

Personality Traits and Subjective Well-being of Fathers of Preterm and Full-term Infants: A Case Study of A Medical Center in Taiwan

Chia-Shing Wang^{1,2*} and Ruei-Yu Tsai^{3,4}

¹Department of Nursing, National Taiwan University Hospital, Taipei, Taiwan.

²Department of Health, Taipei, Taiwan.

³Department of Nursing, National Taiwan University Hospital, Taipei, Taiwan.

⁴Department of Health, Taipei, Taiwan.

*Correspondence:

Chia-Shing Wang, Department of Nursing, National Taiwan University Hospital, No. 7, Chung-Shan S. Rd., Taipei City 10002, Taiwan, ROC.

Received: 30 April 2021; Accepted: 07 June 2021

Citation: Chia-Shing W, Ruei-Yu T. Personality Traits and Subjective Well-being of Fathers of Preterm and Full-term Infants: A Case Study of a Medical Center in Taiwan. *Nur Primary Care*. 2021; 5(3): 1-8.

ABSTRACT

Background: This study aimed to elucidate whether the demographics and personality traits of fathers, who are considered to be responsible for their families' well-being, influence the fathers' subjective well-being.

Purpose: To investigate the relationship between the personality traits and well-being of fathers of preterm and term infants; and related factors.

Design: Descriptive sampling was used in a cross-sectional study.

Methods: The "Personality Inventory Scale" and "Subjective Well-Being Scale" were administered, which had respective internal consistencies of 0.83 and 0.95.

Results: (1) The two groups reported moderate subjective well-being; (2) there was no significant difference in the overall personality traits between the two groups; (3) In both groups, the fathers' subjective well-being increased with age; (4) In both groups, the core subjective well-being of fathers was higher than that of the noncore family, and their subjective well-being was not significantly affected by the number of children or by family socioeconomic status. In short, in both groups, the fathers' subjective well-being was influenced by their personality, age, and family structure.

Practice implications: Examining issues related to the personality traits of fathers of preterm infants is useful not only in the formulation of care and medical systems, solutions, and strategies for preterm infants but also in understanding family relationships to enhance subjective well-being. The present findings serve as a reference for the development of family-centered, whole-person health care.

Keywords

Fathers of preterm infants, Fathers of full-term infants, Personality traits, Subjective well-being.

Introduction

Adults' life stress is an effective indicator of their ability to care for their families [1]. Although the birth of a new life is joyful and

life transforming, for new fathers, it also constitutes the beginning of major challenges. Preterm infants accounted for roughly 7% to 10% of all newborn infants in Taiwan in 2018; however, preterm infant mortality accounted for 80% of all neonatal mortalities in the same period [2]. In addition to the risk of death, the severity of neonatal complications increases concurrently with prematurity. Parents experience an immense amount of stress stemming from

doubts and uncertainties regarding their family structures and the physiological state of their preterm infants [3]. In particular, fathers involved in caring for their preterm infants experience tremendous physical and mental stress, greatly influencing their subjective well-being.

As social patterns change, parents' roles have gradually converged into a single co-parenting role. Although the pressure involved in and attitudes required for taking care of full-term and preterm infants are different, the mentality is the same. Whether the fathers of preterm infants receive sufficient assistance and support not only influences the future development of the infants but also affects the stable and balanced development of the family. L. L. Lin [4] and Huang, Chiang, Huang, and Hu [5] found that family functions, family relations, and parent-child interactions were the principal factors influencing subjective well-being. C Chen [6], and C. K. Li [7] defined family stress as a type of life stress and conceded that life stress negatively influences subjective well-being. Therefore, the present study assumes that accurate measurement of subjective well-being is crucial. In terms of family development, individuals' perspectives are affected by their personality traits. thus, thinking modes are closely associated with personality traits [8,9]. The literature indicates that personality traits are closely associated with subjective well-being. Therefore, personality traits were included in the scope of this study.

No studies to date have been published in Taiwan on the personality traits and subjective well-being of fathers of preterm infants. Personality traits affect personal behaviors and family management. Therefore, examining issues related to the personality traits of fathers of preterm infants benefits not only the formulation of care and medical systems, solutions, and strategies for preterm infants but also the understanding of family relations. Moreover, whether the demographics and personality traits of fathers affects their subjective well-being is a topic worthy of investigation.

