ORIGINAL RESEARCH

A Study on the Correlation Between Vocational Self-efficacy and Ego-identity in Midwifery Students

Cui-Ping Li, MD; Lian-Ping He, PhD

ABSTRACT

Context • Undergraduate, professional education in midwifery is essential. Teaching professional knowledge while guiding students to develop positive career values is one of the tasks of midwifery educators. Studies in China have shown that the stronger the ego-identity of students, the stronger their professional identities will be.

Objective • The study intended to investigate the occupational self-efficacy and ego-identity of midwifery students, to analyze the correlation between the two characteristics, and to explore the factors influencing their occupational self-efficacy.

Design • The research team designed a cross-sectional survey.

Setting • The study took place at Taizhou University in Taizhou, Zhejiang, China.

Participants • Participants were 232 full-time, undergraduate, midwifery students at the university. Selection of participants occurred between November 2018 and December 2018.

Outcome Measures • The cross-sectional survey included a demographic questionnaire, a career self-efficacy questionnaire, and a ego-identity status.

Results • For the students: (1) the mean career self-efficacy of the midwifery students was 3.34 ± 0.58, at a moderate level; (2) the mean overall ego-identity score was 47.44 ± 5.92; 189 (81.47%) of students were those who hadn't yet formed a ego-identity (identity-diffusion status). The multiple gradual regression showed that present self-engagement; per-capita, monthly household income; and midwifery as the first choice of major were the main factors affecting the self-efficacy of midwifery students.

Conclusions • The occupational self-efficacy and ego-identity of midwifery students urgently need improvement, and ego-identity has a predictive value for occupational self-efficacy. (*Altern Ther Health Med.* 2022;28(7):153-157).

Cui-Ping Li, MD, lecturer, and **Lian-Ping He, PhD,** lecturer, School of Medicine, Taizhou University, Jiaojiang, Zhejiang, China.

Corresponding author: Lian-Ping He, PhD
E-mail: lianpinghe@tzc.edu.cn

Professional self-efficacy refers to individuals' beliefs that their education has been worthwhile, that they have made the correct choice of occupation, and that they will be able to continue working in that occupation, reflecting a belief in their competence in a career-related task or activity.[1] Professional self-efficacy is an important factor that can have a direct impact on health care workers' job performance and has an effect on both workplace and psychosocial wellbeing.[2] People with a high level of self-efficacy will be more confident in their careers and more willing to work hard to overcome them in their careers. The difficulty of having more opportunities to achieve career success.[3] Ego-identity is an individual's integration of the past, present, and future and of the self with others and society, indicating a continuous, independent, and unchanging consciousness.[4] Modern psychology typically interprets an individual's ego-identity as a set of characteristics that distinguish that person from another and defines ego-identity itself as a current state, namely the current perception of oneself at a certain stage in life.[5]

The service object of midwife is pregnant woman, clinical characteristic is psychological disorder, be afraid of childbirth, be afraid of discomfort, worry about foetus sex and foetus malformation and so on, be in a mental state of anxiety and fear. This requires midwives to have good psychological qualities, extensive obstetrics knowledge, and solid midwifery skills, and undergraduate, professional education in midwifery is essential. Teaching professional knowledge while guiding students to develop positive career values is one of the tasks of midwifery educators.

In addition to specific professional education, midwifery education should also pay attention to the construction of the school environment, including holding a midwifery cultural festival, conducting professional midwifery keynote speeches, drama performances and other social practice activities, such as free diagnosis, The development of a positive relationship between teachers and students, and the promotion of school spirit and class atmosphere. To enrich students' understanding of the midwifery profession and enhance their recognition of this major[6]. In addition, midwifery educators should monitor social-media usage because it can affect student' physical, psychological, social, and spiritual health.[7]

Two studies in China[8,9] have shown that the stronger the ego-identity of students, the stronger their professional identities will be. When students are confused about their current lives, trouble adapting to university life, not getting along well with roommates, not knowing whether to join student organizations, and not clear enough about their future learning and life goals, midwifery educators and future midwifery administrators have a serious problem. College is an important period for the formation and development of ego-identity,[10,11] and active ego-identity is essential for students' physical and mental health and for the development of a sound personality.

