Career Decision-making Self-efficacy and Life Satisfaction of Medical Students in China

Lei TANG[1,a], Chang-hong ZHANG[1,b], Ruo-yun YIN[1,c], Zhao-ya FAN[1,d] and Fan ZHANG[1,e,*]

[1]School of Public Health and Management, Research Center for Medicine and Social Development, The Collaborative Innovation Center for Social Risk Governance in Health, Chongqing Medical University, Chongqing, China

[a]307709424@qq.com, [b]734815315@qq.com, [c]18779124821@163.com, [d]584646321@qq.com, [e]epicqmu@163.com

*Corresponding author

Keywords: Career Decision-making Self-efficacy, Life Satisfaction, Medical Students.

Abstract: Background: The number of university graduates in China is maintain a high level and each year has increased substantially. Its growth rate is too fast leading to a serious oversupply of supply and demand. The national employment situation is becoming more and more severe. College students' worry and stress about their future career also increase. This study aims to investigate the relationship between career decision-making self-efficacy (CDMSE) and life satisfaction (LS) of medical students in China. **Methods:** A cross-sectional design was used involving two medical schools in Chongqing, China. Through the combination of online and offline methods, questionnaires were randomly distributed among two medical colleges in Chongqing. The questionnaire included self-made general data, the CDMSE Scale for University Students compiled by Peng and Long, and life satisfaction items in the life Happiness index scale compiled by Campbell. **Results:** The score of CDMSE for medical students is 3.18±0.73, which belongs to the upper middle. The overall score of CDMSE and the five dimensions were significantly different in gender, education, household registration and whether the only child ($P < 0.05$). The LS score of the respondents was 5.08±1.30, which belonged to the upper middle level. LS was positively correlated with CDMSE and each dimension. The following factors were the influencing factors of CDMSE of medical college students: gender ($\beta=8.929$, $P<0.001$), educational background ($\beta=0.126$, $P<0.001$), household registration ($\beta=0.051$, $P=0.002$), only child or not ($\beta=-0.035$, $P=0.028$) and life satisfaction ($\beta=0.240$, $P<0.001$). **Conclusions:** The life satisfaction of medical college students is significantly correlated with the self-efficacy of career decision-making. Gender, educational, household registration, whether they are only children, and life satisfaction are the influencing factors of CDMSE of medical college students. This finding may provide evidence and direction for future pertinent interventions.

1. Introduction

With the continuous development of China's higher education, there has been large-scale expansions of major enrollment in colleges and universities. In 2019, the number of Chinese college graduates has reached to 8.6 million. The employment problem of college students may exist for a long time. In school life, the long-term stress of college students will also damage their health [1].

Career decision-making is used to describe a person's confidence in his ability to effectively participate in career decision-making tasks and activities. It is a kind of cognitive process of career formed into a specific time according to his environment and his outlook on life, which will constantly update and develop with the transfer of space and life experience [2]. Self-efficacy is a person's belief in the successful implementation of specific actions in the future. Self-efficacy plays a key role in career decision-making, representing the decision-makers' self-assessment or confidence in the ability necessary to complete various tasks, and judgment of self-problem solving and other abilities [3]. Taylor and Betz proposed career decision-making self-efficacy (CDMSE) and it’s five dimensions.

Happiness is the ability of people to frequently experience positive emotions and subjective

  DOI: 10.25236/ehmit.2021.010

satisfaction with life [4]. As a cognitive factor, life satisfaction is often regarded as a key indicator of subjective well-being. Previous studies have found that self-efficacy is a determinant of adolescent well-being and is categorized as a basic human need [5, 6]. In a German study of college students, self-efficacy was found to mediate and stable link between personality and subjective well-being [7].

This study aims to investigate the relationship between life satisfaction and CDMSE, which may provide evidence for future pertinent interventions.

2. Method

2.1 Design and Participants

A cross-sectional design was used involving two medical schools in Chongqing, China. Through the combination of online and offline methods, questionnaires were randomly distributed among two medical colleges in Chongqing. A total of 4230 questionnaires were collected, and 4181 valid questionnaires were obtained, with an effective rate of 98.84%. There were 1569 (37.5%) male students, 2612 (62.5%) female students; 1082 (25.9%) junior college students, 2386 (57.1%) undergraduate students and 713 (17.0%) graduate students; 1811 (43.3%) students with rural household registration, 2370 (56.7%) with urban household registration; 1755 (42.0%) with only child and 2426 (58.0%) with non-only child.

