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The engaged lives of encouraged students: Academic encouragement, grit and academic engagement in Chinese first year undergraduate students

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Abstract

Although research has shown that two types of academic encouragement (i.e., challenge-focused and potential-focused encouragement) generally increase academic engagement, few studies have explored how they relate to academic engagement among first-year undergraduate students. Moreover, little is known on psychological mechanisms linking encouragement to educational outcomes. This study explored the indirect effects of encouragement on academic engagement via grit's dimensions (i.e., perseverance of effort and consistency of interests) among 485 Chinese first-year undergraduate students. Results showed that overall academic encouragement, challenge-focused encouragement and potential-focused encouragement positively predicted perseverance of effort and academic engagement. However, the predictive effects of overall academic encouragement, challenge-focused encouragement and potential-focused encouragement on consistency of interests were faint. Results also indicated that overall academic encouragement, challenge-focused encouragement and potential-focused encouragement indirectly predicted academic engagement through perseverance of effort rather than consistency of interests. These findings underscore the importance of identifying pathways through which specific types of encouragement indirectly relate to academic engagement.

Keywords Academic encouragement · Academic engagement · Chinese · Grit

Colleges and universities often provide diverse challenges and opportunities to unlock one's potential, and encouragement is particularly helpful for students to realize their potential (Alcott, 2017; Lin & Flores, 2011). Adler (1956) first theorized on encouragement as a core aspect of human growth and development (Watts & Pietrzak, 2000) that plays an important role in cultivating inner resources, enhancing motivation, and modifying behaviours (Dinkmeyer & Losoncy, 1996; Sweeney, 2009). However, previous studies focused on the effects rather than understanding the nature and facets of encouragement in different contexts.

Wong (2015) defined encouragement as "the expression of affirmation through language or other symbolic representation to instill courage, perseverance, confidence, inspiration, or hope in a person within the context of addressing a challenging situation or realizing a potential" (p. 182). This conceptualization emphasizes four core aspects of encouragement that distinguish it from other theoretically related constructs (i.e., praise, instrumental support, and persuasion). First, encouragement occurs mainly in the form of language-based communication between at least two people. Second, this communication consists of an expression of affirmation that is full of positive meaning. Third, this communication aims to boost the recipients' motivation. Fourth, the communication helps others deal with difficult circumstances or realize their potential (Wong, 2015). The criterion of language-based communications makes encouragement different from instrumental social support, as instrumental social support does not have to involve language-based communications

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(Wong, 2015). In addition, the motivation enhancement distinguishes encouragement from praise which emphasizes positive feedback on a person, product, or performance (Wong et al., 2019). Finally, encouragement can be distinguished from persuasion in that it is broader in scope and includes negative and neutral forms of persuasion (Wong, 2015).

This conceptual model also distinguishes two types of encouragement: challenge-focused and potential-focused encouragement. Whereas challenge-focused encouragement directs toward recipients who are dealing with challenging circumstances, potential-focused encouragement is characterized by helping recipients realize their self-potential and nurture recipients' personal development (Wong, 2015). Based on this conceptual framework, Wong and colleagues developed the Academic Encouragement Scale (AES) to measure the forementioned two types of encouragement experienced by students in academics (Wong et al., 2019). The distinction between challenge-focused and potential-focused encouragement has been verified in samples of American undergraduate students, Chinese adolescents, and Chinese university students (Mu et al., 2021; Tang et al., 2021; Wong et al., 2019). Research has also shown that both challenge-focused and potential-focused encouragement were predictors of academic self-efficacy, hope, and academic engagement (Tang et al., 2021; Wong et al., 2019).

Individuals benefit not only from those that communicate affirmation to help them deal with challenges (challenge-focused encouragement), but also from affirmative messages that help them become their best selves (potential-focused encouragement; Wong, 2006). Consistent with this conjecture, Wong and collaborator argued that these two related expressions of encouragement might have diverse psychosocial pathways for enhancing positive outcomes (Wong et al., 2019). Challenge-focused encouragement has been found to be associated with higher academic self-efficacy via school connectedness, and potential-focused encouragement has been found to increase academic self-efficacy through hope (Wong et al., 2019). Studies have also shown that these types of encouragement have been distinctly related to academic outcomes (Mu et al., 2021; Tang et al., 2021). The experience of receiving potential-focused encouragement, but not challenge-focused encouragement, uniquely and positively predicted hope in college settings (Tang et al., 2021). The experience of receiving challenge-focused encouragement, but not potential-focused encouragement, uniquely and positively predicted gratitude and campus connectedness in college settings, as well as academic achievement in K-12 settings (Mu et al., 2021; Tang et al., 2021). However, researchers have shown that the correlations between the two latent factors were considerably high (ranged from 0.78 to 0.94; Mu et al., 2021; Tang et al., 2021; Wong et al., 2019), which may result in methodological issues (e.g., multicollinearity).