Studies on occupational self-efficacy and ego-identity among midwifery students have rarely been reported. Therefore, the current study intended to explore whether a correlation exists between the vocational self-efficacy and the ego-identity of midwifery students and to determine what the influencing factors of occupational ego-efficacy are, to provide support for improving the professional vocational effectiveness of midwifery students.

METHODS

Participants

The research team designed a cross-sectional survey. The study took place at Taizhou University in Taizhou, Zhejiang, China. Two hundred and forty undergraduate students major in midwifery were included in this study at the university. Selection of participants occurred between November 2018 and December 2018. The subjects were divided into four groups by school year and polled at different times. Subjects were informed of the purpose and significance of the survey, filled in the questionnaire, and received the questionnaire on the spot.

Potential participants were included if they: (1) were full-time undergraduate students in the major of midwifery; (2) gave informed consent to participate in the study.

The research team informed the students of the study's purpose and promised protection of privacy, and the students provided written informed consent. The school's ethics committee approved the study's protocols.

Procedures

Data collection. The research team distributed 240 questionnaires before classes, and the respondents filled them in independently. The research objects were divided into four groups according to the grade. Each group filled in the questionnaire in the designated classroom at the designated time. The research team gathered questionnaires on the spot and sorted them out.

Outcome Measures. The research team administered: (1) Demographic questionnaire, (2) Career self-efficacy questionnaire[12,13] and (3) Ego-identity status.[13]

Outcome Measures

Self-developed demographic questionnaire Participants completed a general questionnaire that included demographic questions: (1) where did the student live before attending the school, student source area (SSA); (2) what was the student's first choice of major (FCM); (3) was the student an only child (OC); (4) to what school societies did the student belong (JS); (5) what was the participant's grade in college (Grade); (6) did the student have a part-time job (PT); (7) what was the education level of the student's father (PE); (8) what was the education level of the student's mothers (ME); and (9) what was the family's per capita monthly income (MIC).

Career self-efficacy questionnaire[12] The questionnaire was compiled by Hao Yufang in 2011, was widely used by Chinese medical and health students, and its credibility and validity are good. This scale has six dimensions that include 27 items about professional attitudes and beliefs (PAB), problem-solving skills (PS), gathering (collection of) career information and planning skills (GCIPS), occupational (career) perception (OP), professional (career) value (PV), and career choice (CC). Each item uses the 5-point rating scale, from 1 = very inconsistent to 5 = very consistent, with a total score of 135 points. The PAB consists of items 25, 21, 17, 26, 19, 14, 7, 27 (8 items, total score 40); PS consists of items 22, 18, 13, 8, 12, 9 (6 items, total score 30); GCIPS consists of items 20, 23, 15, 5, 4 (5 items, total score 25); OP consists of 11, 1, 2 items (3 items, total score 15); PV consists of 3, 10 and 6 items (3 items, total score 15); CC consists of 24, 16 items (2 items, total score 10). Because the number of entries differs, each dimension scores differently, and the average score needs to be calculated for comparison, with a score of 5 indicating high professional self-efficacy, a score of 4 indicating fairly high professional self-efficacy, a score of 3 indicating moderate professional self-efficacy, a score of 2 indicating fairly low professional self-efficacy, and a score of 1 indicating low professional self-efficacy. A high score indicates that the respondent's professional self-efficacy was high. The scale Cronbach's alpha coefficient of the scale is 0.767.

Ego-identity status[13] The scale was translated and modified by Zhang Risheng in 2000 on the basis of the scale of Japanese researcher Atsushi Kato. The scale has a total of 12 items from A to L, and the score of each item is obtained using the 6-point scoring method, and then the score of 3 dimensions is computed. This scale includes three dimensions: present self-engagement (PSE), past crises (PC), and self-invested desires for the future (SDF). PSE refers to the level of investment an individual has in order to achieve the goal