Literature Review

Personality Traits

Definition: *In psychology, personality is a field governing individuals and individual differences. C. J. Wang [10] defined them as the dynamic organizations of individuals' psychological and physical systems. C. S. Lin [11] defined personality traits as the outward expressions of individuals' inner selves. Wu [3] stated that personality traits are based on the interactions between genetic and environmental factors.*

Relevant literature

Glidden, Bamberger, Turek, and Hill found that extroverted personality, occupational status, and subjective well-being scores predicted the behaviors of a number of parents [12]. L. J. Liu indicated that openness, conscientiousness, and agreeableness were positively correlated with interpersonal relationships [13]. Chien found that over 80% of fathers of preterm infants were extroverts and that father–infant attachment increased concurrently with extraversion [14].

Rantanen, Metsäpelto, Feldt, Pulkkinen, and Kokko, analyzed the rank-order stability of the Big Five personality traits and found that neuroticism and extraversion were more stable in men than in women [15]. Individuals' personality traits may differ, even if they have similar demographic variables. X. W. Li found a positive correlation between educational background and average scores in extraversion, agreeableness, and conscientiousness, and a negative correlation between educational background and average score in neuroticism [16]. Later, S. M. Wang and Li proposed similar results [17]. Therefore, four demographic variables were adopted in this study (age, level of education, number of children, and family structure) to explore the differences in the personality traits of fathers of full-term infants and those of preterm infants.

Subjective Well-being

Definition

Socrates stated, “The pursuit of eudaimonia is the ultimate goal and meaning in life. Aristotle also stated, “The pursuit of eudaimonia is the ultimate goal and meaning in life. Subjective well-being is a broad classification that encompasses individuals' emotional responses, their perceived satisfaction with important events, and their overall life satisfaction. Hsiang defined subjective well-being as a series of subjective joyful and pleasurable emotions stemming from a sense of satisfaction and safety [18].

Relevant Literature

It can be classified into the theory of need gratification, judgment theory, trait theory, dynamic equilibrium theory, and associationism [18,19]. C. C. Lin found a positive and direct correlation between gratitude and subjective well-being and a positive and indirect correlation between the two traits that was moderated by social support and response patterns [20]. Chu asserted that the problem-solving and seeking social support dimensions of stress coping positively predicted subjective well-being, and the emotional avoidance dimension negatively predicted subjective well-being [21]. Hsieh found a significant and positive correlation between subjective well-being and social support [22]. family support, emotional support etc, were strong predictors (50% explanatory power) of subjective well-being.

Personality Traits and Subjective Well-being

M. T. Chen and Chen found that mothers of elementary school children with Type A personality traits reported increased levels of parenting stress, family income was significantly correlated with perceived well-being, and the personality traits and parenting stress of mothers with elementary school children might predict their perceived well-being [23]. Wu found a significant and positive correlation between personality traits and subjective well-being [3]. Y. F. Hong found that personality traits affected subjective perception of well-being and that different personality traits directly and indirectly affected teachers' subjective well-being in the workplace [24]. F. Y. Hong found that personality traits affected subjective well-being, with extraversion being the strongest predictor [24]. Jovanovic and Menkveld clearly indicated that neuroticism-anxiety and activity directly affected the affective

component of subjective well-being [25]. Hsueh indicated that extraversion, emotional stability, and conscientiousness significantly influenced subjective well-being [26].

Five demographic variables associated with personality traits were adopted in this study: age, marital status, level of education, number of children, and family structure. In addition, six demographic variables associated with subjective well-being were adopted: age, marital status, level of education, number of children, family structure, and household economy. Children affect parents' adaptation to family stress and subjective well-being. Therefore, it is essential to elucidate the effects of personality traits on subjective well-being.

Paternal Role

Fathers are generally the close relatives that visit preterm infants the most during the first month of their stay in the NICU. The health of the preterm infants and the uncertainty of their condition greatly influence father–infant attachment in the first month after birth [14]. Most studies on fathers of preterm infants have been qualitative research describing their experiences. Fletcher, Perez, Hooper, and Claussen found that the most frequent response is ensuring that fathers are able to cope with the stress of becoming a new parent and demonstrate the skills and knowledge to care for their newborn children [27]. Lindberg, Axelsson, and Öhrling stated that the fathers described their experiences as finding themselves in the midst of something they had never previously reflected on, feeling protective of the mother and the infant, and needing to be understood [28]. Intervention measures during hospitalization to improve fathers' co-caring abilities caused the fathers to become more helpful to the mothers in taking care of preterm infants after discharge, thereby improving family relations.

