

The Effect of Meaning in Life on College Students' Loneliness: A Serial Mediation Effect Model

Lihua Zhao^{1,*}, Yangen Zhou²

¹Taizhou College, Nanjing Normal University, Taizhou, China

²Normal College, Changshu Institute of Technology, Suzhou, China

*Corresponding author: 1175265201@qq.com

Abstract: Based on questionnaire method, 1298 college students were recruited to participate in the study to investigate the effect of meaning in life on loneliness of college students, and the chain mediating role of forgiveness and hope. The results show that: (1) there is a significant negative correlation between sense of meaning of life and loneliness of college students; (2) forgiveness and hope play a mediating role between sense of meaning of life and loneliness of college students; (3) forgiveness and hope play a chain mediating effect between sense of meaning of life and loneliness of college students.

Keywords: Meaning in life; Loneliness; Forgiveness; Hope; Chain mediating role

1. Introduction

Loneliness is an important topic in the field of personality psychology and mental health, which is considered as a modern "epidemic" and has an important impact on health [1,2]. Loneliness is a kind of desire for social interaction and a negative emotion due to the gap with the actual level, often accompanied by isolation, helplessness, loneliness, depression and other adverse emotional reactions [3-5]. From the perspective of loneliness in the past, Luhmann et al. Research shows that loneliness experience will reach its peak at the age of 20, and the other two peaks are at the age of 50 and 80 respectively. In fact, lonely physical examination is a common negative emotional experience among college students. Therefore, studying the formation mechanism of loneliness in college students is of great significance for preventing and eliminating loneliness in college students and promoting their mental health [6].

The sense of meaning of life refers to the cognition of the value of life, the cognition of the goal and task of life [7]. Sense of meaning of life affects the development of College Students' physical and mental health. It plays an important role in improving interpersonal relationship, enhancing physical health, improving individual subjective well-being and life satisfaction, treating mental diseases and preventing suicide and other serious psychological or behavioral disorders [8]. The higher the level of individual sense of life meaning, the stronger the social adaptability, and the less likely to feel lonely [9]. Therefore, this study hypothesizes that sense of meaning of life can effectively predict loneliness of college students. Although previous studies have shown that the sense of meaning of life affects the generation of College Students' loneliness, the discussion on its internal mechanism is very limited. Literature review found that as an important psychological trait, forgiveness and hope are affected by the sense of meaning of life, and both have predictive power for loneliness. In view of this, from the perspective of positive psychological quality, this study introduces two variables of forgiveness and hope to discuss the influence mechanism of sense of meaning of life on loneliness of college students.

The psychological research of forgiveness has developed rapidly and is considered to represent the basic direction of the development of positive psychology in the 21st century [10,11]. Due to the complexity of the concept of forgiveness, there are different emphases in defining forgiveness, but most people think that forgiveness is the process of individual pro-social transformation [12]. Forgiveness can repair interpersonal relationship, reduce anxiety and anger, and reduce individual loneliness. At the same time, individuals with high sense of life tend to adopt more mature coping styles when facing interpersonal conflict situations, and are more likely to produce forgiveness behavior [13]. For this reason, we hypothesize that the forgiveness variable mediates the relationship between life meaning and loneliness in this study.

Hope, as one of the important qualities of positive psychology, refers to an individual's emotional

experience of the purpose, significance, value and unlimited possibilities of life^[14]. Individuals with high level of hope will experience more well-being, and are less prone to loneliness and depression. Hope is often associated with the sense of meaning of life, and there is a significant positive correlation between hope and the sense of meaning of life^[15]. Individuals with a high sense of life significance have a more positive and definite understanding of life, feel their own value, and will strive to pursue the future value, so that individuals have hope for the future. Forgiveness is pro social in nature, which helps individuals to maintain positive psychology, feel the beauty of life and life, and enhance the generation of individual hope. People with a high sense of meaning in life have better interpersonal relationships, are more likely to forgive others, and have a higher level of hope. Therefore, this study hypothesizes that forgiveness and hope play a chain mediating role between College Students' sense of meaning in life and loneliness.

2. Methods

2.1. Participants

Taking college students as the research object, the method of random selection and class test is used to select the subjects. A total of 1306 questionnaires were sent out, and 1306 were returned, of which 8 were invalid, and 1298 were effective, with an effective rate of 99.39%. There were 234 boys (18.03%) and 1064 girls (81.97%).

