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Testing the Causal Relationship Model of Psychological Sense of School Membership and Family Communication Patterns with Flourishing and Academic Performance with the Mediating Role of Meaning in Life and Psychological Capital

Ferdows Falatouni[1], Askar Atashafrouz[2]✉, Manijeh Shehni Yailagh[3], Alireza Hajiyakhchali[4]

1. PhD Student of Educational Psychology, Department of Psychology, Educational Science and Psychology, Shahid Chamran University of Ahvaz, Ahvaz, Iran
2. Associate Professor of Department of Psychology, Faculty of Educational Science and Psychology, Shahid Chamran University of Ahvaz, Ahvaz, Iran, a.atashafrouz@gmail.com
3. Professor in Department of Psychology, Faculty of Educational Science and Psychology, Shahid Chamran University of Ahvaz, Ahvaz, Iran
4. Associate Professor of Department of Psychology, Faculty of Educational Science and Psychology, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

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ABSTRACT

Objective: This study examined a causal model linking psychological sense of school membership and family communication patterns with flourishing and academic performance through the mediating roles of meaning in life and psychological capital among gifted and normal students.

Methods: The statistical population consisted of all female twelfth-grade students in Dezful during the 2023–2024 academic year. Using multistage proportional random sampling, 176 students were selected from each group (gifted and normal). Participants completed the Psychological Sense of School Membership Scale (St-Amand et al., 2020), the Revised Family Communication Patterns Questionnaire (Koerner & Fitzpatrick, 2002), the Meaning in Life Questionnaire (Steger et al., 2006), the Psychological Capital Questionnaire (Luthans et al., 2007), and the Flourishing Scale (Diener et al., 2010). Data were analyzed using structural equation modeling.

Results: Most direct paths in the proposed model were significant, except for the paths from family conformity-orientation to meaning in life, family conformity-orientation to psychological capital, and meaning in life to academic performance. Indirect path analyses indicated significant mediation effects. Multigroup analysis also showed that the structural model was similar for both gifted and normal students.

Conclusions: The findings highlight the importance of strengthening students' sense of school belonging and fostering constructive family communication patterns to promote flourishing and academic outcomes. Schools and families can support students' development by encouraging participation in social activities and maintaining effective parent–child communication.

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Introduction

Academic achievement is utilized by various educational organizations for several purposes including placement in higher education institutions and jobs. Moreover, students' academic achievement is considered as a critical factor in assessing success in any educational system (Ncororo et al., 2022).

In addition to academic achievement, a construct that seems to be the ideal of those in charge of education is the concept of flourishing, which refers to a way of living with constant optimism in human performance and implicitly implies goodness, fertility, growth, and flexibility (Fredrickson & Losada, 2005). According to Keyes (2016), flourished individuals have high levels of emotional well-being and tend to live purposeful lives. They feel self-directed and independent, have a sense of internal control, and choose their own destiny. Flourishing plays a role in creating competence and positive feelings about education and is positively related to focus, commitment to homework, and adjustment to the school environment (Ashkoti et al., 2022).

Providing special facilities and amenities for the development and flourishing of students' talents is considered a necessity of a desirable society (Alsakarneh & Hong, 2015). Accordingly, for several years, Iran's Ministry of Education has begun classifying schools based on student performance including special schools for gifted students. These schools have specifica dmission requirements and their pupils are in a different educational setting from those of mainstream schools (Haghshenash et al. 2006). Some of these schools help gifted students meet educational standards and achieve the required academic performance, however do not focus on improving other competences (Lockhart et al., 2021). A large budget is spent annually on educating gifted students, however the outcomes of these schools are less studied.

In this regard, psychologists have been aware of the role of intelligence in academic performance and achievement for years; however, what has caught the attention of psychologists is why some of these students despite having high cognitive intelligence fail in their work, while others succeed with lower intelligence. This is where people require to know that to succeed in work, education, or life, simply having high levels of intelligence and cognitive ability is not enough (Kahyaoglu, 2013), however rather the interaction of these factors with motivational characteristics is considered a necessary condition for excellence in various fields.

Research has confirmed the role of various motivational factors on academic success and flourishing (Garton et al. 2001; Finch et al. 2020). Some studies indicate the effect of the level of students' understanding of meaning in life on improving their academic performance and flourishing. Karen (2019) showed that students who had a greater presence of meaning, experienced higher academic adjustment, and this greater adjustment led to higher final grades in general psychology courses. On the other hand, some studies indicate the relationship between meaning in life and flourishing. In a study, Zhou and Huo (2022) found that both meaning in life and self-efficacy could play a predictive role in students' flourishing.

Moreover, psychological capital is one of the phenomena that has shown a high potential capacity to improve people's health and performance in different environments in studies of the last decade (Rezaee et al. 2021). Psychological capital is defined as an individual's perception of himself, having a purpose for achieving success, and resilience in the face of difficulties. This is an interconnected composite construct that includes four cognitive components, namely self-efficacy, hope, resilience, and optimism (Luthans et al. 2007). In this regard, Geremias, et al. (2022) showed that students who had the highest scores in the four components of psychological capital furthermore showed the highest scores in internal learning in teams. Moreover, the relationship between psychological capital and flourishing is evident in various studies. Nasiri et al. (2015) in their study on students showed that resilience has a direct effect on flourishing. Asl Dehghan et al. (2021) showed in a study that higher levels of self-efficacy and hope predict higher levels of flourishing.