Traditionally, fathers assumed the role of earners in the family, providing the basic resources for survival. The experiences of men and the environments they grew up in shape personality traits that affect their coping experiences, subjective feelings, and expectations of paternal roles when they become fathers. Therefore, the purpose of this study was to determine the impact of the personality traits of fathers on their subjective well-being [29].

Methodology

Participants

Preterm infants were defined as babies born before 37 weeks of gestation. Participants were recruited from the NICU, neonatal intermediate care nursery (NICN), and postnatal ward of a medical center in northern Taiwan. Fathers of preterm and full-term infants within 5 days of birth were selected to participate in this study. Therefore, the inclusion criteria of this study were (1) fathers of infants staying in the NICU, NICN, or postnatal ward at the time of the study; (2) fathers of infants on any form of respiratory support (excluding endotracheal tubes); (3) Taiwanese citizens who could read Chinese and speak native-level Mandarin or Taiwanese; and (4) fathers who were willing to provide written informed consent.

Cohen and Eisenberg proposed that the within-group reliability of the psychosocial adjustment to illness scale should be between .83 and .86 [30]. Therefore, a multiple regression analysis was conducted using G*Power 3.0.10 to evaluate statistical power. The results showed that seven independent variables (gestation period, infant weight, father's age, level of education, number of children, family structure, and household economy) achieved a power of 80%, α of 0.05, and R of 0.60 and indicated that 104 samples were required. A total of 115 fathers of preterm infants and 120 fathers of full-term infants were recruited. After invalid samples were excluded, 104 fathers of preterm infants and 104 fathers of full-term infants remained. A purposive sampling method and a structured questionnaire were adopted for data collection. The proposal for this study was submitted to and approved by the center's institutional review board (no. 201408009RINA).

Research Tools

Three research tools were adopted according to the results of the literature review and the research objectives. The first was personal demographic data, which consisted of age, level of education, number of children, family structure, household economy, gestation period, and weight. The second was the Five-Factor Personality Inventory (FFPI), which consisted of neuroticism, extraversion, openness, agreeableness, and conscientiousness. The third was the Chinese Happiness Inventory (CHI).

Data Processing

The NEO Personality Inventory (NEO-PI) and CHI were adopted as the measurement tools. The NEO-PI is a version of the FFPI scale proposed by Costa and McCrae [31]. Zhao revised the scale for Taiwanese respondents and simplified the original scale into 25 items evenly distributed among five dimensions, namely neuroticism, extraversion, openness, agreeableness, and conscientiousness [32]. The CHI was proposed by Lu and Shih [33]. It primarily measures subjective perceptions, namely (1) self-esteem gratification (gaining respect from others); (2) interpersonal relationships with family and friends; (3) pursuit of wealth; (4) work achievements; (5) optimism toward life; (6) living better than others; (7) self-control and realization of ideas; (8) happy and positive emotions; and (9) health needs. Constructs (1) to (6) are the sources of subjective well-being for most Chinese people. Based on the nine constructs of subjective well-being, an inventory comprising 10 extremely short items was formulated. A higher overall score denoted a stronger subjective perception of well-being.

Once permission was received to use the scales, they were consolidated into a formal questionnaire to ensure the stringency of the research methods. The Cronbach's α coefficients of neuroticism, extraversion, openness, agreeableness, and conscientiousness in the original FFPI were .86, .86, .75, .83, and .80, respectively. The coefficients for neuroticism, extraversion, openness, agreeableness, and conscientiousness in the revised questionnaire were .74, .76, .70, .72, and .70, respectively. The Cronbach's α coefficient of reliability for the CHI was .95, and that for the proposed questionnaire was .72. G*Power 3.0.10

was used to calculate statistical power. The results highlighted seven independent variables and indicated that 104 samples were required. A total of 115 fathers of preterm infants and 120 fathers of full-term infants were recruited. A total of 104 fathers of preterm infants and 104 fathers of full-term infants remained after the invalid samples were excluded. After the questionnaire data were coded, SPSS 19.0 was employed for archiving the statistical analysis. Descriptive analysis was used for qualitative analysis and hypothesis testing. An inferential analysis comprising independent and dependent samples *t*-tests, two-way analysis of variance, correlation analysis, and regression analysis was conducted.