2.2. Instruments

The general data of demography was self-made question item. The item of life satisfaction was one item of the life well-being index scale compiled by Campbell et al [8]. To investigate the subjects' satisfaction with life at present, the 7-point score was adopted. The higher the score was, the higher the individual's life satisfaction was. The CDMSE Scale for University Students compiled by Yongxin Peng and Lirong Long was adopted. It was modified and screened on the basis of CDMSE scale compiled by Betz and Taylor in 1983 and revised by psychologist Betz of Ohio University in 1994. In the sample of 1000 Chinese college students, the internal consistency was 0.937 and the test-retest reliability was 0.656 [9]. There were 39 items in 5 dimensions, including 6 items of self-evaluation, 9 items of information collection, 9 items of goal selection, 8 items of planning and 7 items of problem solving. The 5-point Likert scale was used to score. And a score of 1-5 representing a change from complete lack of confidence to complete confidence. The higher the score, the better the CDMSE.

2.3. Data Analysis

SPSS 25.0 was used for data collection and analysis. The count data were expressed by the number of samples and percentage, normal measurement data were described by $\overline{X} \pm S$, and non-normal ones were represented by median and upper and lower quartiles. Pearson or Spearman correlation coefficient were used to determine the relationship between CDMSE and life satisfaction score. Multiple linear regression was used to analyze the influencing factors of CDMSE. $P<0.05$ was statistically significant.

3. Results

3.1. Descriptive Statistics of Career Decision-Making Self-Efficacy

The average score of overall CDMSE was 3.18. Overall and each dimension belonged to medium level. As shown in Table 1, in terms of skewness, all five dimensions showed a negative skewness distribution, and the negative skewness of self-evaluation and planning was higher than other dimensions. In terms of kurtosis, self-evaluation, information collection and problem solving were negative, while the remaining two dimensions were positive. Therefore, the data of the whole and each dimension was non-normal distribution.

3.2. Demographic Differences of CDMSE Scores in Different Dimensions

The overall score of CDMSE and the five dimensions were significantly different in gender,

education, household registration and whether the only child (P<0.05), as shown in Table 2. After pairwise comparison, there were significant differences in CDMSE and scores in each dimension between graduate students and associate degree's students (P<0.001). There were significant differences in CDMSE and scores in each dimension between postgraduates and undergraduates (P<0.001). There were no differences in CDMSE and scores in each dimension between associate degree's students and undergraduates (P>0.05).

Table 1 Description Statistics of Five Dimensions of CDMSE.

	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
CDMSE	3.18	0.73	-0.047	0.038	0.144	0.076
Self-appraisal	3.25	0.89	-0.131	0.038	-0.328	0.076
Gathering information	3.11	0.78	-0.035	0.038	-0.083	0.076
Goal selection	3.13	0.76	-0.050	0.038	0.119	0.076
Planning	3.30	0.80	-0.166	0.038	0.040	0.076
Problem solving	3.16	0.81	-0.017	0.038	-0.063	0.076

Table 2 Comparison of Demographic Characteristics of CDMSE in Different Dimensions.

	Gender		Education			household registration		Only child	
	Male	Female	Associate degree	Undergraduate	Postgraduate	Rural	Town	Yes	No
N	1569	2612	1082	2386	713	1811	2370	1755	2426
CDMSE	3.23 (2.87,3.79)	3.08 (2.67,3.64)	3.03 (2.64,3.64)	3.00 (2.56,3.67)	3.13 (2.75,3.88)	3.08 (2.67,3.59)	3.19 (2.79,3.77)	3.21 (2.82,3.77)	3.10 (2.67,3.64)
	-6.89***			72.03***		-5.20***		-4.95***	
Self-appraisal	3.33 (2.83,4.00)	3.17 (2.67,4.00)	3.13 (2.69,3.64)	3.00 (2.56,3.56)	3.30 (2.88,3.88)	3.17 (2.67,3.83)	3.33 (2.67,4.00)	3.33 (2.83,4.00)	3.17 (2.67,3.83)
	-4.18***			59.75***		-5.50***		-5.12***	
Gathering information	3.11 (2.78,3.78)	3.00 (2.56,3.67)	3.36 (3.00,3.88)	3.33 (3.00,3.89)	3.50 (3.00,4.00)	3.00 (2.56,3.56)	3.11 (2.67,3.78)	3.11 (2.67,3.78)	3.00 (2.56,3.67)
	-6.63***			81.42***		-3.88***		-3.41***	
Goal selection	3.22 (2.78,3.78)	3.00 (2.56,3.56)	3.00 (2.50,3.83)	3.00 (2.56,3.56)	3.00 (2.57,3.71)	3.00 (2.67,3.56)	3.11 (2.67,3.67)	3.11 (2.78,3.67)	3.00 (2.67,3.67)
	-6.77***			69.69***		-3.73***		-4.30***	
Planning	3.38 (3.00,4.00)	3.25 (2.75,3.88)	3.17 (2.67,4.00)	3.11 (2.67,3.67)	3.00 (2.57,3.71)	3.13 (2.75,3.88)	3.78 (2.88,4.00)	3.38 (3.00,4.00)	3.25 (2.75,3.88)
	-5.05***			42.62***		-5.95***		-5.31***	
Problem solving	3.86 (2.86,3.86)	3.00 (2.57,3.71)	3.50 (3.00,4.00)	3.33 (3.00,3.89)	3.29 (3.00,4.00)	3.00 (2.57,3.57)	3.14 (2.71,3.86)	3.14 (2.71,3. 86)	3.00 (2.57,3. 71)
	-7.71***			48.50***		-5.09***		-4.84***	