Based on the research, it seems that gifted students, given their specific circumstances and special educational conditions, have a higher level of positive psychological constructs such as self-efficacy, hope, and resilience, which helps them to better cope with academic and social challenges. For example, various studies (Atarod & Abasi, 2022; Eskandari, 2017) indicate the superior academic performance of gifted students compared to normal students. Eyni et al. (2022) reported a higher level of self-efficacy in gifted students compared to their normal counterparts in their research. The level of optimism of gifted students was observed to be higher than that of normal students in the studies of Abdollahi (2014) and Bahrami (2022). Sohrabi et al. (2021) showed that gifted male high school students have significantly higher psychological capital than

normal students. Furthermore, gifted students seem to seek meaning in life more than normal students and are more inclined to discover their goals and values (Rasouli Azad, 2016).

However, some gifted students may have issues such as high pressure to succeed, excessive expectations of themselves, and feelings of loneliness and isolation, which can lead to a decrease in meaning in their lives and psychological capital. It is typically observed that students in gifted schools suffer from deficiencies in their sense of competence, self-efficacy beliefs, and even academic burnout due to the existing competitive atmosphere. Sometimes, excessive preoccupation with academic matters due to their perfectionistic personality causes to communication and emotional issues (Chan, 2009). In such a situation, identifying issues and discovering appropriate solutions will undoubtedly be an effective step towards the flourishing of this group of gifted students and the society's growth.

According to the results of past researches, it seems that these two motivational variables namely meaning in life and psychological capital are relatively affected by the family environment and the school environment. The realization of valuable goals and one's talents are outlined in the rational and emotional atmosphere of the family (Nikdel et al., 2022). The way family members communicate when interacting and exchanging necessary information includes two orientations: conversation-orientation and conformity-orientation, which are called family communication patterns (Ferguson, et al., 2011). Conversation-orientation refers to the extent that families provide conditions in which all family members are encouraged to participate freely in the exchange of ideas on a wide range of topics, and conformity-orientation refers to the extent that family communication emphasizes the congruence of ideas and attitudes (Fitzpatrick, 2004). Lambert et al. (2010) showed the role of family relationships as an significant source of perceived meaning in life. Furthermore, Farokhi and Sabzi (2015) showed that the family conversation-orientation can positively predict dimensions of psychological capital.

In addition to family, research has shown that student's psychological sense of school membership plays a role in the formation of meaning in life and psychological capital. Students' sense of acceptance, respect, and other supports at school, play a fundamental role in their motivation and success. This construct has several motivating effects on students, including school engagement, peer attachment, and teacher harmony. In a study, Wilt et al. (2019) noted that a harmonious student-teacher relationship has an impact on well-being. This construct is

hypothesized to contribute to academic motivational constructs such as engagement and self-efficacy, which in turn improve academic achievement (Cortina et al., 2017). Kapoor and Tomar (2016) found in their study on 14- to 17-year-old students that students' psychological sense of school membership was related to their resilience, self-efficacy, and leadership skills. Sulimani-Aidan and Melkman (2022) showed that school belonging positively predicted hope in a sample of adolescents. Yuen and Datu (2020) in a study on secondary school students showed that meaning in life was associated with higher levels of connections with parents, school, peers, and teachers, and that these connections had a positive impact on meaning in life. Talebzadeh Shushtari et al. (2016) in their phenomenological study on college students found that friends are source of emotional and supportive relationships, and spending good times with friends gives meaning to their lives.

In this study, the researcher examined the causal relationship between the psychological sense of school membership and family communication patterns with flourishing and academic performance, with the mediating role of meaning in life and psychological capital, in gifted and normal students in an integrated model, and sought to answer the questions of whether the assumed model in female students fits the data and whether the assumed model is different in gifted and normal students. Figure 1 shows the proposed causal relationship between the psychological sense of school membership and family communication patterns with flourishing and academic performance, with the mediating role of meaning in life and psychological capital in gifted and normal students.