Moreover, there is limited research on how encouragement correlates with academic outcomes. This study builds on existing literature about the educational benefits of overall and dimensional encouragement through assessing how they relate to academic engagement. Academic engagement refers to the extent to which students demonstrate vigor (intense level of energy), dedication (subjective sense of involvement as characterized by interests, pride, and importance), and absorption (full immersion in specific tasks) when working on academic-related activities (Carmona-Halty et al., 2019; Schaufeli et al., 2002). Engagement is an important academic outcome given that it has been linked to higher achievement and well-being (Gutman & Schoon, 2018; Ketonen et al., 2016; Tayama et al., 2019). As previous studies have demonstrated that overall engagement is beneficial to gain comprehensive insights into students' performance in beliefs, emotions, and behaviours during daily activities (Wang et al., 2011; Datu & King, 2018), we focus on assessing students' overall engagement.

Further, this research examines the indirect associations of academic encouragement (i.e., overall encouragement, challenge-focused and potential-focused encouragement) via grit, which is conceptualized as disposition to espouse passion and perseverance for temporally remote ambitions in life (Duckworth & Quinn, 2009; Duckworth et al., 2007). Grit has two dimensions namely: a) perseverance of effort; and b) consistency of interests. Perseverance of efforts involves the capacity to effectively cope with obstacles and setbacks linked to pursuit of long-term goals while consistency of interests refers to the ability to stay concentrated in one set of aspiration over time. Although earlier studies have proposed that grit was a hierarchical construct underpinned by perseverance and consistency (Duckworth & Quinn, 2009; Duckworth et al., 2007), recent studies have shown that these dimensions are independent from each other (Crede et al., 2017; Disabato et al., 2019; Tyumeneva et al., 2019). Investigations have also demonstrated that only the perseverance of effort dimension significantly relates to academic achievement (Crede et al., 2017) and well-being (Disabato et al., 2019). In addition, there is inconclusive evidence on how grit's dimensions relate to students' academic engagement. Although some studies have shown that only perseverance matters for engagement (Datu et al., 2016; Tang et al., 2019; Teuber et al., 2020), research demonstrated that both dimensions of grit relate to higher engagement (Hodge et al., 2018). Indeed, more research is needed to explore how grit's dimensions relate to engagement outcomes.

Theoretical Perspective

This study explores the direct and indirect (via grit's dimensions) associations of academic encouragement (i.e., overall encouragement, challenge-focused and potential-focused

encouragement) with academic engagement through structural equation modeling (SEM). We adopt the job-demands-resources (JDR; Bakker & Demerouti, 2007; Bakker & Demerouti, 2017) model in rationalizing the associations among encouragement, grit, and engagement in this investigation.

The JD-R model, which is a popular model for explaining work engagement (Bakker & Demerouti, 2007; Bakker & Demerouti, 2017), has already been used in the academic context to understand the mechanisms underlying academic engagement (Robayo-Tamayo et al., 2020; Salmela-Aro & Upadyaya, 2014; Teuber et al., 2020). According to motivational process of JD-R model, academic resources are important predictors of academic engagement. Academic resource is any physical, psychological, social, or organizational resource that is conducive to achieving goals, reducing academic demands and their corresponding physiological and psychological costs, or motivating growth, learning, and development (Bakker & Demerouti, 2007). Academic encouragement communicates affirmation to motivate students, and cultivates students' inner resources (Sweeney, 2009; Wong, 2015; Wong et al., 2020). There is also evidence showing how both types of encouragement relate to higher academic engagement (Tang et al., 2021). Thus, we tested the following hypothesis:

H1: Overall academic encouragement, challenge-focused encouragement and potential-focused encouragement will positively predict academic engagement.