Note: *** means P < 0.001

Table 3 Linear Regression Analysis of Influencing Factors of CDMSE (N=4181).

	Unstandardized Coefficients		Standardized Coefficients	95.0% Confidence Interval for B		t	Sig.
	B	Std. Error	Beta	Lower Bound	Upper Bound		
Female	-6.591	0.877	-0.112	-8.310	-4.871	-7.515	<0.001***
Undergraduate	-0.212	1.011	-0.004	-2.194	1.771	-0.209	0.834
Postgraduate	9.561	1.325	0.126	6.964	12.158	7.217	<0.001***
Town	2.947	0.931	0.051	1.122	4.772	3.166	0.002**
Non-only child	-2.037	0.928	-0.035	-3.857	-0.218	-2.196	0.028*
Life Satisfaction	5.291	0.325	0.240	4.654	5.929	16.269	<0.001***

Note: CDMSE's R^2=0.093; F=71.115; P<0.001; Variable assignment: gender (male = 1; female = 2) educational background (Associate degree = 1; undergraduate = 2; postgraduate = 3); household registration (rural = 1; urban = 2); only child (yes = 1; no = 2); life satisfaction as measurement data, entered with original data. * means P < 0.05, ** means P < 0.01, *** means P < 0.001.

3.3. Correlation between CDMSE and Life Satisfaction

The life satisfaction score of the respondents was 5.08±1.30, which belonged to the upper middle level. 65 (1.6%) had "1", 86 (2.1%) had "2", 311 (7.4%) had "3", 697 (16.7%) had "4", 1394 (33.3%) had "5", 1072 (25.6%) had "6" and 556 (13.3%) had "7". Life satisfaction was positively correlated with CDMSE and each dimension. Spearman correlation coefficients were 0.269, 0.243, 0.263, 0.239,

0.236 and 0.231, respectively. The higher the life satisfaction was, the better the CDMSE was.

3.4. Multiple Linear Regression Analysis on Influencing Factors of CDMAE

Multiple linear regression showed that gender, educational background, household registration, only child or not and life satisfaction were the influencing factors of CDMSE of medical college students, shown in table 3. Male students had higher CDMSE than female students (β=8.929, P<0.001). The CDMSE of postgraduates was higher than that of junior college students (β=0.126, P<0.001). There was no significant difference in the scores of CDMSE between undergraduate students and junior college students. The results showed that the CDMSE of urban students was higher than that of rural students (β=0.051, P=0.002). The CDMSE of non-only child was lower than that of only child (β=-0.035, P=0.028). The higher the life satisfaction, the higher the CDMSE (β=0.240, P<0.001).

4. Discussion

This study investigates students from two medical colleges in Chongqing, China. The score of CDMSE belongs to the upper middle. Among the five dimensions, the scores of self-evaluation and planning dimension are higher than those of information collection, goal selection and problem solving. This may be due to the lack of relevant information, the difficulty of obtaining information or the lack of training and exercise of ability, students' CDMSE may be influenced. From the perspective of information acquisition and publication, medical schools can provide more job-hunting information, improve students' information awareness rate, and increase job demand skills and training.