Results

Descriptive Statistical Analysis

An analysis of the demographic variables indicated that the fathers of full-term infants were between the ages of 30 and 35 and those of preterm infants were between the ages of 25 and 36. The groups had highly similar data. They were mostly college-educated individuals from nuclear families with one child. Most had a monthly household income between NTD \$90,000 and \$120,000 and exhibited moderate subjective well-being, where a score of five or less denoted low subjective well-being, between five and 22 denoted moderate subjective well-being, between 23 and 26 denoted high subjective well-being, and 27 or higher denoted extremely high subjective well-being [34]. The strongest personality trait was openness.

Difference Analysis

Personality traits and demographic variables

Age achieved statistical significance in conscientiousness but showed no significant differences in the other traits. Level of education achieved statistical significance in agreeableness and conscientiousness, with respondents in the high school or lower group exhibiting increased agreeableness and conscientiousness. Gestation period achieved statistical significance in neuroticism, extraversion, agreeableness, and conscientiousness. Weight achieved statistical significance in neuroticism, extraversion, and agreeableness. Number of children achieved statistical significance in neuroticism, extraversion, and agreeableness. Family structure achieved statistical significance in neuroticism, openness, and conscientiousness. Household economy achieved statistical significance in neuroticism, extraversion, openness, and conscientiousness (Table 1). Yeh found that the age, level of education, and economic status of mothers of preterm infants achieved statistical differences in the various personality

dimensions. The statistical results for the demographic variables of fathers obtained in this study were different from the results reported by Yeh [35].

Subjective well-being and personal demographics

Young, college-educated respondents, respondents with preterm infants born between 28 and 32 weeks, respondents with preterm infants born at a healthy weight, and respondents from nuclear families exhibited higher subjective well-being. Number of children and household economy showed no significant differences in subjective well-being (Table 2).

Overall, the results indicated partial statistical differences between the demographic variables and subjective well-being.

Personality traits and subjective well-being

A difference analysis of the personality traits of fathers of full-term and preterm infants indicated no significant differences in overall personality traits (Table 3).

An analysis of respondents' subjective well-being indicated that fathers of full-term infants had higher subjective well-being than those of preterm infants (Table 3).

Overall, the personality traits of fathers of preterm infants influence their thought processes and how they handle situations. These thought processes then influence their perceptions and, by extension, their subjective well-being. Therefore, a portion of individuals' personality traits is positively correlated to their subjective well-being. The subjective well-being of fathers of preterm infants improves when they are able to maintain a positive and proactive mentality.

Correlation Analysis

Table 4 shows that subjective well-being achieved a positive correlation with neuroticism ($R = .33$), extraversion ($R = .38$), openness ($R = .37$), and overall personality traits ($R = .36$). All coefficients were between .33 and .36, denoting moderate correlation. These results suggest that the subjective well-being of fathers of preterm infants increases concurrently with neuroticism, extraversion, openness, and overall personality traits. Jovanovic and Menkveld found that neuroticism-anxiety and activity directly affected subjective well-being, which was consistent with the findings of this study [25].

Table 1: Differences in the Personality Traits and Demographic Variables of Fathers of Preterm and Full-term Infants.

Item/ <i>F</i> -value	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness	Overall
Age	1.22	0.53	1.83	0.28	3.26*	0.45
Level of education	0.74	0.41	0.78	3.80*	8.67***	1.73
Gestation period	9.33*	4.17*	1.33	3.71**	1.27*	1.68
Weight	6.37*	3.28*	1.32	4.29**	0.39	1.37
Number of children	8.14**	4.80*	1.43	5.86**	0.18	2.27
Family structure	6.99***	2.21	2.93*	2.31*	5.01**	0.52
Household economy	6.80***	3.04**	3.28**	0.66	8.02***	1.04

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2: Differences in the Subjective Well-being and Demographic Variables of Fathers of Preterm and Full-term Infants.

Item	F-value	p-value
Age	6.26**	0.001
Level of education	4.63*	0.01
Gestation period	3.99*	0.01
Weight	3.22*	0.03
Number of children	0.18	0.838
Family structure	3.29*	0.01
Household economy	0.21	0.888

Note. * $p < .05$, ** $p < .01$.