It is also likely that both forms of encouragement may relate to higher levels of perseverance of effort and consistency of interests. Studies have shown that social factors such as perceptions of connectedness to parents and teachers have been linked to higher perseverance and consistency (Datu, 2017). Research also showed that perceived support from classmates was associated with higher levels of consistency of interests (Clark et al., 2020). If encouragement provides an opportunity for students to maintain good interpersonal ties, it is possible that this construct may relate to higher levels of perseverance and consistency. Hence, we tested the following hypothesis:

H2: Overall academic encouragement, challenge-focused encouragement and potential-focused encouragement will positively predict grit (i.e., perseverance of effort and consistency of interests).

In turn, perseverance and consistency accrued via both forms of encouragement may be associated with higher academic engagement. Our prediction aligns well with prior studies demonstrating how grit relates to higher levels of academic engagement (Datu et al., 2016, 2018; Datu, 2021; Hodge et al., 2018; Lan & Moscardino, 2019). It is reasonable to predict that grit may relate to student's engagement as prior research has shown that gritty students are more intrinsically driven to learn in academic settings (Datu et al., 2018).

H3: Grit (i.e., perseverance of effort and consistency of interests) will positively predict academic engagement.

Consistent with the motivational process aspect of the JDR model (Bakker & Demerouti, 2007; Bakker & Demerouti, 2017) and existing literature on the academic benefits of encouragement (Wong, 2015; Wong et al., 2019, 2020) and grit (Datu et al., 2018; Datu, 2021; Hodge et al., 2018; Lan & Moscardino, 2019), we tested the following hypothesis:

H4: Overall academic encouragement, challenge-focused encouragement and potential-focused encouragement will have indirect effects on academic engagement via grit (i.e., perseverance of effort and consistency of interests).

Furthermore, we controlled for the effects of gender and subjective social status to minimize endogeneity bias (Antonakis et al., 2014) as studies have consistently shown significant correlations among gender, subjective social status, and academic engagement (Zhou & Yu, 2016; Perkmann et al., 2021; Sirin, 2005; Tartari & Salter, 2015).

The Chinese Context

Exploring the role of encouragement in students' grit and engagement in Chinese context is an essential research direction for a number of reasons. Over the past few decades, there has been an increasing governmental and institutional interest in learner-centered education and student learning in China (Guo et al., 2019). Chinese universities have called for the need to create challenging academic tasks that can engage Chinese students (State Council of the People's Republic of China, 2019). First-year undergraduate students face many academic demands and academic challenges, such as adjustment to a learning mode that attaches importance to autonomic learning and critical thinking. Consequently, it is important to strengthen academic support to help first year undergraduate students overcome academic challenges, realize their full potential, commit to long-term goals and engage in academic activities.

This study primarily explores the direct and indirect effects of overall academic encouragement and two types of academic encouragement (i.e., challenge-focused and potential-focused encouragement) on academic engagement via the intermediate variables—grit (i.e., perseverance of

effort and consistency of interests) among selected first-year undergraduate students in mainland China. The three hypothetical models are presented in Fig. 1.

Methods

Participants

We recruited 520 first-year undergraduate students from a regular and teacher-training college in mainland China using a convenience sampling technique. Five weeks before the end of the fall semester (December 2019), the first author invited participants to complete online assessments in evening self-study course or public compulsory course in the assigned classrooms. Before answering a sequence of questionnaires, the participants signed active consent forms and were informed that their answers would be confidential and used only for research purposes. These students voluntarily completed an online version of the Academic Encouragement Scale (AES), the Utrecht Work Engagement Scale for Students (UWES-9S), the Short Grit Scale (Grit-S), and the MacArthur Scale of Subjective Social Status, and answered demographic questions on gender, age, major, sibling, ethnicity, registered permanent residence, and highest educational attainment of parents.