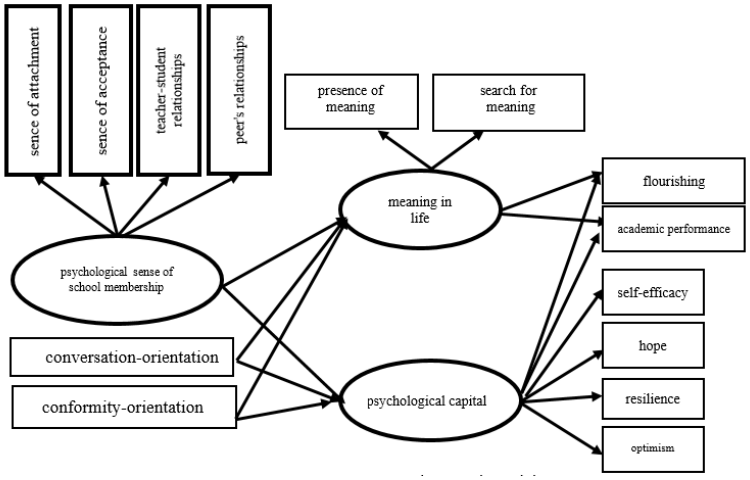

Fig. 1. Proposed research model

Material and Methods

Statistical Population, Sample and Sampling Method

The present study was descriptive, correlation, namely structural equation modelling. The statistical population of this study was all female students in the 12th grade of high school in Dezful city, in the academic year 1402-1403. In order to select the sample for testing the model, a multi-stage proportional random sampling method was utilized. The basis for determining the sample size in this study was the number of twelfth grade students studying in the gifted high school. For sampling from gifted schools, considering that Farzanegan High School was the only second high school and its total twelfth grade students were 176, the census method was utilized to select the sample. Therefore, all of the 176 twelfth grade female students was selected from the School for Gifted Students (total students) and the same number of 176 twelfth grade female students, from regular schools, were selected as samples using a multi-stage proportional random sampling method (from 6 regular government secondary schools).

Instruments

Revised version of the Family Communication Patterns Questionnaire (RV-FCPQ). The RV-FCPQ was revised by Koerner and Fitzpatrick (2002) and translated into Persian by Koroshnia and Latifian (2007). The scale has 26 items. The scoring method is based on a Likert scale (0=strongly disagree to 4=strongly agree). The first 15 items relate to the conversation-orientation (scores range from 0 to 60) and 11 items relate to the conformity-orientation (scores range from 0 to 44). The reviewers reported good validity of this questionnaire. They reported Cronbach's alpha coefficients for the conversation-orientation of 0.89 and for the conformity-orientation of 0.79. The translators, while confirming the criterion validity of this tool, obtained its reliability coefficients using Cronbach's alpha method for conversation-orientation and conformity-orientation as 0.87 and 0.81, respectively. In this study, in the implementation of confirmatory factor analysis, 25 items of this questionnaire had acceptable factor loading (above 0.3) and 1 item (item 15) had a factor loading less than 0.3. As a result, this item was eliminated in the final analysis. The fit indices obtained with 3 modifications, GFI=0.740, CFI=0.84, and RMSEA=0.08, indicate a favorable fit of the data. In this study, Cronbach's alpha for conversation-orientation was 0.90 and for conformity-orientation was 0.86.

Psychological Sense of School Membership (PSSM) Questionnaire. Goodenow (1993) developed this questionnaire with 18 items which scored on a Likert scale (from strongly disagree=1 to strongly agree=5) (St-Amand et al., 2017). St-Amand et al. (2020) analyzed the validity of the French version of this questionnaire by conducting exploratory factor analysis on a sample of high school students and obtained four factors including (1) teacher-student relationships, (2) peer's relationships, (3) sense of acceptance, and (4) sense of attachment. Cronbach's alpha coefficient for all four factors was reported to be above 0.7. In Iran, Parandin (2022) and Ravan et al. (2021) utilized this questionnaire in their research according to the validation of Ye and Wallace (2014) with three dimensions. In the present study, the questionnaire which was validated by St-Amand et al. (2020), was translated by the researchers into Persian for the first time and utilized in Iran. In this study, in conducting confirmatory factor analysis on the items of this questionnaire, 17 items of this questionnaire had acceptable factor loading (above 0.3) and 1 item (item number 10) had a factor loading less than 0.3. As a result, this item was removed in the final analysis. The fit indices obtained with 2 corrections, GFI=0.858, CFI=0.943 and RMSEA=0.049, indicate a favorable fit of the data with the measurement model. In this study, Cronbach's alpha for the entire questionnaire was 0.82, and the subscales of peer' relationships were 0.70, teacher-student relationships were 0.70, sence of acceptance was 0.61, and sence of attachment was 0.59.

Meaning in Life Questionnaire (MLQ). This questionnaire, developed by Steger et al. (2006) and translated into Persian by Majdabadi (2017), has 10 items and two subscales: “presence of meaning” and “search for meaning”. Items 1, 4, 5, 6 and 9 constitute the presence of meaning subscale and items 2, 3, 7, 8 and 10 constitute the search for meaning subscale. The subjects’ responses are on a Likert scale from completely true (7) to completely false (1). The range of scores for both subscales vary between 5 and 35. The developers have reported high reliability and validity for this questionnaire. Hajitabar Firouzjaee et al. (2019) obtained its reliability with Cronbach’s alpha of 0.75. In this study, the fit indices obtained from the confirmatory factor analysis method with 2 modifications, GFI=0.906, CFI=0.953, and RMSEA=0.079, indicate the favorable fit of the data with the measurement model. In this study, Cronbach's alpha for the entire questionnaire was 0.78, and the presence of meaning and search for meaning subscales were 0.87 and 0.75, respectively.