Table 3: Summary of Differences in the Subjective Well-being and Personality Traits of Fathers of Full-term and Preterm Infants.

Items	Fathers of full-term infants (n = 104)		Fathers of preterm infants (n = 104)		t-value
	Mean	Standard deviation	Mean	Standard deviation	
Overall personality traits	3.468	0.654	3.412	0.651	0.05
Subjective well-being	3.3375	.4215	3.1842	.36411	0.16

Note: Personality Traits * $p < .05$

Table 4: Correlation Analysis of Personality Traits and Subjective Well-being.

Dimension	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness	Overall personality traits
Subjective well-being	0.33*	0.38*	0.37*	-0.01	-0.11	0.36*

Note: * $p < .05$.

Table 5: Regression Coefficients of Subjective Well-being with Personality Traits as Predictors.

Independent variables	Regression coefficient (B)	Standardized regression coefficient (β)	t-value	p-value
Intercept	1.66		5.09*	0.000
Neuroticism	0.09	0.17	1.52	0.132
Extraversion	0.14	0.20	1.68	0.096
Openness	0.20	0.27	2.49*	0.014
Agreeableness	0.00	0.01	0.05	0.960
Conscientiousness	0.07	0.13	1.27	0.206

Note: $F(5,98) = 6.65^*$, $R^2 = .25$, $Adj R^2 = .22$, $p < .05$

Table 6: Multivariate Analysis Predicting Paternal Subjective Well-Being $F(15,93) = 29.67$, $df(\text{degrees of freedom}) = 104$, $R^2 = .59$, $Adj R^2 = .48$, $p < .05$.

Predictive variables	n	Regression coefficient (β)	Standardized regression	t-value	p-value
Intercept		-463.10		-6.12**	<.001
Age					
(1) ≤24 years	12	-4.31	0.04	-1.94	.05
(2) 25–29 years	34	2.84	0.03	1.46	.06
(3) 30–35 years	35	1.29	0.03	1.40	.06
Educational level					
(1) ≤ High school	2361	2.03	0.06	1.37	.06
(2) Bachelor degree	61	3.97	0.07	2.01*	.03
Family structure					
(1) nuclear family	45	0.98	0.02	0.37	.11
(2) Non-nuclear family	59	1.66	0.04	1.99*	.03
Weeks of gestation					
(1) <28 weeks	27	1.29	0.03	1.87	.07
(2) 28–32 weeks	56	1.45	0.04	1.74	.07
Weight of preterm infants					
(1) ≤1000 g	21	-3.16	0.07	-1.45	.08
(2) 1001–1499 g	49	2.38	0.05	2.13*	.03
Personality traits					
(1) Neuroticism	104	-6.10	-0.18	-1.97*	.02
(2) Extraversion	104	19.70	0.44	3.45*	.03
(3) Openness	104	18.08	0.47	5.23*	.01
(4) Agreeableness	104	14.51	0.55	-1.14	.07
(5) Conscientiousness	104	2.17	0.07	0.83	.21

Regression Analysis

Table 5 shows that the overall F-test results of the complex regression model achieved statistical significance [$F(5,98) = 6.65^*$, $p < .05$], suggesting that the regression model had an excellent goodness of fit. It also achieved an explanatory power of 25% ($R^2 = .25$), suggesting that the independent variables collectively and significantly predicted the dependent variables. The t -test results showed that the regression coefficients (B) of openness achieved statistical significance and were all positive values. The B for openness was 0.20, indicating that overall subjective well-being increased concurrently with openness.

The explanatory power was 25%, suggesting that other key factors may have been overlooked in this study. For example, the personality traits and subjective well-being of fathers of preterm infants may be influenced by family relations, stress, and the health conditions of and their care interactions with their preterm infants. Therefore, these factors must be incorporated into subsequent evaluations and testing.

Yeh found a positive correlation between the personality traits of mothers of preterm infants and their subjective well-being [35]. These mothers' personality traits can serve as predictors of their subjective well-being. The neuroticism, agreeableness, and conscientiousness of parents of preterm infants are effective predictors of subjective well-being. The findings of this study indicate that only the openness of fathers of preterm infants significantly and positively affects subjective well-being. Individuals attach meaning to life events after processing and interpreting these events through their personal cognitive systems. Therefore, individuals may develop different interpretations or feelings toward the same event, primarily stemming from different perceptions of specific events or situations. The findings of this study indicate that the openness of fathers of preterm infants might represent their acceptance of new events or ideas. Fathers with increased openness are more likely to change their subjective perceptions, minimizing their emphasis on unpleasant events. Therefore, their subjective well-being increases concurrently with openness.