To minimize the effect of random responses or inattention, a validity check question (e.g., Please indicate "*strongly agree*" for this question) and an item on self-reported diligence (i.e., I verify that I have carefully and honestly answered all questions on this survey) were included in the online survey. Only those who accurately responded to both the validity check and diligence questions were included in the final sample. Of the 520 participants, 485 (93.27%) provided eligible responses. The participants were aged 17 to 21 ($M = 18.74$, $SD = 0.80$). Slightly more than half of the first-year undergraduates were female (57.94%, $n = 281$) and majored in science and engineering (50.10%, $n = 243$). Most had at least one sibling, i.e., were not an only child (80.82%, $n = 392$), were of Han ethnicity (96.91%, $n = 470$), and were rural residents before entering university (62.47%, $n = 303$). In terms of their parents' education level, most had completed primary school (52.16%, $n = 253$) or middle and high school (35.26%, $n = 171$), the rest had higher education (12.58%, $n = 61$). Ethical approval for the study was granted by the first author's university.

Measures

Academic Encouragement The AES is a 10-item scale that measures both challenge-focused (e.g., "Someone I respect encouraged me to believe in myself when I doubted my academic abilities") and potential-focused encouragement (e.g., "Someone I respect pointed out my strengths when she/he suggested I pursue a new academic opportunity") received in an academic context. The AES focused on the quality rather than on the quantity of encouragement provided by trustworthy sources. Respondents "rate the extent to which the following statements are true" using a six-point scale, ranging from 1 (very untrue for me) to 6 (very true for me). A higher score indicates that more encouragement has been received (Wong et al., 2019). In this study, we used the Chinese version of the AES (Tang et al., 2021). The Cronbach's alpha coefficients were 0.89 and 0.86 for challenge-focused and potential-focused encouragement, respectively. Due to the high correlation between the two types of encouragement ($r = 0.73$, $p < 0.001$) in our study, average total score was also calculated to indicate the overall academic encouragement (Hsu et al., 2021). The Cronbach's alpha coefficient for the overall academic encouragement score was 0.92.

Grit The Grit-S is used to assess individuals' dispositional grit (Duckworth & Quinn, 2009; Zhong et al., 2018). Four negatively-worded items assess consistency of interests (e.g.,

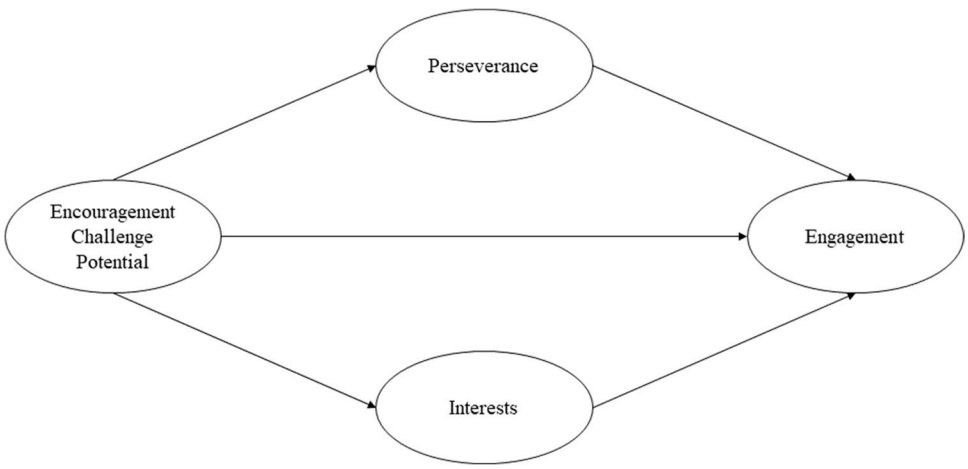

Fig. 1 Conceptual model of the relationships between encouragement, grit, and academic engagement. Note. *Challenge*, challenge-focused encouragement; *Potential*, potential-focused encouragement; *Encouragement*, overall academic encouragement; *Perseverance*, perseverance of effort; *Interests*, consistency of interests; *Engagement*, academic engagement

"I often set a goal but later choose to pursue a different one") and four items assess the tendency toward perseverance of effort (e.g., "I finish whatever I begin"). The response format ranges from 1 (strongly disagree) to 5 (strongly agree). The Chinese version of the Grit-S has been validated for first-year university students and adults (Luo et al., 2020; Zhong et al., 2018). The Cronbach's alpha coefficients in this study were 0.70 for consistency of interests and 0.78 for perseverance of effort.