Psychological Capital Questionnaire (PCQ). The PCQ developed by Luthans et al. (2007) and translated into Persian by Rahimi (2010), has 24 items and 4 subscales including self-efficacy, hope, resilience and optimism. The subject responds to each item on a Likert scale (from strongly disagree=1 to strongly agree=6). In this questionnaire, the lowest and highest scores are 24 and 144 (Eskandari et al., 2022). The developers confirmed the construct validity of this questionnaire. Cronbach's alpha coefficient was reported as 0.87 in the study of Bahadori Khosroshahi et al. (2012) and 0.7 in the study of Eskandari et al., (2022) In this study, in conducting confirmatory factor analysis on the items of this questionnaire, 22 items of this questionnaire had acceptable factor loadings (above 0.3) and 2 items (items 15 and 16) had factor loadings less than 0.3. As a result, these items were eliminated in the final analysis. The fit indices obtained with 3 corrections, GFI=0.740, CFI=0.813, and RMSEA=0.097, indicate an acceptable fit of the data. In this study, Cronbach's alpha was 0.91 for the entire questionnaire and 0.83 for the all of subscales of self-efficacy, hope, resilience, and optimism.

Flourishing Scale (FS). This scale was developed by Diener et al. (2010) and translated into Persian by Moradi Siah Afshadi et al. (2015). This scale has 8 items and each item has a Likert scale (1=strongly disagree to 7=strongly agree). The minimum and maximum scores are 8 and 56. In examining the construct validity, the developer reported correlation coefficients with the life satisfaction scale of 0.62 and with the Cantril's Ladder tool of 0.57. These researchers reported reliability coefficients with the Cronbach's alpha method of 0.87 and with the one-month test-retest method of 0.71. The translators obtained correlations between the subjects' scores on each item and the total score of the Flourishing Scale between 0.59 and 0.76, and in all cases, they were significant. Furthermore, the Cronbach's alpha coefficient of this scale was reported as 0.82 and its splitting coefficient as 0.80. In this study, the fit indices obtained using confirmatory factor analysis on this scale, GFI=0.95, CFI=0.97 and RMSEA=0.06, indicate the optimal fit of the data with the measurement model. Furthermore, in this study, the Cronbach's alpha of this scale was obtained as 0.82.

Academic performance: In this research, in order to measure the academic performance of the students, the average grades of their 11th grade were utilized.

Data Analysis: Subsequently obtainting permission from the provincial Department of Education, each of the selected schools was visited and the principals and teachers was convinced about

administering this research. Then, the researcher distributed the questionnaires subsequently introducing herself and explaining the purpose of the research to the subjects. Structural equation modeling was utilized to evaluate the model, Preacher and Hayes (2008) macro bootstrap method was utilized to test the mediating effects, and the multi-group method was utilized to compare the models using SPSS version 27 and AMOS version 24.

Results

Table 1 reports the descriptive findings of the research variables and the normality of the data distribution.

Table 1. Descriptive information of research variables

Scale/Subscale	Mean	Standard Deviation	skewness	kurtosis
peer' relationships	18.13	3.52	-0.40	0.12
teacher-student relationships	21.43	4.13	-0.21	-0.11
sense of acceptance	9.84	2.85	-0.13	-0.82
sense of attachment	9.93	2.94	-0.31	-0.58
conversation-orientation	37.12	11.29	-0.48	-0.54
conformity-orientation	18.64	10.03	0.34	-0.67
presence of meaning	27.89	5.96	-0.99	0.69
search for meaning	29.86	4.90	-0.87	0.04
self-efficacy	27.41	5.28	-0.50	-0.13
hope	26.03	5.46	-0.42	0.12
resilience	16.20	3.64	-0.07	-0.04
optimism	25.98	5.42	-0.39	-0.17
flourishing	44.06	7.39	-0.29	-0.56
academic performance	18.60	1.26	-1.30	1.32

As can be seen in Table 1, the skewness and kurtosis statistics are all in the range of 2 to -2; in fact, based on these statistics, the data has a normal distribution; Accordingly, the utilize of parametric tests is permitted.

The findings related to the hypothesis testing are discussed below. Previously, the findings from examining the underlying assumptions of Kline (2011) structural equation modeling method, including missing data, outliers, normality, and multiple collinearity, showed that the data of this study meet the above assumptions. The fit indices of the proposed model are presented in Table 2 below.

Table 2. Fit indices of the proposed model

Fitness indicators	Initial value	Modified value
Normed X^2 Measure (df/x^2)	3.60	2.53
Compartive Fit Index (CFI)	0.88	0.93
Goodness of Fit Index (GFI)	0.89	0.92
Adjusted Goodness of Fit Index (AGFI)	0.84	0.88
Normed Fit Index (NFI)	0.85	0.90
Incremental Fit Index (IFI)	0.89	0.93
Tuker-Lewise Index (TLI)	0.84	0.91
Root-Mean-Square Error of Approximation (RMSEA)	0.097	0.075

Based on the results of Table 2, the indicators obtained from the structural equation model in the initial state of the model do not have the desired fit. Therefore, based on the suggestion of AMOS software, the covariance between the error of the presence of meaning variable and the error of the psychological capital variable was plotted consequently that the modified model has the desired fit (x^2/df=2.53, CFI=0.94, GFI=0.92, AGFI=0.88, NFI=0.90, IFI=0.93, TLI=0.91, RMSEA=0.075).