Conclusion and Suggestions

Conclusion

Personality Traits and Subjective Well-being of Fathers of Preterm Infants

The age, level of education, number of children, family structure, and household economy of fathers of preterm infants achieved statistical significance with certain personality traits and subjective well-being.

The findings of this study revealed that the household economy of fathers of preterm infants failed to significantly influence their subjective well-being.

A number of personality traits of fathers of preterm infants were significantly and positively correlated with subjective well-being.

The findings of this study indicated that openness was a positive predictor of subjective well-being. Fathers of preterm infants should try to maintain an open mind and learn to appropriately dismiss unpleasant matters, thereby improving subjective well-being.

Social and Medical Professionals

This study validated that a number of personality traits of fathers of preterm infants were effective predictors of their subjective well-being. Specifically, openness was significantly and positively correlated with subjective well-being.

Suggestions for Future Research

The findings of this study validated the correlation between the subjective well-being of fathers of preterm infants and their personality traits. However, this study was based on a questionnaire, and so its arguments were proposed from the perspectives of the researchers. Future researchers could conduct interviews to accurately elucidate the views of fathers of preterm infants and incorporate these views into their arguments, thereby enhancing the comprehensiveness of their findings. Furthermore, future researchers can consider analyzing both parents of preterm infants, consolidating their views, personality traits, and subjective well-being and discussing different household structures, thereby forming new arguments.

How might this information affect nursing practice?

Social and medical professionals can consider the personality traits of fathers of premature infants from different perspectives when providing help or advice and then use prenatal care and medical systems to provide accurate information regarding preterm child care and develop solutions. Additionally, strategies for improving the sense of accomplishment of fathers of premature infants can be formulated.

Fathers of preterm infants should attempt to keep an open mind and maintain a positive attitude when faced with unpleasant events. They should endeavor to take control of matters when possible and remain mentally stable to effectively support their families.

Such fathers should also not feel pressure due to the medical expense of their preterm infant. Instead, they should focus on their family and minimize their stress.

Fathers of premature children should be encouraged to participate in recreational activities, adopt an open-minded attitude, communicate with the outside world, participate in regular social activities, and achieve a balance in life, but also attempt to understand the relationships in their family to enhance their sense of subjective well-being.

References

1. Borre A, Kliever W. Parental strain mental health problems and parenting practices A longitudinal study. *Personality and Individual Differences*. 2004; 68: 93-97.