2.2. Life sense scale

The revised Chinese life sense scale was used. The scale is divided into two dimensions: sense of having meaning and sense of seeking meaning, with 10 items. The scale was scored in 7 levels, from "1" (completely inconsistent) to "7" (exactly consistent). The higher the score, the stronger the sense of life meaning. The Cronbach's α coefficient was 0.87.

2.3. Loneliness Scale

The revised Chinese Loneliness Scale was used. There are 20 items in the scale, which are scored by 4 grades, from "1" (never) to "4" (always). The higher the score is, the stronger the loneliness is. The Cronbach's α coefficient of the scale was 0.79. In this study, Cronbach's α coefficient was 0.89.

2.4. Forgiveness Scale

The quality table of lenient prepared by Berry et al. was used^[16]. There are 10 items in the scale, which are scored by five levels, from "1" (completely inconsistent) to "5" (fully consistent). A higher score indicates a higher degree of forgiveness. The Cronbach's α coefficient was 0.81.

2.5. Hope scale

The Chinese college students hope scale was used. The scale is divided into two dimensions: path thinking and dynamic thinking, with 12 items, of which 4 items are not scored, which are used to transfer attention. The scale was scored in four levels, from "1" (totally incorrect) to "4" (totally correct). The higher the score, the higher the level of hope. In this study, Cronbach's α coefficient was 0.86.

2.6. Data analysis

In the preliminary statistical analysis, the descriptive statistics in SPSS 22.0 was used to calculate the mean score and standard deviation of the variables, and Pearson correlation was used to calculate the correlation coefficient among the variables; the process program (Hayes and Preacher mediation procedure) written by Hayes & Preacher was used to analyze the multiple mediating effects. The nonparametric percentile bootstrap interval of bias correction (bootstrap samples 1000) is provided. The regression or path coefficient is significant and the 95% confidence interval does not contain 0 as the basis to judge whether the mediating effect exists. Amos 21.0 was used to establish the mediating model and provide the path coefficient.

3. Results

3.1. Common method deviation test

Harman one-factor test is used to test for deviations from common methods. Exploratory analysis was conducted on four variables: sense of meaning of life, loneliness, forgiveness and hope, and non-rotating factor analysis was tested. The results show that there are 8 factors with eigenvalues greater than 1, and the variation of the first factor is 24.085, which is less than 40% of the critical standard, indicating that the common method deviation does not have much impact on the results of this study.

3.2. Descriptive statistics and correlation test between variables

The average, standard deviation and Pearson correlation coefficient of sense of meaning of life, forgiveness, hope and loneliness are shown in Table 1. It can be seen from table 1 that sense of meaning of life, forgiveness and hope are significantly positively correlated ($P < 0.01$), while sense of meaning of life, hope and forgiveness are significantly negatively correlated with loneliness ($P < 0.01$).

Table 1: Mean value, standard deviation and correlation coefficient of factors ($n=1298$).

Factor	Mean	SD	Life meaning	Forgiveness	Hope	Aloneness
Life meaning	49.237	8.639	1			
Forgiveness	30.097	5.241	0.208**	1		
Hope	24.264	3.505	0.585**	0.306**	1	
Aloneness	44.808	8.418	-0.389**	-0.369**	-0.602**	1

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

3.3. The relationship between sense of life meaning and loneliness: multiple mediating effects

Multiple mediating effects were analyzed by the nonparametric percentile Bootstrap method for deviation correction. The regression analysis showed that the sense of loneliness was independent variable of life ($P=0.3722$, $t=-0.2319$). Spss22.0 software was used to execute process program to analyze parallel multiple mediating effects. In the mediating model, loneliness is the dependent variable, meaning of life is the independent variable, forgiveness and hope are the mediating variables. Table 2 shows that the regression coefficients are significant, and the bootstrap interval of each regression coefficient is not 0. The sense of meaning of life has a positive predictive effect on forgiveness and hope, and forgiveness and hope have a negative predictive effect on loneliness. When only sense of meaning of life was used to predict loneliness, the total effect was statistically significant ($C=-0.389$, $t=-15.215$, $p < 0.001$). When forgiveness and hope were added, the direct effect C' of sense of meaning of life on loneliness decreased significantly compared with the total effect C' ($C'=-0.048$, $t=-1.804$, $t=-1.804$, $P < 0.001$). The bootstrapped confidence interval $[-0.100, 0.004]$ contains zero. It shows that forgiveness and hope play a complete mediating role in the prediction of loneliness by the sense of meaning of life. Specifically, the mediating effect of sense of meaning of life forgiveness loneliness is -0.042 ($A1 \times B1$), bootstrap interval is $[-0.059, -0.027]$; the mediating effect of sense of meaning of life hope loneliness is -0.299 ($A2 \times B2$), bootstrap interval is $[-0.342, -0.257]$, and the mediating effect does not contain 0, indicating the existence of parallel multiple mediating effects.