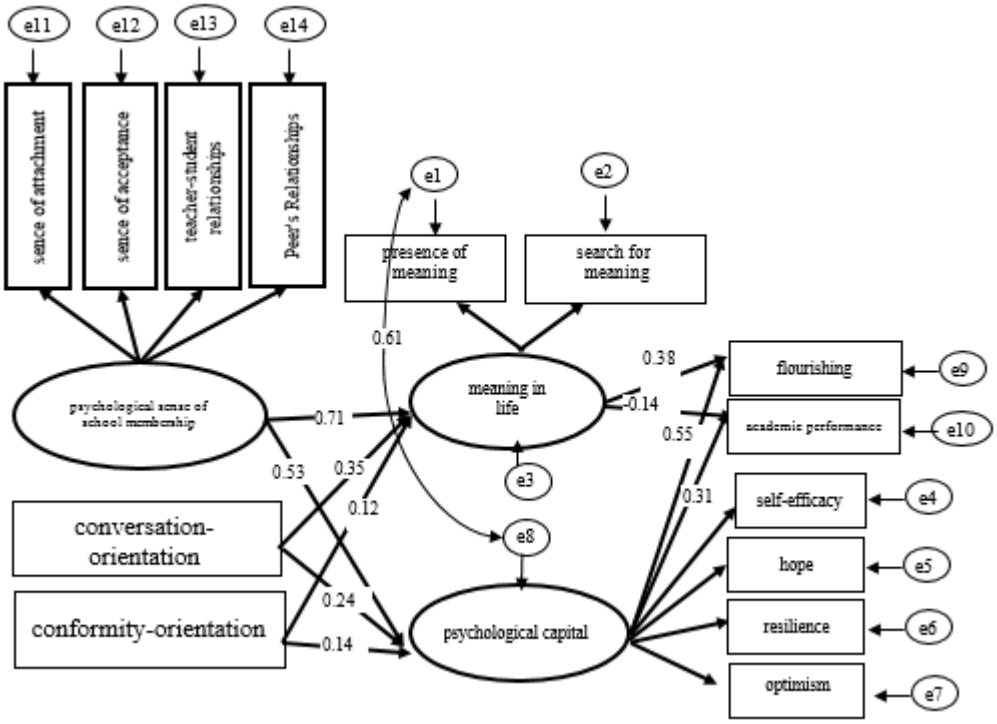

Fig. 2. Modified proposed model

The following presents the findings from the multiple direct and indirect path test. The path coefficients of the direct relationships in the entire sample are shown in Table 3.

Table 3. Path coefficients and significance level of paths in the initial proposed model

Paths	Standardized Regression Weights (β)	Regression Weights (B)	Standard error (SE)	Critical ratio (CR)	P
psychological sense of school membership to meaning in life	0.73	1.59	0.23	6.82	< 0.001 p
psychological sense of school membership psychological capital	0.63	0.74	0.12	6.30	< 0.001 p
conversation-orientation to meaning in life	0.25	0.09	0.3	3.22	= 0.001 p
conversation-orientation to psychological capital	0.18	0.03	0.01	2.59	= 0.010 p
conformity-orientation to meaning in life	0.10	0.04	0.03	1.42	= 0.155 p
conformity-orientation to psychological capital	0.10	0.02	0.01	1.66	= 0.096 p
meaning in life to flourishing	0.52	0.94	0.15	6.22	< 0.001 p
meaning in life to academic performance	-0.10	-0.03	0.03	-1.09	=0.274 p
psychological capital to flourishing	0.42	1.42	0.24	5.78	< 0.001 p
psychological capital to academic performance	0.29	0.17	0.05	3.20	= 0.001 p

The results in Table 3 show that the standard path coefficient (β=0.73) of the psychological sense of school membership to meaning in life at the level of $p < 0.001$, the standard path coefficient (β=0.63) of the psychological sense of school membership to psychological capital at the level of $p < 0.001$, the standard path coefficient (β=0.25) of conversation-orientation to meaning in life at the level of p=0.001, the standard path coefficient (β=0.18) of the conversation orientation to psychological capital at the level of p=0.01, the standard path coefficient (β=0.52) of the meaning in life to flourishing at the level of $p > 0.001$, the standard path coefficient (β=0.42) of the psychological capital to flourishing at the level of $p < 0.001$, and the standard path coefficient (β=0.29) of the psychological capital to academic performance at the level of p=0.001. are significant, however the standard path coefficient (β=0.10) of conformity-orientation to meaning in life at the level of p=0.155, the standard path coefficient (β=0.10) conformity-orientation to psychological capital at the level of p=0.096, and the standard path coefficient (β=-0.10) of meaning in life to academic performance at the level of p=0.274 are not significant. In examining the multiple indirect paths, the bootstrap results showed that the upper and lower bounds in all multiple indirect paths did not exceed zero, and as a result, all multiple indirect paths were significant.

In order to compare the causal relationship between the research variables in the two groups of students, according to the type of school, the multi-group analysis method was utilized. Therefore, to compare the models, two general models with unlimited structural weights and another with restricted weights were analyzed. In the unlimited model, the fit indices including x^2=310.04, df=136 and p≤0.001, the ratio of the chi-square to the degree of freedom (normalized chi-square index)=(x^2/df) 2.28, the comparative fit index (CFI=0.89), the goodness-of-fit index (GFI=0.86) and the root mean square error of approximation (RMSEA=0.068) indicate a moderate fit.

