Nurse Education in Practice 52 (2021) 103028

Contents lists available at ScienceDirect

Nurse Education in Practice

journal homepage: www.elsevier.com/locate/issn/14715953

Applying the social cognitive model of well-being in the nursing clinical practicum: A structural equation modeling analysis with a Spanish student's sample

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ARTICLE INFO

Keywords:
Clinical practicum
Nursing students
Satisfaction
Well-being
Self-efficacy
Structural model

ABSTRACT

Background: Clinical education, understanding as *practicum*, plays a key role in nursing education but has been identified as the most challenging and stressful experience for nursing students. Promoting student satisfaction and well-being during clinical practice has a significant effect on learning outcomes, retention and attrition.
Objectives: To examine the predictive power of a social cognitive model of wellbeing when applied to explain academic satisfaction in the clinical practicum and overall life satisfaction of Spanish nursing students.
Design/participants: A cross-sectional correlational study was conducted at four Spanish nursing schools in a 586 student's sample.
Methods: Data were collected through a self-reported questionnaire that included measures of academic support, self-efficacy, goal progress, academic satisfaction, life satisfaction and trait positive affect. The research model was evaluated through structural equation modeling.
Results: The proposed model fit well in the full sample and accounted for substantial portions of the variance in academic (50%) and life satisfaction (21%). Most of the hypotheses formulated were verified. The model was invariant across academic year.
Conclusions: The results indicated global support for the social cognitive model of academic satisfaction as a guide for developing interventions to facilitate the positive adjustment and wellbeing of nursing students in the practicum.

1. Background for the study

Clinical practicum is a major and important component of any undergraduate nursing degree. The clinical setting is recognized as a key scenario where students can connect theory with practice, rehearse and become proficient in the skills and competences that are essential for professional practice, expand their capacity for "knowing how" as well as for "knowing that", and expose themselves to the reality of nursing (Edwards et al., 2004; Jokelainen et al., 2011). Experiences within clinical contexts are also essential for shaping students' attitudes to learning, practice and professional development (Henderson et al., 2012).

The curriculum of the Degree in Nursing in Spain includes extensive practical training in professional settings. The legal framework provides for a considerably larger number of European Credit Transfer Systems (ECTS) than for other four-year academic degrees. In addition, the clinical practicum incorporates the profound changes that have led to the foundations laid by the European Higher Education Area. Its orientation is framed in a learning paradigm that gravitates on the necessary competence development of students to reach the professional and formative profile that accredits the degree. This supposes a learning philosophy that, from university and professional training scenarios, generates a set of learning dynamics that foster the construction of knowledge, along with the development of skills and attitudes, from contextualized processes in the socio-professional field determined by the clinical practicum.

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https://doi.org/10.1016/j.nepr.2021.103028
Received 30 January 2019; Received in revised form 26 February 2021; Accepted 10 March 2021
Available online 16 March 2021

The central role of the clinical practicum in nursing education underlines the significance of the nature and quality of student clinical learning experiences in the professional spaces where they carry out their placements (Arribas-Marín et al., 2017; Salamonson et al., 2015). However, clinical education has been identified as the most challenging and stressful experience for nursing students (Alzayyat and Al-Gamal, 2014; Sharif and Masoumi, 2005). Consequently, research into nursing education has focused on analyzing the satisfaction and well-being of students during the clinical practicum, given its relationship with learning outcomes, retention and attrition (Admi et al., 2018; Lamont et al., 2015; Papastavrou et al., 2016). There is also recognition of the need to design and enhance nursing curricula and clinical experiences to promote student satisfaction with the clinical environment and the practicum (Phillips et al., 2017), and the relevance of attending to the overall well-being of the nursing students (Ratanasiripong and Wang, 2011; Tuomi et al., 2016).

In this context, the aim of the present study was to examine the usefulness of the social cognitive model of well-being (Lent and Brown, 2006, 2008) in predicting satisfaction with the clinical practicum and life satisfaction among nursing undergraduates.