Table 2: Analysis of the parallel mediating effects of sense of life meaning and hope between social support and forgiveness ($n=1298$).

Dependent factors	Independent factors		B	SE	t	p	LLCI	ULCI
Aloneness	Life meaning	c	-0.389	0.025	-15.215	0.000	-0.440	-0.339
Forgiveness	Life meaning	a1	0.208	0.027	7.667	0.000	0.155	0.262
Hope	Life meaning	a2	0.585	0.023	25.961	0.000	0.541	0.629
Aloneness	Life meaning	c'	-0.048	0.027	-1.804	0.071	-0.100	0.048
	Forgiveness	b1	-0.202	0.023	-8.945	0.000	-0.247	-0.158
	Hope	b2	0.512	0.027	-18.761	0.000	-0.565	-0.458
		Effect		BootSE		BootLLCI		BootULCI
Indirect effect		a1×b1	-0.042	0.008		-0.059		-0.027
		a2×b2	-0.299	0.022		-0.342		-0.257

Note: effect is indirect effect; boot se is bootstrapped standard error; 95% boot confidence interval excluding zero indicates significant indirect effect.

Amos 21.0 was used for multiple mediation analysis. In order to consider the measurement error and chain mediation, and further explore the multiple mediating effects of forgiveness and hope between the sense of meaning of life and loneliness, amos21.0 is used to establish a multiple mediating model and analyze it. The standardized coefficient is shown in Figure 1. The bootstrap interval does not contain 0. In the model, the direct path effect of loneliness of meaning of life is -0.05 , the effect of two parallel mediators is -0.042 (meaning of life forgiveness loneliness) and 0.275 (meaning of life hope loneliness), and the effect of one chain mediator is 0.020 (meaning of life forgiveness hope loneliness) Hope - loneliness). The effect of chain mediation is greater than the direct effect of loneliness, which indicates that it is more reasonable to join the chain mediation, indicating that the influence of loneliness on the sense of meaning of life is largely explained by forgiveness and hope.

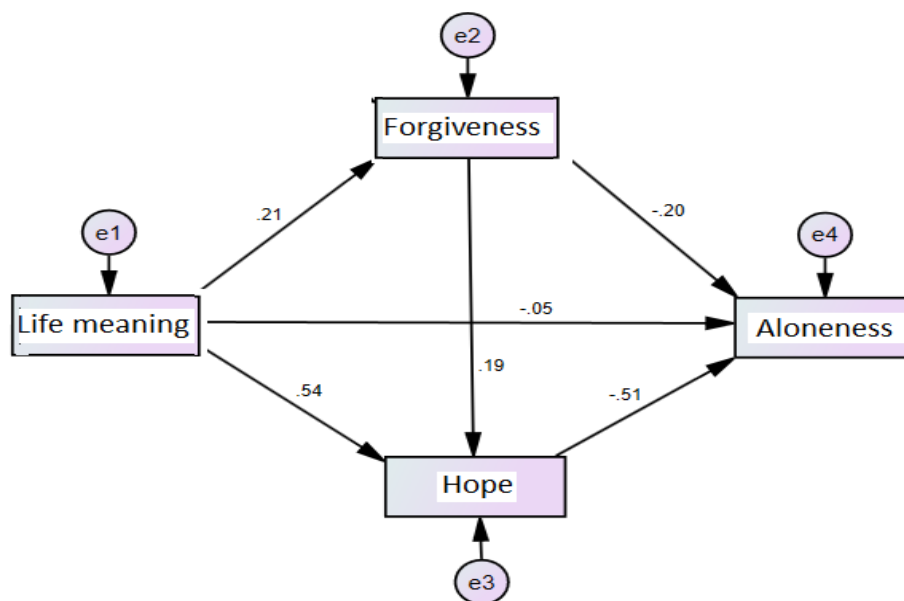


Figure 1: Standardized model of multiple mediating effects of forgiveness and hope between sense of life meaning and loneliness.