The result showed that the standardized path coefficient of psychological sense of school membership and meaning in life was both positive and significant in normal students (β=0.72, p < 0.001) and in gifted students (β=0.71, p=0.021). The standardized path coefficient of psychological sense of school membership and psychological capital was both positive and significant in normal students (β=0.59, p < 0.001) and in gifted students (β=0.71, p < 0.001). The standardized path coefficient of conversation-orientation and meaning in life was positive and significant in normal students (β=0.22, p=0.05) however not significant in gifted students (β=0.19, p=0.167). The standardized path coefficient of conversation-orientation and psychological capital was positive and significant in normal students (β=0.27, p=0.003) however not significant in gifted students (β=0.06, p=0.585). The standardized path coefficient of conformity-orientation and meaning in life was not significant in normal students (β=0.08, p=0.407) and in gifted students (β=0.03, p=0.797). The standardized path coefficient of conformity-orientation and psychological capital was not significant in normal students (β=0.07, p=0.404) and in gifted students (β=0.11, p=0.244). The standardized path coefficient of meaning in life and flourishing was positive and significant in both normal students (β=0.42, p < 0.001) and gifted students (β=0.64, p=0.019). The standardized path coefficient of meaning in life and academic performance was positive and insignificant in normal students (β=0.19, p=0.163) and negative and insignificant in gifted students (β=-0.19, p=0.193). The standardized path coefficient of psychological capital and flourishing was both positive and significant in normal students (β=0.53, p < 0.001) and in gifted students (β=0.30, p=0.003), and the standardized path coefficient of psychological capital and academic performance was both positive and significant in normal students (β=0.26, p=0.031) and in gifted students (β=0.36, p=0.005).

The constrained model was examined assuming equal coefficients for the two groups of students from normal schools and gifted schools. The fit indices of the constrained model were: x^2=329.75, df=146 and p<0.001, the ratio of the chi-square to the degree of freedom (normalized chi-square index) = (x^2/df) 2.26, the comparative fit index (CFI=0.88), the goodness-of-fit index (GFI=0.86), the adjusted goodness-of-fit index (AGFI=0.80), the normalized fit index (NFI=0.81), the incremental fit index (IFI=0.88), the Tucker-Lewis index (TLI=0.85) and the root mean square error of approximation (RMSEA=0.068), which somewhat support the model's fit to the data.

The result showed that the standardized path coefficient of psychological sense of school membership and meaning in life was both positive and significant in normal students (β=0.76, p<0.001) and in gifted students (β=0.68, p<0.001). The standardized path coefficient of psychological sense of school membership and psychological capital was both positive and significant in normal students (β=0.65, p < 0.001) and in gifted students (β=0.66, p < 0.001). The standardized path coefficient of conversation-orientation and meaning in life was both positive and significant in normal students (β=0.21, p=0.012) and in gifted students (β=0.22, p=0.012). The standardized path coefficients of conversation-orientation and psychological capital were both positive and significant in normal students (β=0.14, p=0.025) and in gifted students (β=0.17, p= 0.025). The standardized path coefficients of conformity-orientation and meaning in life were not both significant in normal students (β=0.08, p=0.317) and in gifted students (β=0.07, p=0.317). The standardized path coefficients of conformity-orientation and psychological capital were not both significant in normal students (β=0.10, p=0.115) and in gifted students (β=0.10, p=0.115). The standardized path coefficients of meaning in life and flourishing were both positive and significant in normal students (β=0.52, p < 0.001) and in gifted students (β=0.52, p < 0.001). The standardized path coefficients of meaning in life and academic performance were both negative and insignificant in normal students (β=-0.06, p=0.301) and in gifted students (β=-0.12, p=0.301). The standardized path coefficients of psychological capital and flourishing were both positive and significant in normal students (β=0.45, p<0.001) and in gifted students (β=0.40, p< 0.001), and the standardized path coefficients of psychological capital and academic performance were both positive and significant in normal students (β=0.23, p < 0.001) and in gifted students (β=0.43, p < 0.001).

If the difference in chi-square (in the unconstrained and constrained models) shows a significant difference, it can be concluded that the model structure is different in the two groups. Table 4 compares the fit indices of the unrestricted and restricted models in the two groups.

Table 4. Fit indices of unconstrained and constrained models

Models	x^2	df	GFI	CFI	RMSEA	Δx^2	Δdf
total sample	169.34	67	0.92	0.93	0.075	19.71	10
unconstrained model	310.04	136	0.86	0.89	0.068		
constrained model	329.75	146	0.86	0.88	0.067		

The contents of Table 4 show that the difference in the chi-square in the unconstrained model and the constrained model is 19.71 and its degree of freedom is 10, which indicates that the difference between the two groups is not significant at the p=0.05 level because the critical value of the chi-square in statistics books for a degree of freedom of 10 at the 0.05 level is 18.307, which the obtained difference, i.e. 19.71, is greater than it. Therefore, the hypothesis of a difference between the two groups is not confirmed. An examination of the critical ratios for the differences between the parameters showed that the critical ratio of all paths is less than the critical value of 1.96, the difference between any of the paths is not structurally significant in the two graphs of students in normal schools and students in gifted schools.