2. Theoretical framework

The social cognitive model of well-being seeks to explain satisfaction and other dimensions of adjustment to academic and work domains by adopting a unified approach to subjective and psychological well-being (Lent and Brown, 2006, 2008). This theoretical framework is an extension of the social cognitive career theory (Lent et al., 1994) and emphasizes the mediating effects of person-cognitive and behavioral variables in the relationship between personality/affective traits and environmental factors, and educational or job satisfaction and global life satisfaction (see Fig. 1).

When applied to the educational domain, this academic satisfaction model maintains that a student's personality traits and affective dispositions and their environmental supports and resources –or lack thereof– directly and indirectly predict their academic adjustment and well-being through their self-efficacy in the academic domain in question, their progress in their core goals in this domain, and their expected outcomes. These last three social-cognitive variables have also been seen as having a direct effect on academic satisfaction, insofar as students will most likely show academic satisfaction in a specific domain when they see themselves as competent (positive expectations of self-efficacy), when they anticipate that their involvement in it will lead to results that are considered valuable (positive outcome expectations), and when they progress towards achieving relevant academic objectives in this area. The model similarly posits that life satisfaction is likely to result from having favorable personality traits, advancing towards one's key domain-academic goals, and from satisfaction in one's core academic domain. In addition to direct paths to academic and life satisfaction, the model specifies a number of links between the predictors described.

The academic satisfaction model of Lent and Brown (2006, 2008) has led to substantial empirical research. Although most of this research has been done with university students in the United States (Hui et al., 2013; Ojeda et al., 2011; Singley et al., 2010), there are a number of studies designed to validate variations of this model in other cultural contexts such as Europe (Lent et al., 2009, 2012, 2016), and to a lesser extent Africa (Lent et al., 2014) and Asia (Sheu et al., 2014, 2017). The overall results have supported the social cognitive hypothesis and its cross-cultural validity when the model is used to explain the academic satisfaction and adjustment of university students. This previous research has used samples with a heterogeneous composition and samples of students in specific disciplines (i.e. engineering, computer science, education). To our knowledge, however, the model has not been evaluated in the particular context of nursing education.

3. The present study

This research focused on testing an abbreviated version of the social cognitive model shown in Fig. 2 using a Spanish sample via structural equation modeling (SEM). The omission of outcome expectations represents a fairly common alteration in the model (e.g., Hui et al., 2013; Lent et al., 2012), as past findings have not always supported their unique predictive role (Lent et al., 2016). Measurement equivalence and structural equivalence were also tested by academic year (second year vs. third year) as an *a priori* moderator to account for potential variability within the nursing student population.

4. Methods

4.1. Design, settings and participants

A cross-sectional correlational study was conducted at four Spanish universities with second-, third- and fourth-year nursing students. A convenience sample of 586 students took part in the study.

4.2. Instruments

Data were collected through a self-reported questionnaire that included four nursing clinical practicum-related social cognitive measures developed by researchers, and two previously validated measures