4. Discussion

4.1. The relationship between sense of meaning of life and loneliness of College Students

The results show that there is a significant positive correlation between meaning of life and loneliness of college students. The higher the sense of meaning of life, the lower the loneliness of college students. The lack of sense of meaning of life is a vital reason for individual loneliness. College students with higher sense of meaning of life are full of optimistic and positive attitude towards life, and often do not feel lonely^[17]. The pursuit of the sense of life meaning is a kind of nature and basic need. Once an individual loses the sense of life meaning, he will feel empty and lonely. In order to meet the basic needs of life, individuals will have a positive and higher level of sense of life meaning, and then reduce their loneliness experience^[18]. According to the meaning therapy theory of Frank, the lack of sense of meaning of life is due to the sense of emptiness and helplessness in life. The higher the cognitive level of the meaning of life, the less likely an individual is to feel lonely. A clear life goal and sense of the meaning of life can directly affect college students' attitude towards study, work and life, and become their spiritual pillar, help them cope with setbacks and loneliness in college life, and maintain their mental health.

4.2. The mediating role of forgiveness

This study shows that the sense of meaning of life not only has a direct negative impact on College Students' loneliness, but also has a not active impact on College Students' loneliness through the mediation of forgiveness. This shows that college students with a strong sense of meaning in life have a higher level of forgiveness and less loneliness. Once college students understand the meaning of life, they will actively improve interpersonal relationship and reduce the level of loneliness in the process of interpersonal communication. Forgiveness is pro social in nature, and can alleviate the negative emotions

of individuals, thus reducing the generation of loneliness. When encountering offense, college students with higher forgiveness level can get rid of negative emotions in time, improve interpersonal relationship and reduce loneliness^[19], which is consistent with the content of achievement stage in Enright's forgiveness development theory^[20]. In the achievement stage, the individual realizes the value and significance of forgiveness, sets up a new life goal, experiences the reduction of negative emotions, is willing to establish a good relationship with others, and reduces loneliness. Therefore, individuals with a high sense of life significance pursue their own value, have a deeper understanding of life and show more enthusiasm for others. Such college students often deal with interpersonal conflicts with forgiveness when they are hurt by others, and take forgiveness as a coping strategy to solve bad emotions in problems, so as to reduce their own boredom, anger and other bad emotions, and avoid the generation of loneliness.

4.3. The mediating role of hope

This study further shows that in addition to forgiveness, hope also partly mediates the impact of sense of meaning of life on College Students' loneliness, that is, the stronger the sense of meaning of life, the higher the level of hope, the less loneliness. Individuals with a high sense of life significance often feel their own value, and strive to pursue the future value, and have a positive and definite understanding of their own life, so as to enhance their cognition and belief to achieve their life goals, and improve their hope. Personal experience with a high sense of life significance can deeply realize the value of current existence and the significance for future development, so as to establish a self-belief system towards the goal, help individuals establish plans and goals, and obtain hope. Frank believes that when individuals understand the relationship between the world around them and constantly create value, they will find the meaning of life. In the process of seeking the meaning of life, individuals experience self-improvement and self-realization, so as to enhance hope. Individuals with high hopes tend to cope with stressful events in life through their own efforts and positive actions, with healthier behaviors, more happiness and less loneliness and depression^[21].

4.4. Chain mediation

This study found that forgiveness and hope are closely related, and they constitute the middle link of sense of meaning of life forgiveness hope loneliness, which has a chain mediating effect in the process of sense of meaning of life Influencing College Students' loneliness. This shows that forgiveness and hope play a mediating role between the sense of meaning of life and loneliness of college students in addition to their independence. Forgiveness can also indirectly affect loneliness of college students by influencing hope. The chain mediating effect of forgiveness and hope is the integration and expansion of the research on forgiveness and hope and hope and loneliness. It connects forgiveness and hope with the sense of meaning of life, and reveals the internal psychological mechanism of loneliness of college students more comprehensively and deeply. There is no future without forgiveness. Forgiveness can help to resolve inner resentment, make individuals have more positive emotions and mentality, feel the beauty of life, be full of hope for the future, and show less social withdrawal behavior.

5. Conclusion

1) There is a significant negative correlation between sense of meaning of life and loneliness of college students; 2) Forgiveness and hope play a mediating role between the sense of meaning of life and loneliness of college students, respectively; 3) Forgiveness and hope play a chain mediating role between the sense of meaning of life and loneliness of college students.