Discussion

The aim of the present study was to determine the causal relationship between psychological sense of school membership and family communication patterns (conversation-orientation and conformity-orientation) with flourishing and academic performance with the mediating role of meaning in life and psychological capital in female students of gifted and normal high schools. The results showed that there is a positive and significant relationship between psychological sense of school membership and meaning in life. This result is consistent with the research of Zhang et al. (2018), Lambert et al. (2013), Bapieri et al. (2019) and Ahmadi et al. (2016) . All of these researchers considered close relationships to be a significant source of meaning in life. From the perspective of terror management theory, being a member of a larger community or group can represent a source of “symbolic immortality” and help to reveal one’s existential meaning

(Greenberg & Kosloff, 2008). In the classroom, teachers can encourage active student participation and foster students' personal responsibility, initiative, interaction with others, and self-esteem by creating opportunities for participation in the classroom, school, home, and community. Teachers can do this by empowering personal choice and autonomy in various educational activities, as well as by setting meaningful goals that arise from intrinsic motivation and are inspired by individual interests, values, and strengths (Schreiber, 2015).

The results showed that there is a positive and significant relationship between the psychological sense of school membership and psychological capital. This result is consistent with the research of Sulimani-Aidan and Melkman (2022), Sebastian et al. (2021) and Garavand et al. (2021). In explaining this finding, it can be said that, after home, school is the most significant place where students live and it plays a significant role in the formation of students' values, norms, and social opportunities. School is a significant source for securing students' attachment, and the teacher's teaching style, positive classroom and school atmosphere, teacher leadership style, school encouragement and punishment, and extracurricular activities create positive student motivation towards school and, in addition to gaining an independent personality, it furthermore has positive academic outcomes (Sadeghi & Beyranvand, 2017).

In addition, the results showed that there is a positive and significant relationship between the conversation-orientation and meaning in life. This result is consistent with the research of Fabella (2022) and Liu et al. (2022). In explaining this finding, it can be said that in most research conducted on the meaning of life, the first source of meaning in life is social relationships, and the significant role of human relationships, namely interaction with family, friends, and emotional partners, has been emphasized. Communication with family has shown greater correlation with having a purpose and meaning in life compared to communication with friends (Shakibafard & Chalmeh, 2023). Therefore, the more the family provides a coherent, supportive environment with free interactions for expressing ideas and opinions, the better children can act in finding meaning and a path for their future goals.

Also, the results showed that there is a positive and significant relationship between the conversation-orientation and psychological capital. This result is consistent with the research of Mashalpoure Fard (2020), Zarei et al. (2013) and Naderi et al. (2018). In explaining this finding, it can be said that when parents establish quality relationships with their children, they furthermore

provide a safe network that allows children to actively explore their environment. This safe network puts them in a better position to persevere in pursuing academic goals (i.e., hope), make the necessary effort to complete academic assignments (i.e., self-efficacy), successfully overcome difficulties and issues that arise (i.e., resilience), and create positive attributions about success (i.e., optimism) (Carmona-Halty, 2020).

The finding also showed that there is no significant relationship between the conformity-orientation and meaning in life. This result is inconsistent with the research of Huang et al. (2022), Shakibafard and Chalmeh (2023) and Talebzadeh Shushtari et al. (2016). In explaining this finding, it can be said that people can find meaning in life from various sources such as relationships, values, personal interests, and helping others. Conformity-orientation does not necessarily conflict with all of these sources and may even be utilized as a tool to create social connections and strengthen values. On the other hand, the importance of conformity for different people varies. Some people have a greater tendency towards conformity and seek purpose in their lives from other sources. Shakibafard and Chalmeh (2023) showed in their study that none of the communication patterns (conversation-orientation and conformity-orientation) were able to predict the presence of meaning. In the case of search of meaning, the strongest predictor was the conversation-orientation.

Also, the results showed that there is no significant relationship between conformity-orientation and psychological capital. This result is inconsistent with the research of Rashidi et al. (2017), Naderi et al. (2018) and Mirzaei and Ashrafi (2011). In explaining this result, it can be said that people have many individual differences in their reactions to environmental conditions. Some people may furthermore have high psychological capital in families with high conformity-orientation, or variables such as age, gender, parental education level, and economic status may be influential in this relationship. Furthermore, cross-cultural differences between collectivist and individualist societies are furthermore significant, and given that Iran has a more or less collectivist culture, there is probably a greater tendency towards conformity-orientation and it may even be considered a cause of family cohesion.

Furthermore, the results showed that there is a positive and significant relationship between meaning in life and flourishing. This result is consistent with the research of Kumar (2023), Guo and Wang (2023), Stefer (2022) and Beik and Aminimanesh (2024). In explaining this finding,

Maslow (1971) believed that a person's humanity is complete when he moves towards self-actualization. People who have successful purposeful-activities link those activities to larger goals. Finding the meaning in life requires believing in the existence of a greater force in the world to plan the goals of life to achieve and move towards it. For this purpose, the person will utilize his superior abilities to approach perfection and flourishing is formed in this path. In fact, on the way to achieving the larger goal, the person achieves all his goals in life (Martos et al. 2010).