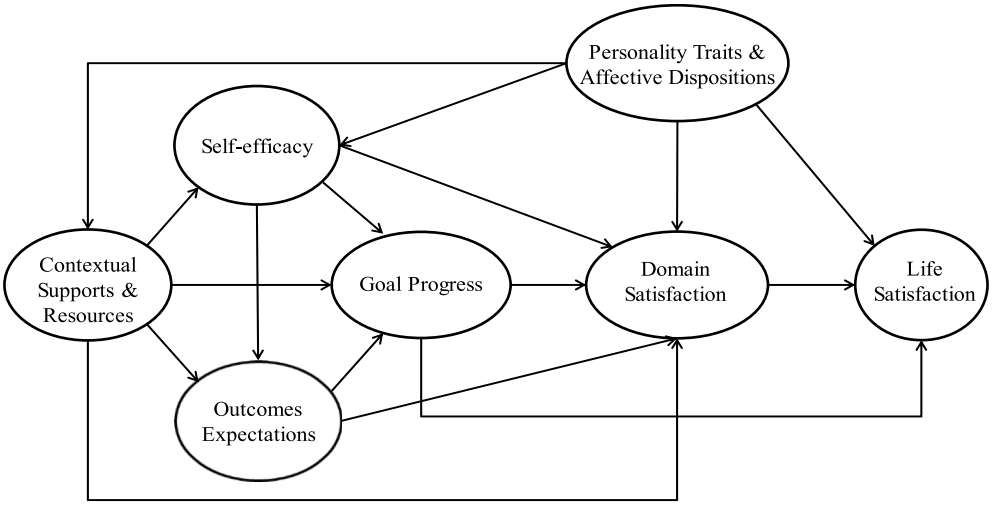

Fig. 1. General social cognitive model of well-being (Lent, 2004).

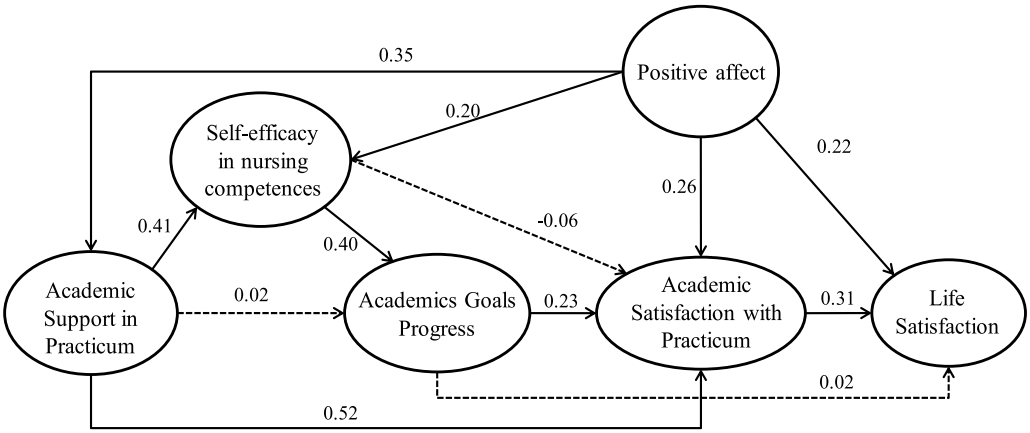

Fig. 2. The social cognitive model of well-being tested in the present study showing significant paths ($p < .05$) in solid lines and non-significant paths ($p > .05$) in broken lines. Values are standardized coefficients.

of life satisfaction and trait positive affect. The survey also comprised demographic data and academic information.

Nursing clinical practicum-related social cognitive scales. The design process of the four scales included the following phases: a) conceptual analysis of the domain; b) design of a preliminary version that was revised by three focal groups (nursing experts, nursing clinical practicum tutors and nursing students); c) application and analysis of the preliminary version in a pilot sample of students; d) design and psychometric analysis of the definitive version of the instruments.

Self-efficacy in nursing competences. Self-efficacy was defined as the judgements made by the individual in regard to their competence to handle various tasks in the context of the nursing practicum. The instrument comprises 20 items to be answered by the subject, indicating the degree to which he or she feels able to carry out the specified task (0 = incapable; 10 = totally capable). The items (e.g. "communicating effectively with the users") cover four aspects: knowledge, critical reasoning, communication and nursing ethics. The internal consistency reliability (Cronbach's alpha) was 0.922. The four-factor measuring model had an acceptable fit to the data (SRMR = 0.067; RMSEA = 0.058 [0.050–0.066]; CFI = 0.93).

Goal progress in the development of nursing competences. The students assessed their progress in the four competences they considered most important for their training development in the year. Specifically, the participants answered three items (e.g., "How far do you believe you have advanced in your level of achievement?") for each one with a Likert scale format (0–11), and the combined scores gave a single progress indicator for each competence. The reliability of the final questionnaire was equal to 0.844. In the confirmatory factor analysis, the four-factor measuring model had a good fit to the data (SRMR = 0.009; RMSEA = 0.000 [0.000–0.078]; CFI = 1.00).