of learning the self, achieving the self, or achieving his goal. PC is when a person starts to question whether a series of social achievements he has achieved in the past, such as social status, wealth, and prestige, have their existential significance, and begins to actively explore their own broader path in life. SDF refers to a person's great enthusiasm for exploring the future path of life. Each dimension has 12 items, using a six-level scoring method, from 1=not at all to 6=completely. The scale uses a formula PSE= A-B + C-D + 14; PC= H-G + F-E + 14; SDF= I-J + K-L + 14 to calculate each dimension's score, and then combines the scores to measure six kinds of ego-identity status, including identity-formation status, identity formation - authority acceptance of the middle position, authority-acceptance status, active delay of status, identity diffusion-active postponement of the intermediate position, and identity-diffusion status, indicating that the respondent hadn't yet formed a ego-identity. PSE≥ 20 and PC≥ 20 for identity-formation status; PSE≥20 and15≤PC≤19 for the identity formation - authority acceptance of the middle position; PSE≥20 and PC ≤14 for authority-acceptance status; PSE ≤ 19 and SDF ≥ 20 for active delay of status; PSE ≤12 and SDF ≤14 for identity diffusion-active postponement of the intermediate position; PSE ≤12 not SDF≤14 for identity-diffusion status. The scale of Cronbach's alpha coefficient is 0.714.

Statistical Analysis

The research team analyzed the data using SPSS23.0 statistical software (Inc., Chicago, IL, USA). Descriptive statistics (means, standard deviations) were calculated for all continuous variables, and frequencies and percentages were generated for the noncontinuous variables.

The occupational self-efficacy and general correlation analysis used Pearson correlation analysis. Multiple, stepwise regression analysis was used to explore the main influencing factors of vocational self-efficacy of midwifery students. $P < .05$ was considered to be statistically significant.

To explore the factors influencing vocational self-efficacy of midwifery students, the research team used occupational self-efficacy as the dependent variable (Y1) and first choice (X1), grade (X2), monthly household income per capita (X3), and present self-engagement (X4) as the predictors to perform a stepwise regression analysis. The three predictors of self-engagement, per capita monthly income and first choice entered the regression equation one by one, that is, Y1= 72 + 1.01X4 + 1.59X3 + 4.19X1, with a multivariate correlation coefficient of 0.36. The joint explanatory variable was 0.13, with a joint prediction for the variables self-engagement, per-capita monthly income, and first-choice of occupational self-efficacy being 13%.

RESULTS

Participants

Of the 240 undergraduate students receiving questionnaires, 232 students (96.67%), all women, completed valid questionnaires, and their data were analyzed.

Table 1. Demographics for Midwifery Students (N = 232).

Project	Group	Number of People n (%)
Student source area	City	37 (15.95)
	Countryside	195 (84.05)
First-choice major	Yes	72 (31.03)
	No	160 (68.97)
Only child	Yes	60 (25.86)
	No	172 (74.14)
Join a school society	Yes	181 (78.02)
	No	51 (21.98)
Grade	Freshman year	60 (25.86)
	Sophomore year	63 (27.16)
	Junior year	52 (22.41)
	Senior year	57 (24.57)
Part-time job	Yes	161 (69.40)
	No	71 (30.60)
Father's education	Junior high school and below	157 (67.67)
	High school or secondary school	64 (27.59)
	College degree or above	11 (4.74)
Mother's education	Junior high school and below	180 (77.59)
	High school or secondary school	44 (18.97)
	College degree or above	8 (3.45)
Family's monthly income per capita (RMB)	1000 and below	21 (9.05)
	1001-2000	27 (11.64)
	2001-3000	56 (24.14)
	3001-4000	63 (27.16))
	4001 and above	65 (28.02)

Abbreviations: RMB, renminbi, the official currency of China.

Table 2. Occupational Self-efficacy of Midwifery Students. This questionnaire has six dimensions that include 27 items about professional attitudes and beliefs (8 items, total score 40), problem-solving skills (6 items, total score 30), gathering (collection of) career information and planning skills (5 items, total score 25), occupational (career) perception (3 items, total score 15), professional (career) value (3 items, total score 15), and career choice (2 items, total score 10). The total possible score for all dimensions is 135. Because the number of entries differs, each dimension scores differently, and the average score needs to be calculated for comparison.