There is no significant relationship between meaning in life and academic performance. This result is inconsistent with the findings of the studies of Kılınç and Uzun (2020), Pizzolato et al. (2011), Taheri et al. (2018) and Mansouri and Goshnigani (2016). Purposefulness in life is considered the most significant motivating factor for behavior, and academic effort and performance are no exception to this rule. This feeling is associated with self-awareness and self-efficacy, which makes an individual feel that they have control over their life and can influence it. This feeling leads to their success by giving direction to their efforts (Delle Fave, 2011). Therefore, it is expected that there is a direct relationship between meaning in life and academic performance, however the results of some studies, in line with the results of this study, did not confirm this relationship. Piri (2016) found a significant relationship between meaning in life and academic performance in her research, however no significant direct relationship was found within the model between these two variables. Karen (2019) did not find a direct relationship between meaning in life and academic performance in her study of freshmen; however, she found that this relationship was positively and significantly mediated by university adjustment. Therefore, it seems that the relationship between these two variables when examined in the model is not a direct relationship and that variable(s) mediate this relationship. For example, other factors such as learning style, socioeconomic conditions, intrinsic motivation, etc. can affect academic performance and overshadow the relationship between meaning in life and academic performance. On the other hand, since the measurement error of latent variables is furthermore calculated in AMOS software, more realistic results are obtained, and the value obtained through SPSS software may change when using AMOS software.

The results showed that there is a positive and significant relationship between psychological capital and flourishing. This result is consistent with the research of Saleh Hassan et al. (2024), Ho and Chan (2022), Reuck (2019) and hakkak (2022). In domestic studies, no research was found

that examined the relationship between the psychological capital variable as a general variable and the flourishing variable; rather, these studies examined the relationship between one or two components of psychological capital and flourishing simultaneously. The components of psychological capital, self-efficacy, hope, resilience, and optimism, are significant factors in improving the level of flourishing in students because they can predict motivational behaviors in students (Nekoei et al., 2024). People who have a higher sense of self-efficacy feel better about themselves by being aware of their desired capabilities, and this feeling provides motivation for individuals' efforts and success, which lays the foundation for their flourishing (Asl Dehghan et al., 2021).

In addition, the results showed that there is a positive and significant relationship between psychological capital and academic performance. This result is consistent with the findings of Liu and Huang (2022), Onivehu (2020) and Khosravi et al. (2023). Saeed and Murad (2015) found a positive and significant relationship between psychological capital and academic performance of students at Abdanan University of Applied Sciences. Researchers have confirmed the idea that the four components of psychological capital create a second-order structure that allows a student to overcome difficulties and uncertainty (Luthans et al, 2012; Daspit et al. 2015) and the interaction between these psychological capabilities creates a synergistic motivational effect that enables a student to maintain his/her motivation to achieve learning goals and outcomes (Huang & Luthans 2015; Harms et al. 2018), According to the findings, it can be concluded that psychological capital can enhance individuals' performance in all aspects of life, including academic performance by providing self-awareness, flexibility, hope, resilience, awareness, problem-solving ability, and creating a holistic view of life, experiences, and events (Rahimi, 2017).

Finally, in the context of differences between students in normal schools and gifted schools, the results of the multi-group analysis showed that the structural relationship model between the two groups was similar. In this regard, no direct research was observed with which the results could be compared. The results of the present study indicate that the main underlying structure and theoretical causal mechanisms explaining flourishing and academic performance in these two groups of students follow similar principles. One reason for the structural similarity of the relationships between the multiple variables of the study in these two groups may be that personality traits can affect situational and contextual elements. According to the interactionism

theory and Buss (2009) idea, personality traits shape an individual's sense of the environment. In fact, it is the personality traits and characteristics of individuals that determine how they interpret objective situations.

The limitations of this study are as follow: the utilize of the questionnaire as a data collection tool may bias students' responses. The conduct of this study in the city of Dezful, for cultural reasons, makes it prudent to generalise the results to other cities. Furthermore, due to the specific policies of some schools, the management of the gifted school did not allow the researcher to distribute the questionnaires. However, the researcher emphasized the careful implementation of these questionnaires through some teachers and administrators. It is suggested that researchers consider the role of other cognitive variables involved in flourishing and academic performance in reviewing and revalidating the research model and expand the proposed model. Given that the psychological sense of school membership affects student's meaning in life and psychological capital, teachers are advised to provide opportunities for positive interactions between students in the form of collaborative groups, class discussions, or joint projects, and furthermore to provide an environment in which students can express their opinions and feelings without fear of judgment. Given that the family conversation-orientation affects the meaning of life and the psychological capital of children, parents are advised to commit to effective communication and dedicate the necessary time and energy to this. Create a safe and non-judgmental space at home consequently that children can easily express their feelings and needs. Moreover, parents are advised to actively and carefully listen to their children's conversations in family interactions and show that they care about their opinions and feelings. Given the impact of meaning in life on student flourishing, teachers are advised to help create an environment in which every student feels valued by recognizing and responding to psychological needs such as autonomy, competence, and relatedness, and respecting individual differences. Given that psychological capital has an impact on students' academic growth and performance, it is suggested that educational planners consider group counseling sessions, educational programs, or strategies to enhance the components of psychological capital in students.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Shahid Chamran University of Ahvaz.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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