Academic support *in the nursing practicum*. This was measured using the Academic Support in the Practicum Scale (ASPS; Arribas-Marín et al., 2017). The ASPS consists of 23 items with an 11-point Likert scale format. The students use these to assess the degree of support perceived in the practicum. This support is structured in four factors: a) support from the academic tutor; b) support from the clinical tutor; c) support from the academic institution; and d) support from peers. In this sample the coefficient α was equal to 0.905 and the model-data fit was satisfactory (SRMR = 0.025; RMSEA = 0.040 [0.015–0.062]; CFI = 0.99).

Academic satisfaction with the nursing practicum. Satisfaction with the academic domain is defined as the student's overall judgement of their academic experience in the nursing clinical practicum. It was measured on a scale of seven items with an 11-point Likert scale format, in which the participants were asked to indicate their degree of agreement with statements such as "I am happy with how much I am learning in my clinical practicum". The questionnaire showed a α = 0.924 and a single-factor structure with a good overall fit to the data (SRMR = 0.026; RMSEA = 0.056 [0.036–0.077]; CFI = 0.97).

Positive affect. The participants completed an adaptation of the Positive Affect Scale from the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). Students indicated the degree to which they experienced ten positive emotions or feelings, through a 5-point Likert scale (1 = none, 5 = a lot). The Positive Affect Scale has been widely used in prior research in the well-being model, so there is evidence of its network of relations with relevant variables and of its adequate internal consistency (Lent et al., 2009, 2016). In this study the coefficient α was equal to 0.86.

Life satisfaction. This study used the Satisfaction with Life Scale (SWLS; Diener et al., 1985), which assesses a person's overall judgement of their life in general terms and comprises five items that are assessed with an 11-point Likert scale format. The scale presents adequate psychometric properties with a coefficient of α = 0.83, as in prior research in the model of well-being (Lent et al., 2009, 2016; Sheu et al., 2017).

4.3. Data gathering and ethical considerations

The participants were asked to complete an online survey after finishing their clinical practicum. The study was presented by the researchers to the students in informative sessions and the survey was then made available on the website for the research project (www.upcomillas.es/hospitare). Participants underwent a blind registration process and gave their informed consent for their data to be included in the project file. Participants who did not complete at least 80% of the items in each of the six scales/measures were excluded. As only a small amount of data was omitted by the remaining participants, mean substitution was used to handle missing values.

4.4. Data analysis

Descriptive statistics were calculated using IBM SPSS 20. Structural equation modeling (SEM) was used to test the hypothesized model via EQS 6.2. (Bentler and Wu, 2012). Robust maximum likelihood estimation was conducted to test the model fit. The goodness of the model-data fit was assessed with the comparative fit index (CFI), the root mean square error of approximation (RMSEA), as well the standardized root mean squared residual (SRMR). According to Hu and Bentler (1999), good model-data fit can be inferred from SRMR values close to 0.08 in combination with CFI values close 0.95 or RMSEA values close to 0.06.

To test the invariance of the model by academic year, separate covariance matrices were used to conduct multi-group analyses between second-year (n = 265) and third year (n = 274) students. Hypotheses on equal number of factors, item loadings, and path coefficients among

latent factors were tested by developing two nested versions (restrictive and unrestrictive) of the measurement and structural nested models. The criterion used to judge the practical significance of differences in model fit was a change in CFI higher than 0.01 between nested models (Cheung and Rensvold, 2002).

5. Results

5.1. Sample demographics

The mean age was 24.01 years (standard deviation 5.28). Most of the 586 students were women (83%), a percentage which matched the gender composition of the overall population of nursing undergraduates in Spain. The distribution of the sample by academic year was as follows: 264 second-year students, 274 third-year students and 48 fourth-year students.