Academic Engagement Academic engagement was evaluated using the Chinese version of the UWES-9S (Tang et al., 2021), which is the most commonly used measure of academic engagement (Carmona-Halty et al., 2019). This measure includes three subscales: vigor (e.g., "When I'm doing my work as a student, I feel bursting with energy"), dedication (e.g., "I am enthusiastic about my studies"), and absorption (e.g., "I feel happy when I am studying intensely"). Each item is rated on a 7-point scale, ranging from 0 (never) to 6 (always). We combined the scores on vigor, dedication, and absorption to form the composite academic engagement score which is the alternatives recommended for the use of the UWES (e.g., Schaufeli et al., 2002). A higher score indicates a higher level of academic engagement. In this study, the Cronbach's alpha coefficients for the vigor, dedication, and absorption subscales and the total score were 0.76, 0.80, 0.78, and 0.90, respectively.

Subjective Social Status The MacArthur Scale of Subjective Social Status presents respondents with a picture of a "social ladder" with 10 steps and is used to assess subjective social status. Respondents are asked to choose the step that corresponds to their position in their community. A higher ladder indicates a higher subjective social status. Studies have shown that subjective social status is positively correlated with income, occupation, and education (Hu et al., 2012; Operario et al., 2004).

Data Analyses

First, as our data were only collected from one source (i.e., students self-report), we performed statistical analyses to assess the severity of common method bias. Second, we reported bivariate Pearson's correlation coefficients among studied variables. Third, we performed SEM through Maximum Likelihood (ML; Muthén & Muthén, 1998–2017) estimator to examine the three hypothetical models (see Fig. 1). Because of the high correlation between the two types of encouragement, two separate models for challenge-focused encouragement and potential-focused encouragement were estimated to address issue related to multicollinearity. A model for overall academic encouragement was estimated in which the AES items were aggregated into two parcels using a domain-representative approach to avoid inflated measurement errors caused by multiple items of latent variables (Little et al., 2002). As such, the UWES-9S items were aggregated into three parcels using a domain-representative approach in mentioned three models (Little et al., 2002). Moreover, gender (i.e., Male = 1) and subjective social status were included in the SEM models as control variables. The comparative fit index (*CFI*), Tucker-Lewis index (*TLI*), and root mean square error of approximation (*RMSEA*) were adopted to evaluate the models' fitness. The values of *CFI* and *TLI* > 0.95 and *RMSEA* < 0.06 were indicative of good model fit, while values *CFI* and *TLI* > 0.90 and *RMSEA* < 0.08 indicated adequate model fit (Hu & Bentler, 1999; Marsh et al., 2005). Finally, we used bootstrap procedures with 5,000 samples and a 95% confidence interval (95% *CI)* to test multiple mediation effects (Shrout & Bolger, 2002).

When all items from the academic encouragement, grit and academic engagement were loaded into one factor, the results indicated that the one-factor CFA model did not reveal an acceptable fit to the data ($\chi^2 = 3215.87$, $df = 324$, $CFI = 0.540$, $TLI = 0.502$, $RMSEA = 0.136$). The one-factor CFA model exhibited a significantly weaker fit to the data than the multifactor model ($\chi^2 = 665.25$, $df = 303$, $CFI = 0.942$, $TLI = 0.933$, $RMSEA = 0.050$; $\Delta\chi^2_{(21)} = 2550.63$, $p < 0.001$). Moreover, following Podsakoff et al. (2003) and Liang et al. (2007), we included a common method factor whose indicators included all the indicators and calculated each indicator's variances substantively explained by the construct and by the method. The results demonstrate that the average substantively explained variance of the indicators is 0.51, while the average method based variance is 0.02. The ratio of substantive variance to method variance is about 25:1. In addition, all method factor loadings are not significant. We contend that the method is unlikely to be a serious concern for this study.

According the results of priori studies (Tang et al., 2021; Teuber et al., 2020), a power analysis was conducted through pwrSEM v0.1.2 (Wang & Rhemtulla, 2021). The result demonstrated that, if all effects of encouragement (i.e., overall academic encouragement, challenge-focused encouragement and potential-focused encouragement) on perseverance of effort and consistency of interests equal to 0.2 are the smallest effect size of interest, $n = 485$ will provide above 0.90 power to detect the effects of encouragement on perseverance of effort and consistency of interests in the models, as well as provide above 0.80 power to detect the indirect effects of encouragement on academic engagement through perseverance of effort and consistency of interests. Hence, our sample of $n = 485$ is a reasonable sample size.