-
2. http://www.pbf.org.tw/about_01_en
 3. Wu CH. A study of teenager's well-being and the influence of the personality traits and the interaction of parent-child teacher-student and peer relationships – Evidence on the junior school students in Chiayi Master's thesis. Department of Business Administration. Nanhua University. Taiwan. 2016.
 4. Lin LL. Family relationships and adolescent well-being Master's thesis. Fu Jen Catholic University. Taiwan. 2006.
 5. Huang CT, Chiang IC, Huang YW, et al. Study on the relationships between social capital and wellbeing among junior high school students in Tainan Count. *Journal of Health Promotion and Health Education*. 2018; 29: 27-50.
 6. Chen C. The moderating effect of humor style on the relationship between living stress and subjective well-being in junior high school and elementary school teachers Master's thesis. National Taiwan Normal University. Taiwan. 2010.
 7. Li CK. The study among life stress, personality trait and well-being of the college students Master's thesis. Department of Counseling. National Chiayi University. Taiwan. 2012.
 8. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation social development and well-being. *American Psychologist*. 2000; 55: 68-78.
 9. Xing ZJ. Reflections on subjective well-being measures. *Indigenous Psychological Research in Chinese Societies*. 2005; 24: 301-323.
 10. Wang CJ. A study on factors associated with well-being and academic achievement of students studying performing arts Master's thesis. National Cheng Chi University. Taiwan. 2013.
 11. Lin CS. *Educational Psychology*. Taipei. Wunan Books. 1994.
 12. Glidden LM, Bamberger KT, Turek KC, et al. Predicting mother/fatherchild interactions Parental personality and well-being socioeconomic variables and child disability status. *Journal of Applied Research in Intellectual Disabilities*. 2010; 23: 3-13.
 13. Liu LJ. The study of interns' personality traits and job satisfaction Interpersonal relationship as mediator Master's thesis. National Chung Cheng University. Taiwan. 2012.
 14. Chien SH. Father-infant attachment related psychosocial factors in father with preterm infant Master's thesis. National Taiwan University. Taiwan. 2012.
 15. Rantanen J, Metsäpelto RL, Feldt T, et al. Long-term stability in the Big Five personality traits in adulthood. *Scandinavian Journal of Psychology*. 2007; 48: 511-518.
 16. Li XW. A study of the relationship between athletic class homeroom teachers' personality traits and class management effectiveness of junior high schools in Kaohsiung city Unpublished master's thesis. Department of Physical Education. Kaohsiung Normal University. Taiwan. 2010.
 17. Wang SM, Li CT. The Reliability and Validity of the Five-Factor Test Chinese Version. Paper presented at the Social Services and Leisure Industry Seminar. Meiho University. Pintung Taiwan. 2011.
 18. Hsiang HT. A study on the sense of happiness in ancestor worship Master's thesis. Nanhua University. Taiwan. 2016.
 19. Lee PY. A study of the relationship among tourists' nostalgic emotion happiness and place attachment-The case of old houses in Tainan Master's thesis. Department of Leisure Recreation and Tourism Management, Leisure Management Institute. Nantai University of Science and Technology. Taiwan. 2013.
 20. Lin CC. Gratitude is the power that triggers minds upward towards well-being. *Journal of Education Studies*. 2011; 45: 1-23.
 21. Chu YH. The relationship of negative life events to depression and subjective well-being of college students in Taiwan Coping style as a moderator Master's thesis. National Cheng Kung University. Taiwan. 2011.
 22. Hsieh MC. A study of the relationship of loneliness social support and happiness among college students Master's thesis. National Taiwan Normal University. Taiwan. 2014.
 23. Chen MT, Chen LW. A study on the relationship among the personality traits parenting stress and happiness for mothers of elementary school children. *Kaohsiung Normal University Journal*. 2006; 20: 1-20.
 24. Hong YF. The relationship study of teacher's personality and well-being in elementary school Master's thesis. Kainan University. Taiwan. 2009.
 25. Jovanovic B, Menkveld AJ. Middlemen in limit-order markets. SSRN. 2011; 56.
 26. Hsueh HL. A study of the influence of work stress and personality trait on well-being of teachers Leisure participation as moderators Master's thesis. Jinwen University of Science and Technology. Taiwan. 2015.
 27. Fletcher KL, Perez A, Hooper C, et al. Responsiveness and attention during picture-book reading in 18-month-old to 24-month-old toddlers at risk. *Early Child Development and Care*. 2008; 175: 63-83.
 28. Lindberg B, Axelsson K, Öhrling, K. The birth of premature infants Experiences from the fathers' perspective. *Journal of Neonatal Nursing*. 2007; 13: 142-149.
 29. Lindberg B, Axelsson K, Öhrling K. Adjusting to being a father to an infant born prematurely Experiences from Swedish fathers. *Scandinavian Journal of Caring Sciences*. 2008; 22: 79-85.
 30. Cohen G, Eisenberg H. Viscosity and sedimentation study of sonicated DNA-proflavine complexes. *Biopolymers*. 1969; 8: 45-55.
 31. Costa PT, McCrae RR. Normal personality assessment in clinical practice The NEO Personality Inventory. *Psychological Assessment*. 1992; 4: 5-13.
 32. Zhao HY. Study on the relationship between personality traits and service attitudes among employees of international tourist hotels. Unpublished doctoral dissertation. Taipei Department of International Business Administration. Chinese Culture University. 2003.

-
33. Lu L, Shih JB. The Psychology of Happiness. Taipei. Juliu Press. 1997.
34. Lu L. Exploration of the connotation, measurement and related factors of well-being in Chinese. Taipei. The National Science Council of the Executive Yuan. 1998.
35. Yeh YJ. A study of the relationship between the personality traits and well-being for mothers of premature infants Master's thesis. National Tsing Hua University. Taiwan. 2009.