5.2. Preliminary analysis

Table 1 presents the intercorrelations, standard deviations, and means of the full sample measured variables. The new nursing-related scales of self-efficacy, goal progress, academic support and academic satisfaction are closely inter-related with principles and with prior findings in other academic domains.

Their correlations with positive affect and life satisfaction were also statistically significant and in the expected direction. These results taken together indicated initial support for the criterion-related validity of the measures.

5.3. Model testing

We modeled the estimated error in the examined variables characterizing each of the constructs formulating multiple pointed-out signs of each construct from the proposed scale items. Item parcels were created for all constructs except for academic goal progress, which was specified by four simple indicators. A covariance matrix with 21 indicators was composed in this process as input data for each model test (see Table 2). The covariate matrices used in the analyses are available on request from the authors.

Full sample analysis. A six-factor measurement model produced a satisfactory goodness of-fit indices (Table 3). Despite the fact the chi-square test was meaningful, the other indices met the cut-off criteria (CFI $\geq$0.90; SMRM $\leq$0.08; RMSEA $\leq$0.05). All indicators significantly loaded in their respective factors (see Table 2). The structural model also produced a good fit to the data (again CFI $\geq$0.90; SMRM $\leq$0.08; RMSEA $\leq$ 0.05). In fact, the structural model did not differ from the measurement model on the ΔCFI criterion. All the paths hypothesized in the model were significant except for three (see Fig. 2). The only non-significant coefficients were for the direct paths from academic support to academic goal progress; from self-efficacy expectations to academic satisfaction; and from academic goal progress to life satisfaction. However, the indirect effects associated did prove statistically significant (see Table 4). Collectively, the predictors in the model accounted for 50% of the variance in satisfaction in the nursing-related academic domain, and 21% in life satisfaction. Nursing-related academic support and positive affect explained 27% of the variance in nursing self-efficacy expectations, and academic support and self-efficacy accounted for 17% of the variance in goal progress in the development of nursing competences. Finally, 13% of the variance in academic support was explained by positive affect.

Multi-group analysis. The satisfactory descriptive fit indices obtained (Table 3) for the unconstrained measurement model by academic year suggested that the proposed model did not differ significantly across groups with regard to the number of factors (CFI = 0.93, RMSEA $\leq$ 0.05, SRMR$\leq$ 0.08). Across the year, the pattern of factor filing equivalent, as an exactly alike CFI index, was retrieve for both unconstrained and constrained estimation models (CFI = 0.92). Finally, the constrained structural model did not differ from the unconstrained structural model on the ΔCFI criterion. These results indicated that the structural paths are invariant across year.

Table 1
Means, standard deviations, and correlations among study variables (N = 586).

	1	2	3	4	5	6	M	SD
1. Positive affect	–						3.66	0.54
2. Academic support in practicum	.230						6.96	1.52
3. Self-Efficacy in nursing competences	.247	.312					7.70	0.97
4. Academic goal progress	.236	.100	.286				9.19	1.34
5. Academic satisfaction with practicum	.439	.390	.281	.332			8.39	1.28
6. Life satisfaction	.310	.107	.158	.161	.362	–	7.69	1.35

All correlations significant, $p < .05$.

Table 2
Means, standard deviations, factor loadings, error and R^2 of indicators of the measurement model (standardized solution).