Results

Associations among Academic Encouragement, Grit, and Academic Engagement

The bivariate correlations of all variables are presented in Table 1. All of the bivariate correlations were significant and positive, except for the association between potential-focused encouragement and consistency of interests, which was not significant and approached zero ($r = 0.08$, $p > 0.05$).

Analyses of Indirect Effects

The results of all three models showed a good fit (*CFI* > 0.90, *TLI* > 0.90, *RMSEA* < 0.08, see Table 2), and all of the factor loadings for the indicators on the latent variables were significant. The findings of mediation analysis are described in Fig. 2. Consistent with H1, overall academic encouragement, challenge-focused encouragement and potential-focused encouragement positively predicted academic engagement. H2 was partly supported as overall academic encouragement, challenge-focused encouragement and potential-focused encouragement predicted perseverance of effort, whereas overall academic encouragement and challenge-focused encouragement positively predicted consistency of interests. H3 was partly supported because perseverance of effort positively predicted academic engagement in all models, and consistency of interests predicted academic engagement only in the potential-focused encouragement model. The findings of bias-corrected bootstrapping analyses partly supported H4. Results indicated that the indirect effects of overall academic encouragement, challenge-focused encouragement and potential-focused encouragement on academic engagement via the intermediate variable perseverance of effort were significant as zeroes occurred between the lower and upper limit of their respective confidence intervals. The indirect effects of overall academic encouragement, challenge-focused encouragement and potential-focused encouragement on academic engagement via consistency of interests were not significant as zero occurred between the lower and upper limit of its confidence intervals (see Table 3).

Discussion

Both challenge-focused encouragement and potential-focused encouragement are beneficial to students in academic settings, but relevant research remains in the initial stage. Although research has demonstrated that two forms of academic encouragement (i.e., challenge-focused encouragement and potential-focused encouragement) positively associated with academic engagement (Tang et al., 2021), there have been limited studies on the possible mechanisms through which encouragement might relate to higher academic engagement. Further, previous studies ignored the potential issue of multicollinearity due to high correlation between challenge-focused and potential-focused encouragement. As encouragement has been considered as an overarching general construct, this study explored the indirect effects of overall and dimensional encouragement on academic engagement via grit (i.e., perseverance of effort and consistency of interests) among Chinese first-year undergraduates. Our results demonstrated that overall academic

Table 1 Correlations between variables

	M	*SD*	1	2	3	4	5	6
1. Challenge	4.66	.85	1					
2. Potential	4.31	.93	.73***	1				
3. Encouragement	4.49	.83	.92***	.94***	1			
4. Perseverance	3.34	.68	.27***	.24***	.27***	1		
5. Interests	2.92	.66	.13**	.08	.11*	.27***	1	
6. Engagement	3.33	87	.36***	.35***	.38**	.49***	.24***	1

Challenge, challenge-focused encouragement; *Potential*, potential-focused encouragement; *Encouragement*, overall academic encouragement; *Perseverance*, perseverance of effort; *Interests*, consistency of interests; *Engagement*, academic engagement

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

Table 2 Model fit of the three predict models

Model	χ^2	*df*	CFI	TLI	RMSEA	90% CI RMSEA
Overall encouragement model	236.04***	83	.933	.916	.062	.052-.071
Challenge-focused encouragement model	261.80***	128	.958	.950	.046	.038-.054
Potential-focused encouragement model	282.91***	128	.947	.937	.050	.042-.058