Characteristic	Scores Mean ± SD	Mean
PAB	25.73 ± 5.28	3.31 ± 0.76
PS	20.33 ± 3.46	3.48 ± 0.67
GCIPS	15.54 ± 3.39	3.10 ± 0.77
OP	9.18 ± 1.93	3.13 ± 0.72
PV	9.97 ± 1.98	3.43 ± 0.73
CC	6.95 ± 1.44	3.56 ± 0.78
TPSS	87.32 ± 12.71	3.34 ± 0.58

Abbreviations: CC, career choice; GCIPS, gathering career information and planning skills; OP, occupational perception; PAB, professional attitudes and beliefs; PS, problem-solving skills; PV, professional value; TPSS, total professional self-efficacy score.

Table 3. Correlation Between Vocational Self-efficacy, General Situation, and Ego-identity of Midwifery Students

Characteristic	PAB r	PS r	GCIPS r	OP r	PV r	CC r	TPSS r
SSA	-0.07	0.03	0.03	-0.07	0.05	-0.08	-0.03
FCM	0.18[a]	0.21[a]	0.16[b]	0.04	0.11	0.02	0.19[a]
OC	-0.10	-0.03	-0.03	0.01	-0.10	0.09	-0.06
JS	0.07	0.08	0.05	0.10	0.03	-0.02	0.08
Grade	0.20[a]	0.16[b]	0.16[b]	0.09	0.01	0.13	0.19[a]
PT	-0.09	-0.07	-0.05	0.09	0.02	0.02	-0.05
PE	-0.03	0.08	0.07	0.02	0.07	0.01	0.05
ME	-0.04	0.09	0.05	-0.10	0.01	-0.06	0.01
MIC	0.15[b]	0.11	0.21[a]	0.08	0.12	0.05	0.20[a]
PSE	0.27[a]	0.48[a]	0.19[a]	-0.29[a]	0.18[b]	0.10	0.29[a]
PC	-0.02	0.19[a]	0.04	-0.24[a]	-0.09	0.15[b]	0.03
SDF	0.14[b]	0.27[a]	0.08	-0.37[a]	0.04	0.08	0.10

[a]$P < .01$, for the correlation between the two variables
[b]$P < .05$, for the correlation between the two variables

Abbreviations: CC, career choice; FCM, first-choice major; GCIPS, gathering career information and planning skills; JS, join a society; ME, maternal education; MIC, monthly income per capita in RMB; PSE, present self-engagement; OC, only child; OP, occupational perception; PAB, professional attitudes and beliefs; PC, past crises; PE, parent education; PS, problem-solving skills; PT, part-time; PV, professional value; RMB, renminbi, the official currency of China; SDF, self-invested desire in the future; SSA, student source area; TPSS, total professional self-efficacy score.

Table 1 shows the baseline characteristics of participants. Of the 232 midwifery students: (1) 37 were from cities (15.95%), and 195 from the countryside (84.05%), (2) 72 initially majored in midwifery (31.03%), and 160 students are not their first choice to midwifery to midwifery (68.97); (3) 60 were only children (25.86%) and 172 had siblings (74.14%); and (4) 181 were in school societies (78.02%), and 51 didn't join any societies (21.98%).

Of the 232 undergraduates, 60 were freshman year (25.86%), 63 in the sophomore year (27.16%), 52 in the junior year (22.41%), and 57 in the senior year (24.57%). Of the 232 students in the program, 69.40% were already working part-time.

With respect to the father's education: (1) 157 (67.67%) had less than a high-school education; (2) 64 (27.59%) had graduatedfrom high school or other secondary school, and (3) 11 (4.74%) had a college degree or above. With respect to the mother's education: (1) 180 (77.59%) had less than a high-school education; (2) 44 (18.97%) had graduated from high school or other secondary school; and (3) 8 (3.45%) had a college degree or above.

For per-capita, monthly household income: (1) 21 (9.05%) had ≤1000 renminbi (RMB), the official currency of China; (2) 27 (11.64%) had 1001-2000 RMB; (3) 56 (24.14%) had 2001-3000 RMB; (4) 63 (27.16%) had 3001-4000 RMB; and (5) 65 (28.02%) had ≥4001 RMB.

Occupational Self-efficacy Scores

In the occupational self-efficacy assessment, students scored the highest on career choices and the worst on their ability to gather career information and plan (Table 2).