Factor/indicator	M	SD	Factor Loading	Error	R^2
Positive affect					
Parcel 1	3.88	0.61	.72	.69	.52
Parcel 2	3.67	0.70	.83	.56	.69
Parcel 3	3.45	0.63	.76	.65	.58
Parcel 4	3.64	0.65	.79	.61	.63
Academic support					
Parcel 1	6.98	2.27	.38	.93	.14
Parcel 2	6.46	2.91	.43	.90	.19
Parcel 3	6.19	2.21	.46	.89	.22
Parcel 4	8.21	1.96	.57	.82	.32
Self-efficacy					
Parcel 1	8.12	1.07	.73	.68	.53
Parcel 2	6.60	1.72	.53	.85	.28
Parcel 3	8.48	1.11	.68	.74	.46
Parcel 4	7.59	1.14	.80	.60	.64
Academic goal progress					
Indicator 1	9.26	1.68	.69	.72	.48
Indicator 2	9.23	1.60	.77	.63	.60
Indicator 3	9.08	1.60	.79	.61	.63
Indicator 4	9.17	1.62	.78	.63	.53
Academic satisfaction					
Parcel 1	8.30	1.35	.90	.43	.81
Parcel 2	8.56	1.32	.84	.54	.71
Parcel 3	8.36	1.49	.91	.42	.82
Life satisfaction					
Parcel 1	7.69	1.35	.85	.52	.73
Parcel 2	7.69	1.63	.76	.65	.58

6. Discussion

Taken as a whole, the results of this study support the application of the social cognitive well-being model to explain satisfaction with the nursing practicum and life satisfaction among Spanish nursing students. The abbreviated version of the tested model had a good overall fit to the data, accounted for a sizeable portion of the variance in academic satisfaction and life satisfaction, and as hypothesized, empirical support was found for most of the paths in the model. In particular, nine of the 12 hypothesized paths were significant, although it is important to note that in the three cases of no-significant paths the results have shown significant indirect effects through other variables. The results also specifically supported the utility of the model in explaining the satisfaction of nursing students in several academic years.

Positive affect produced significant direct paths to academic satisfaction in the practicum, and to life satisfaction. It also had an important

Table 3
Fit indices for the measurement and structural models.

Model	χ^2	S-Bχ^2	df	SRMR	RMSEA[a]	CFI[a]	ΔCFI
Full sample							
Measurement model	486.1	396.6*	174	.049	.047	.93	–
Structural model	501.7	408.4 *	177	.054	.047	.93	.00
Multi-group analysis (2nd versus 3rd year)							
Measurement model without constraints	686.4	566.0*	348	.060	.048	.92	–
Measurement model with constraints on all loadings	721.9	593.0*	362	.062	.049	.92	.00
Structural models without constraints	707.1	580.6*	354	.065	.049	.92	–
Structural model with constraints on all structural paths	730.4	593.5*	366	.066	.048	.92	.00

[a] Derived from robust maximum likelihood estimation.
*$p < .05$.

Table 4
Decomposition of indirect and total effects.

Predictor variable	Criterion variable	Indirect effect	Total effect
Positive affect	Self-efficacy in nursing competences	.15	.35
	Academic satisfaction in practicum	.20	.45
	Life satisfaction	.14	.36
Academic support in practicum	Academic goal progress	.16	.19
	Academic satisfaction in practicum	.02	.54
Self-efficacy in nursing competences	Academic satisfaction in practicum	.09	.03
Academic goal progress	Life satisfaction	.07	.09

All parameters significant, $p < .05$.

direct effect on the academic support perceived by students in the practicum and on their self-efficacy in nursing competences. These results coincide with those obtained in the prior research with students from different specialties and nationalities (Lent et al., 2012, 2014, 2016; Ojeda et al., 2011).

It is essential to note that the academic support in the practicum, self-efficacy in nursing competences, and progress towards personally relevant academic goals all conform an indirect key pathway linking positive affect with satisfaction in the practicum and with life satisfaction. These findings are consistent with prior research (Lent et al., 2012, 2014, 2016; Sheu et al., 2017), and suggest that positive affect, a feature that is more or less stable, can work together with these environmental, cognitive and behavioral variables that are widely susceptible to modification to conform academic well-being and satisfaction with the practicum among nursing students. Academic support in the practicum also had the most important direct effect on their academic satisfaction.