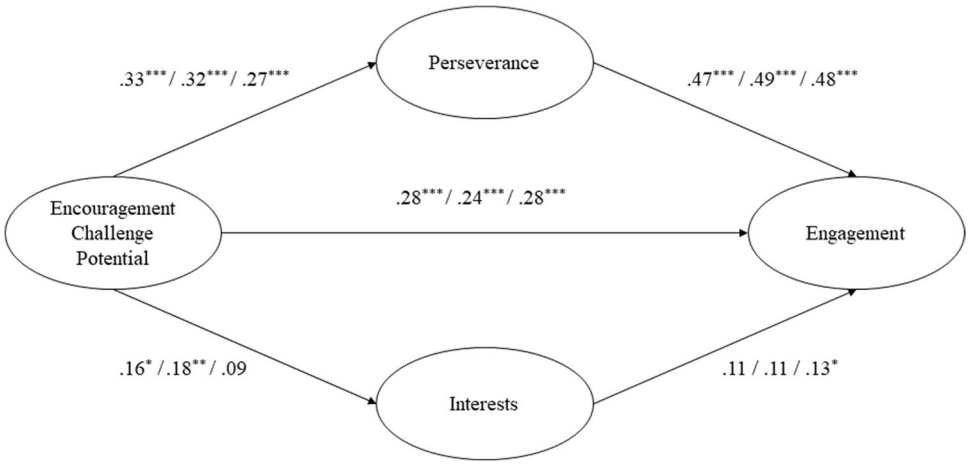

Fig. 2 Structural equation model with standardized coefficients. Note. Coefficients on the left of the slashes are for overall academic engagement, those on the middle are for challenge-focused encouragement, and those on the right are for potential-focused encouragement; *Challenge*, challenge-focused encouragement; *Potential*, potential-focused encouragement; *Encouragement*, overall academic encouragement; *Perseverance*, perseverance of effort; *Interests*, consistency of interests; *Engagement*, academic engagement; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 3 Results of indirect effects of the three predict models

Indirect paths	Indirect effects	BCa 95% CI
Encouragement → Perseverance → Engagement	.15	.09-.23
Encouragement → Interests → Engagement	.02	-.01-.06
Challenge → Perseverance → Engagement	.15	.09-.23
Challenge → Interests → Engagement	.02	-.01-.06
Potential → Perseverance → Engagement	.13	.07-.20
Potential → Interests → Engagement	.01	-.03-.04

Challenge, challenge-focused encouragement; *Potential*, potential-focused encouragement; *Encouragement*, overall academic encouragement; *Perseverance*, perseverance of effort; *Interests*, consistency of interests; *Engagement*, academic engagement; *BCa 95% CI*, bias-corrected and accelerated bootstrapped estimates at 95% confidence interval

encouragement, challenge-focused encouragement and potential-focused encouragement positively predicted perseverance of effort, consistency of interests and academic engagement, except for statistically non-significant effect of potential-focused encouragement on consistency of interests. Results also indicated that overall academic encouragement, challenge-focused encouragement and potential-focused encouragement indirectly predicted academic engagement through perseverance of effort.

Consistent with previous research (Tang et al., 2021), overall academic encouragement, challenge-focused encouragement and potential-focused encouragement were linked to higher levels of academic engagement. Encouragement communicates affirmations to motivate recipients, which provides social (e.g., feeling cared for and supported) and cognitive (e.g., hopeful thinking and affirmation) benefits (Wong et al., 2019). More specially, challenge-focused encouragement concentrates on help individuals handle on challenges (e.g., reminding strength and enhancing confidence). Potential-focused encouragement focuses on the future and goal setting, it can potentially boost hopeful thinking, and instill affirmations in students, which helps students unlock their potential (Wong, 2015; Wong et al., 2019). Therefore, encouragement (including challenge-focused and potential-focused encouragement) provides opportunities for students to fulfil their fundamental psychological needs (especially the need for competence and relatedness) and motivates academic engagement (Bakker & Demerouti, 2007; Skinner & Pitzer, 2012). As academic encouragement includes affirmation and motivation enhancement in nature which is conductive to motivating growth and learning, our results also suggest that academic encouragement can be considered an academic resource in the job-demands-resources framework (Bakker & Demerouti, 2007).

Moreover, overall academic encouragement, challenge-focused encouragement and potential-focused encouragement positively predicted perseverance of effort. These

results were consistent with the positively predictive role of Chinese and Japanese parents' use of encouragement on children's persistence on difficult academic tasks, but the relationship was not significant among families in the United States and New Zealand (Jose & Bellamy, 2012). Although overall academic encouragement, challenge-focused encouragement and potential-focused encouragement positively predicted consistency of interests, but their effects were faint, even statistically insignificant. Similarly, study also demonstrated that students' perception of faculty encouragement did not directly contribute to intent to persist in engineering programs (Hsu et al., 2021). Our findings provided further evidence for the salient role of social factor (i.e., academic encouragement) on individuals' goal pursuit in a collectivist culture. In non-Western and collectivist societies such as mainland China, individuals tend to engage in relatively flexible and context-sensitive strategies to achieve long-term goals (Datu, 2017, 2021; Datu et al., 2018), as well as be more open to the influence of encouragement provided from significant others (Wong, 2015). As mentioned, encouragement is beneficial for social and cognitive outcomes especially in cultures that incentivize smooth interpersonal connections. Therefore, learning environments that encourage students' capacity to realize their potentialities and the bright side of academic hurdles may have the potential to promote their persistence in pursuing long-term ambitions.