Ego-identity Scores

The mean scores for ego-identity were: (1) present self-engagement, 16.18 ± 3.11; (2) past crises, 15.87 ± 2.46; (3) self-invested desires for the future, 15.50 ± 2.16; and (4) overall, 47.44 ± 5.92 (data not shown). The numbers and percentages of participants calculated for the six self-identity statuses are: (1) 10 (4.31%) for identity-formation, (2) 15 (6.47%) for identity formation - authority acceptance of the middle position, (3) 5 (2.16%) for authority acceptance, (4) 0 (0%) for active delay, (5) 13 (5.60%) identity diffusion–active postponement of the intermediate position, and (6) 189 (81.47%) for identity diffusion

Correlation: Self-efficacy, Demographics, and Ego-identity

Table 3 shows that having midwifery as the first choice for a major (FCM) was positively correlated with scores related to career effectiveness—for professional attitudes and beliefs (PAB), with $P < .01$ and $r = 0.18$; problem-solving skills (PS), with $P < .01$ and $r = 0.21$; gathering of career information and planning skills (GCIPS), with $P < .05$ and $r = 0.16$; and total professional self-efficacy (TPSS), with $P < .01$ and $r = 0.19$.

The scores for present self-engagement (PSE), past crises (PC), and self-invested desire for the future (SDF) were negatively correlated with occupational perception (OP), with $r = 0.29$, 0.24, and 0.37, respectively ($P < .01$).

Grade was positively correlated with scores for professional attitudes and beliefs (PAB), with $P < .01$ and $r = 0.20$; problem-solving skills (PS), with $P < .05$ and $r = 0.16$; gathering career information and planning skills (GCIPS), with $P < .05$ and $r = 0.16$; and total professional self-efficacy (TPSS), with $P < .01$ and $r = 0.19$.

Monthly income per capita was positively correlated with scores for professional attitudes and beliefs (PAB), with $P < .05$ and $r = 0.15$, gathering of career information and planning skills (GCIPS), with $P < .01$ and $r = 0.21$. and total professional self-efficacy (TPSS), with $P < .01$ and $r = 0.20$.

DISCUSSION

The current study found that the vocational self-efficacy of midwifery students was at a moderate level, with career choice showing the highest scores and occupational perception the lowest. This suggests that undergraduate education in midwifery is weak in terms of an introduction to the profession and career guidance and that schools should provide courses related to career planning. These courses are needed to promote student's formulation of plans for learning and training: to guide students to think positively, to evaluate the particularity of the midwifery profession,

professional values, beliefs and attitudes, and determine future professional behavior to set their career development goals as early as possible.

In addition, school management should plan to conduct career-counseling and skills-development training to help students more effectively and to provide students with professional guidance and assistance to improve their professional effectiveness.

The results of the study show that 81.47% of participants hadn't yet formed a self-identity (identity diffusion). Participants were very confused about their current lives and not clear enough about their future learning and life goals. Students can fail to form a mature self-identity and then are at a loss in forming their own values, positioning themselves for a career, determining their social roles, and developing ideals and beliefs.

Standardizing the network environment on campus and guiding students to use network resources correctly and effectively are problems that educators urgently need to think about and solve.

The regression analysis suggested that a student's current self-investment has a predictive value for the career self-efficacy of midwifery students, and the higher their self-investment, the more they can know what kind of people they are and actively invest in achieving their goals.

Per capita monthly income of the family also has a predictive value, and the higher the income, the stronger is the impact on professional self-efficacy, meaning that students choose their majors due to a sense of achievement and satisfaction in the midwifery work. This also explains why score in the current study for question six on the professional self-efficacy questionnaire was less than three.

Finally, if midwifery is the first choice of major for students, regardless of whether they have enough knowledge of the midwifery profession, they will be more active in the major and the stronger the student's professional self-efficacy will be.

CONCLUSIONS

The occupational self-efficacy and self-identity of midwifery students urgently need improvement, and self-identity has a predictive value for occupational self-efficacy. Midwifery educators and education administrators should pay attention to students' career planning and guide students to face midwifery with a positive attitude, collect information about midwifery, and plan their own midwifery careers. In addition, the school should attach importance to the development of a class style, create a good online-campus environment, and strive to cultivate a high-quality midwife team.

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CONFLICTS OF INTEREST

The authors have no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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