The key role found for academic support in this study is consistent with prior research on nursing education because, although it had no significant direct effect on academic goal progress, its effect as a predictor is mediated by self-efficacy in nursing competences. It has been reported that the level of academic support in clinical nursing education has effects on the students' perception of well-being and reduces levels of stress in the clinical learning environment (Graham et al., 2016), in addition to reducing attrition rates in nursing education (Eick et al., 2012; Ujváriné et al., 2011). Walker et al. (2016) also found that students needed to experience support to feel satisfied with their learning itinerary.

Our results similarly show the key role of self-efficacy in the satisfaction of nursing students, although its direct effect is not significant and operates, through the indirect effect shown by the results, in a way that is completely mediated by academic goal progress. This concurs with the findings of Hui et al. (2013), Lent et al. (2014) and Singley et al. (2010) with samples from students from other specialties. It is also consistent with the works of He et al. (2018) and Gibbons et al. (2011), who identified support and self-efficacy jointly as significant predictors of well-being among nursing students. For their part, Bodys-Cupak et al. (2016) found that self-efficacy has a significant impact on stress levels and on how nursing students handle difficult situations.

The results of this study, which reinforce the previous research, therefore suggest that initiatives to promote academic support and self-efficacy are likely to have benefits for student well-being. For example, institutional policies and practices concerning the implementation of interventions to promote the support provided by specific sources of the clinical practicum, such as support from the academic institution, clinical facilitators, peers and instructors (Arribas-Marín et al., 2017). Bandura, 1986 four sources of efficacy expectations (i.e. performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal) can be used as a foundation for designing interventions to develop self-efficacy.

Similarly, academic goal progress had a direct effect on academic satisfaction with the clinical practicum. This variable plays a key role in mediating the effects of academic support in the practicum and of self-efficacy on students' academic satisfaction. These findings, aligned with the results of all the previous studies on this model, suggest that goal-setting (e.g., setting short-term, specific, and learning-focused goals) is itself an important target for interventions and can be integrated with interventions designed to build support and promote self-efficacy to enhance students' academic well-being. Counter to expectations, there was no significant direct effect of academic goal progress on life satisfaction, a result that coincides with Lent et al. (2014), although the results have shown it has a significant indirect effect through academic satisfaction in the practicum.

Furthermore, the results confirmed the direct effect of academic satisfaction with the nursing clinical practicum on life satisfaction. This finding, common in the prior research with samples of university students, is also consistent with the Goal Theory (Diener and Lucas, 2000), which maintains that students consider the academic sphere to be one of the core domains in their lives, suggesting that interventions that promote academic satisfaction would have positive repercussions on students' life satisfaction and well-being.

Finally, the multigroup analysis has verified the structural invariance of the hypothesized model for two groups of students, thereby confirming its robustness and validity to make comparisons between these groups, supporting that differences and similarities between them can be properly interpreted.

The findings previously described are considered relevant in this study. They provide sensitive information on variables susceptible to intervention for the improvement of adaptation processes in the field of practicum of undergraduate students in Nursing at different stages of their university education. In addition, they can serve as guidance for nursing educators, clinical facilitators and preceptors in aspects such as: a) making decisions about the academic planning of practical training; b) the development of the teaching competences required by clinical facilitators in practical-clinical learning; c) the selection of intervention strategies in the face of the repercussions of this academic context on the student's perception of well-being and d) consider implementing specific peer mentoring programs or collaborative work dynamic processes

among peers that enhance the perception of academic support through one of its main sources.

6.1. Limitations and suggestions for future research

The limitations of this study include: a) the incidental nature of the sample, which advises caution in generalizing the results obtained and the conclusions derived from them; b) the cross-sectional nature of the study, which restricts the possibility of attributing causality to the relations between the variables identified; and c) the use of new measures for evaluating the variables in the model in the context of the nursing practicum, which requires additional research to confirm the initially favorable data on the reliability and validity obtained in this work.

The results of this first evaluation of the social cognitive model of well-being applied in the specific sphere of the nursing clinical practicum are promising, and endorse the need to continue research in this area. The replication of the model in institutional and cultural contexts other than that of the reference in this study, and the development of longitudinal studies are potentially useful future lines of work.