More importantly, our results showed that academic encouragement and its dimensions had indirect effects on academic engagement through perseverance of effort. This study supports prior research on the links of positive social factors such as perceived support from parents and teachers in students' persistence (Datu, 2017; Clark et al., 2020; Su-Russell & Russell, 2021). It is likely that perception of encouragement may relate to both perseverance and engagement as environmental conditions that facilitate fulfilment of the basic psychological needs for relatedness can boost optimal psychological functioning including effective learning outcomes (Ryan & Deci, 2017). This research contributes to existing literature on the psychological benefits of encouragement through providing preliminary evidence on how perseverance may serve as a precise psychological mechanism underpinning the positive associations of encouragement with academic engagement in higher education contexts.

Surprisingly, our results did not provide evidence for different psychosocial pathways of challenge-focused and potential-focused encouragement for enhancing academic outcomes (Wong et al, 2020). The analogous results showed both challenge-focused and potential-focused encouragement increased first-year undergraduate students' intent to persist through an indirect path of self-efficacy (Hsu et al., 2021). These results demonstrate that albeit distinguished expressions of encouragement, both might potentially perform a similar function. According to original conceptional model of encouragement, challenge-focused encouragement might be more salient to students who are struggling in academic activities, while potential-focused encouragement might be more beneficial for high-performing students (Wong et al, 2020). As research on the relationship between encouragement and grit is limited, when and how overall and dimensional encouragement produce effects on grit require further study.

Practical Implications

Our results have several implications for practitioners. School administrators are encouraged to invest programs or services that aim to foster encouragement in first-year undergraduate students in higher education contexts. University counsellors and psychologists may explore concrete opportunities in which more advance undergraduate students can directly support undergraduate freshmen via peer mentoring programs. Given the positive role of tutors on the adjustment of first-year undergraduate students (Wang & Wang, 2016), universities may consider strengthening mechanisms to pair freshmen with effective tutors. Given the relational benefits of letters of encouragement (Wong et al., 2020), teaching staffs or research supervisors may consider the use of comparable strategies (e.g., encouraging notes for students experiencing adjustment issues) to engage learners in higher education settings.

Limitations

The present study has conceptual and methodological limitations. First, the participants in this study were first-year undergraduate students from one university in mainland China so the results are not generalizable to undergraduate students in other Chinese societies. More studies are needed to expand the generalizability of the findings in more diverse and representative samples. Second, as this research did not examine how specific source of academic encouragement and prior studies (Altermatt, 2016; Datu, 2017) demonstrate how various social agents such as peers and teachers shape grit and other essential academic outcomes, it is interesting to explore how encouragement from different social agents might differentially contribute to changes in engagement. Third, as there is on-going debate about the most culturally sensitive model of grit (Datu, 2021) and the importance of adopting domain-specific of grit (Clark & Malecki, 2019), more studies are warranted to understand how different models of grit matter for engagement outcomes. Fourth, the present study used a cross-sectional design, which could not generate insights on how encouragement may relate to cross-temporal changes in grit and academic engagement.

Longitudinal studies are needed to understand the causal relationships among academic encouragement, grit, and engagement. Finally, all of our analyses were based on self-report data, which may result in common method bias (Podsakoff et al., 2003). Future research should seek to overcome this limitation by collecting data from multiple sources (i.e., peers and tutors).

Conclusions

This study showed that overall academic encouragement, challenge-focused encouragement and potential-focused encouragement positively predicted perseverance of effort and academic engagement. Results also indicated that overall academic encouragement, challenge-focused encouragement and potential-focused encouragement indirectly predicted academic engagement through perseverance of effort. These findings emphasize the academic benefits of fostering challenge-focused and potential-focused encouragement among first-year undergraduate students. We hope that this research may encourage additional investigations on the educational and psychological consequences of academic encouragement.

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Data Availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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