There are significant differences in the five dimensions of CDMSE between different genders, and regression analysis also shows that gender is the influencing factor of CDMSE. Previous studies at home and abroad on gender differences have had inconsistent results. Ran et al. found that the self-efficacy of career decision-making of male students is slightly higher than that of female students, but the difference is not statistically significant [10]. Wang et al. pointed out that male students scored significantly higher than female students in the three dimensions of goal selection, information collection and planning, while there is no significant difference in self-evaluation and problem solving [11]. Epstein N et al. pointed out that female doctoral graduates have lower research self-efficacy beliefs and academic career intentions in the medical field [12]. The reason may be that this survey mainly studies the students of medical colleges and universities. The social and parents have a stereotype of gender and their expectations of different gender students are different. At the annual school recruiting meeting, gender discrimination still exists in most employing units. It makes college students who have not yet entered the stage of employment have lower confidence in their work, thus reducing their CDMSE.

There are significant differences in the scores of CDMSE and each dimension among students of different educational levels. The CDMSE in graduate students is significantly higher than that in undergraduate and associate degree’s students. Master students have stronger confidence in whether they can successfully complete various tasks in the process of career decision-making. There are no differences in the scores of CDMSE and each dimension between specialist students and undergraduate students. There is little difference between professional decision-making self-efficacy of college students and undergraduates. The reason may be that medical colleges pay more attention to the cultivation of associate degree’s students' skills during the period of school, and they have a more peaceful attitude and more confidence in dealing with various work. As can be seen from the increasing number of postgraduate entrance exams nowadays, many undergraduates choose to take the postgraduate exam directly after graduation in order to continue to improve their academic qualifications and abilities, which is also better to build confidence for future employment.

There are statistically significant differences in the scores of CDMSE and each dimension among students of different household registers. Students with urban household registration score significantly higher than those with rural household registration. Because the birth family is different from the environment raised from childhood, urban students tend to have a wider world, more

confident and decisive in finding a satisfactory job or using family resources to find a good job. Rural students are unable to cope with the high-cost investment in job-hunting because they know the insufficiency of their own conditions and backgrounds, there is too much pressure on themselves. The relatively backward employment concepts and high career expectations may also lead to low self-efficacy in career decision-making of rural college students [13]. The score of CDMSE of only-child students is significantly higher than that of non-only-child students. Research reveals that parenting practices have been implicated in the development of adolescents' CDMSE [14]. And career specific parental practices may yield stronger relations with adolescents' career development than general parenting practices [15]. Parents can influence their children's self-efficacy in collecting career-related information and seeking job opportunities, such as those adolescents who receive parental assistance career plans show higher sense of career determination and less difficulty in career decision-making [16]. The only child in the family will also be more concerned than the non-only child, parents will focus most of their energy and attention on the growth and future development of their children, to provide them with resources as far as possible. Zhang et al. pointed out that correlations among parental career support, interference, lack of engagement, emotional autonomy, behavioral autonomy, and adolescents' CDMSE are significant and in the expected directions [17]. The only child can develop the awareness and ability to plan the future and win competition earlier, compared with the non-only child in the formulation of career planning has a stronger self-effectiveness.

Improving life satisfaction can improve the quality of life, physical and mental health and happiness [18]. In this survey, the life satisfaction of medical college students is better. The results of correlation analysis show that life satisfaction is significantly correlated with career decision-making self-efficacy. This is consistent with the conclusion of the positive correlation between self-efficacy and life satisfaction in previous literatures [19]. The higher the life satisfaction of medical college students, the better their career decision-making self-efficacy. It suggests that school employment education can start from ordinary life, cultivate students' interests and abilities in all aspects, increase students' motivation to learn and create, enrich school life during their spare time, establish self-confidence in life and future, acquire the ability and motivation to solve future problems, so as to improve the self-efficacy of career decision-making.

This study also has some limitations. First, the study only analyzed the five factors that may affect the CDMSE of medical college students such as gender, educational, household registration only child and life satisfaction. The influence of grade factors on CDMSE is not analyzed in depth. In addition, the survey data comes from the self-assessment of the respondents, and there may be some cases that deliberately avoid or exaggerated for personal reasons. Because CDMSE will change with the changes of college students' learning and living environment and experience, it is necessary to further explore the performance of CDMSE in medical college students through longitudinal tracking research.

5. Conclusion

This study found that there are significant differences in CDMSE among medical students in terms of gender, educational background, household registration and whether they have only one child or not. The life satisfaction of medical college students is significantly correlated with the self-efficacy of career decision-making, and multiple regression analysis shows that gender, educational, household registration, whether they are only children, and life satisfaction are the influencing factors of CDMSE of medical college students.