References

- [1] Bound Alberti F. This "modern epidemic": Loneliness as an emotion cluster and a neglected subject in the history of emotions [J]. *Emotion Review*, 2018, 10(3): 242-54.
- [2] Yangen Z, Xianmin L, Lihua Z, et al. The relationship between self-esteem and forgiveness of college students: a moderating mediating model [J]. *A psychological review*, 2020, 40(02): 188-92.
- [3] Vanhalst J, Goossens L, Luyckx K, et al. The development of loneliness from mid-to late adolescence: Trajectory classes, personality traits, and psychosocial functioning [J]. *Journal of adolescence*, 2013, 36(6): 1305-12.
- [4] Chu L, Fung H H. Age Differences in the Emotional and Motivational Experience of Loneliness: A Time-Sampling Study [M]. *Innov Aging*. 2018 Nov 11; 2(Suppl 1):760. doi: 10.1093/geroni/igy023.2810.

e Collection 2018 Nov.

[5] Danneel S, Bijttebier P, Bastin M, et al. Loneliness, social anxiety, and depressive symptoms in adolescence: examining their distinctiveness through factor analysis [J]. *Journal of Child and Family Studies*, 2019, 28: 1326-36.

[6] Qualter P, Vanhalst J, Harris R, et al. Loneliness across the life span [J]. *Perspectives on Psychological Science*, 2015, 10(2): 250-64.

[7] Costin V, Vignoles V L. Meaning is about mattering: Evaluating coherence, purpose, and existential mattering as precursors of meaning in life judgments [J]. *Journal of Personality and Social Psychology*, 2020, 118(4): 864.

[8] Dulaney E S, Graupmann V, Grant K E, et al. Taking on the stress-depression link: Meaning as a resource in adolescence [J]. *Journal of adolescence*, 2018, 65: 39-49.

[9] Yangen Z, Pengcheng Z, Yan Z. Multiple mediating effects of internal control attribution and empathy on the relationship between agreeableness and forgiveness in college students [J]. *Chinese Journal of mental health*, 2018, 32(07): 620-4.

[10] Emmons R A, Paloutzian R F. The psychology of religion [J]. *Annual review of psychology*, 2003, 54(1): 377-402.

[11] Yangen Z, Jiamei L, Ping Z, et al. An experimental study on the effect of College Students' situational evaluation on the occurrence of state forgiveness [J]. *Chinese Journal of mental health*, 2017, 31(09): 723-7.

[12] Riek B M, Mania E W. The antecedents and consequences of interpersonal forgiveness: A meta-analytic review [J]. *Personal Relationships*, 2012, 19(2): 304-25.

[13] Samios C, Raatjes B, Ash J, et al. Meaning in life following intimate partner psychological aggression: The roles of self-kindness, positive reframing, and growth [J]. *Journal of interpersonal violence*, 2020, 35(7-8): 1567-86.

[14] Tucker R P, Wingate L R, O'keefe V M, et al. Rumination and suicidal ideation: The moderating roles of hope and optimism [J]. *Personality and Individual Differences*, 2013, 55(5): 606-11.

[15] Feldman D B, Snyder C R. Hope and the meaningful life: Theoretical and empirical associations between goal-directed thinking and life meaning [J]. *Journal of social and clinical psychology*, 2005, 24(3): 401-21.

[16] Berry J W, Worthington Jr E L, Parrott Iii L, et al. Dispositional forgivingness: Development and construct validity of the Transgression Narrative Test of Forgivingness (TNTF) [J]. *Personality and Social Psychology Bulletin*, 2001, 27(10): 1277-90.

[17] Krause N. Thought suppression and meaning in life: A longitudinal investigation [J]. *The International Journal of Aging and Human Development*, 2007, 64(1): 67-82.

[18] Reker G T, Wong P T. Aging as an individual process: Toward a theory of personal meaning. In J. E. Birren, V. L. Bengtson (Eds.). *Emergent theories of aging* [M]. Springer Publishing Company; 1988: 214-246.

[19] Randa R, Reyns B W, Nobles M R. Measuring the effects of limited and persistent school bullying victimization: Repeat victimization, fear, and adaptive behaviors [J]. *Journal of interpersonal violence*, 2019, 34(2): 392-415.

[20] Enright R D. The moral development of forgiveness [J]. *Reaching out: Caring, altruism, and prosocial behavior Moral development: A compendium*, 1994, 7: 219-48.

[21] Xiaofan P, Yuanyuan Z, Wei B, et al. Self-esteem generated by hope: the internal mechanism of children's psychological quality reducing social anxiety [J]. *Journal of Guizhou Normal University (Natural Science Edition)*, 2020, 38(02): 108-13.