicate perceived friend dominance as a developmentally relevant and psychologically taxing friendship dimension that has been largely overlooked in past work. Practically, the findings suggest that educating adolescents on how to establish healthy, equitable friendships —or how to disengage from friendships that thwart their sense of self—could promote mental health following the transition to high school. Teachers, parents, and clinicians are well-positioned to help adolescents develop effective communication tools, such as voicing their own wants and needs to friends, that may help recalibrate the scales when friendship power imbalances arise.

Data Sharing and Declaration

The dataset generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Acknowledgements We thank the adolescents and schools that participated in this research. Thank you also to the research assistants who contributed to data collection, cleaning, and coding.

Authors' Contributions H.L.S. conceived of the study, coordinated study design and data collection, developed the hypotheses, performed the statistical analyses, and led the writing of the manuscript; A.J.H. conceived of the study, coordinated study design and data collection, and helped draft the manuscript; A.D.E. participated in the study design and data collection and helped draft the manuscript. All authors have read and approved the final version of the manuscript.

Funding This research was supported by a Small Grant for Early Career Scholars from the Society of Research on Child Development awarded to H.L.S. and A.J.H., and a Wayne State University Research Grant awarded to H.L.S.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval The study and all procedures were approved by the Wayne State University Institutional Review Board.

Informed Consent Informed assent was obtained from all youth participants included in the study. A waiver of parental consent was obtained from the IRB for this study.

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