Acknowledgement

Funding of this study was provided by Chongqing Science and Technology Commission, grant number cstc2017jcyjAX0004.

References

[1] Schneiderman N, Ironson G, Siegel SD. Stress and health: psychological, behavioral, and biological determinants. Annu Rev Clin Psychol. 2005;1(1):607-628. doi:10.1146/annurev.clinpsy.1.102803.144141.

[2] Taylor KM, Betz NE. Applications of self-efficacy theory to the understanding and treatment of career indecision. J Vocat Behav. 1983;22(1):63-81. doi:10.1016/0001-8791(83)90006-4.

[3] Bandura A. Self-efficacy: toward a unifying theory of behavioral change. Psychol Rev. 1977;84(2):191-215. doi: 10.1037//0033-295x.84.2.191.

[4] Loton DJ, Waters LE, The mediating effect of self-efficacy in the connections between strength-based parenting, happiness and psychological distress in teens. Front Psychol. 2017;8:1707. doi:10.3389/fpsyg.2017.01707.

[5] Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. Am Psychol. 2000;55(1):68-78. doi:10.1037/0003-066x.55.1.68.

[6] Caprara GV, Steca P, Gerbino M, Pacielloi M, Vecchio GM. Looking for adolescents' well-being: self-efficacy beliefs as determinants of positive thinking and happiness. Epidemiol Psichiatr Soc. 2006;15(1):30-43. doi:10.1017/s1121189x00002013.

[7] Strobel M, Tumasjan A, Spörrle M. Be yourself, believe in yourself, and be happy: self-efficacy as a mediator between personality factors and subjective well-being. Scand J Psychol. 2011;52(1):43-8. doi: 10.1111/j.1467-9450.2010.00826.x.

[8] Campbell A. Subjective measures of well-being. Am Psychol. 1976;31(2):117-124. doi:10.1037/0003-066x.31.2.117.

[9] Peng YX, Long LR. Study on the Scale of Career Decision-making Self-efficacy for University Students. Applied psychology. 2001(02):38-43. doi:10.3969/j.issn.1006-6020.2001.02.007.

[10] Ran HQ, Guo C, Wu Z. Relationship between Career Decision-Making Self-Efficacy and Personality of College Students. Chinese Journal of Health Psychology. 2012;20(03):421-24.

[11] Wang HY, Zhang N, Liu YF. Career decision-making self-efficacy of college students and its relationship with emotional intelligence. Psychological research. 2010;3(03):68-72.

[12] Epstein N, Fischer MR. Academic career intentions in the life sciences: Can research self-efficacy beliefs explain low numbers of aspiring physician and female scientists? PLOS ONE. 2017;12(9):e184543. doi:10.1371/journal.pone.0184543.

[13] Shen SG. Psychological problems and educational strategies of rural college students' career choice. Chinese Rural Health Service Administration. 2009;29(06):407-409.

[14] Sovet L, Metz AJ. Parenting styles and career decision-making among French and Korean adolescents. J Vocat Behav. 2014;84(3):345-355. doi:10.1016/j.jvb.2014.02.002.

[15] Tracey TJG, Lent RW, Brown SD, Soresi S, Nota L. Adherence to RIASEC structure in relation to career exploration and parenting style: Longitudinal and idiothetic considerations. J Vocat Behav. 2006;69(2):248-261. doi:10.1016/j.jvb.2006.02.001.

[16] Zhang H. A Study on the status of career decision-making self-efficacy of contemporary college students -- A Case study of Suzhou Institute of Science and Technology. China Adult Education. 2012;(04):86-88.

[17] Zhang YC, Zhou N, Cao H, et al. Career-specific parenting practices and career decision-making self-efficacy among Chinese adolescents: The interactive effects of parenting practices and the mediating role of autonomy. Front Psychol. 2019;10:363. doi:10.3389/fpsyg.2019.00363.

[18] Zhao J, Sun HW, Zhao JG, Yang ZH. Influence of personality characteristics on life satisfaction

of medical college students. China Journal of Health Psychology. 2009;17(05):577-579.

[19] Lightsey OR, McGhee R, Ervin A, et al. Self-efficacy for affect regulation as a predictor of future life satisfaction and moderator of the negative affect—life satisfaction relationship. J Happiness Stud. 2013;14(1):1-18. doi:10.1007/s10902-011-9312-4.