7. Conclusion

The results of this study serve as initial empirical support for the utility of the cognitive social model of well-being to explain academic satisfaction in the clinical practicum and life satisfaction among nursing students. This framework is theoretically and empirically well-founded and suggests lines for specific intervention to improve students' well-being. It particularly highlights the need to develop interventions aimed at ensuring adequate academic support throughout the practicum to contribute to reinforcing positive beliefs of self-efficacy in the students' nursing competences, and specifically to sustain effective progress towards the academic goals that are important to the students. These factors significantly contribute to student satisfaction in the clinical practicum, which in turn constitutes a significant predictor of life satisfaction.

Funding

This work was supported by the San Juan de Dios University School of Nursing and Physical Therapy (Comillas Pontifical University, Madrid, Spain) through "Hospitare" Project.

Ethical approval

The study was assessed and approved by the Ethical Committee at the Comillas Pontifical University. The procedures to obtain, process and communicate the data from this research were aligned with the provisions set forth in the Spanish and European legislation on personal data protection.

CRediT authorship contribution statement

Juan Arribas-Marín: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Vicente Hernández-Franco:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Writing – review & editing. **Calixto Plumed-Moreno:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Writing – review & editing. **Ángeles Blanco-Blanco:** Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Writing – review & editing.

Declaration of competing interest

Authors declares that they have no conflict of interest.

Acknowledgements

The researchers would like to thank the Department of Health Sciences (School of Nursing) and the Department of Education and Research Methods and Evaluation (Faculty of Humanities and Social Sciences) for their part in this research. We would also like to thank the nursing schools, professors and students of the participating universities whose support and contribution have made this research possible.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.nepr.2021.103028.

References

Admi, H., Moshe-Eilon, Y., Mann, M., 2018. Nursing students' stress and satisfaction in clinical practice along different stages: a cross-sectional study. Nurse Educ. Today 68 (9), 86–92. https://doi.org/10.1016/j.nedt.2018.05.027.

Alzayyat, A., Al-Gamal, E., 2014. A review of the literature regarding stress among nursing students during their clinical education. Int. Nurs. Rev. 61, 406–415.

Arribas-Marín, J., Hernández-Franco, V., Plumed-Moreno, C., 2017. Nursing students' perception of academic support in the practicum: development of a reliable and valid measurement instrument. J. Prof. Nurs. 33 (5), 387–395. https://doi.org/10.1016/j.profnurs.2017.03.001.

Bandura, A., 1986. Social Foundations of Thought and Action: A Social Cognitive Theory. Prentice Hall, Englewood Cliffs, N.J.

Bentler, P.M., Wu, E.J.C., 2012. EQS 6.2 for Windows. Multivariate Software, Encino, CA.

Bodys-Cupak, I., Majda, A., Zalewska-Puchała, J., Kamińska, A., 2016. The impact of a sense of self-efficacy on the level of stress and the ways of coping with difficult situations in Polish nursing students. Nurse Educ. Today 45 (10), 102–107. https://doi.org/10.1016/j.nedt.2016.07.004.

Cheung, G., Rensvold, R., 2002. Evaluating goodness-of-fit indexes for testing measurement invariance. Struct. Equ. Model. 9, 233–255. https://doi.org/10.1207/S15328007SEM0902_5.

Diener, E., Lucas, R., 2000. Explaining differences in societal levels of happiness: relative standards, need fulfillment, culture, and evaluation theory. J. Happiness Stud.: An Interdisciplinary Periodical on Subjective Well-Being 1, 41–78. https://doi.org/10.1023/A:1010076127199.

Diener, E., Emmons, R.A., Larsen, R.J., Griffin, S., 1985. The satisfaction with life scale. J. Pers. Assess. 49, 71–75. https://doi.org/10.1207/s15327752jpa4901_13.

Edwards, H., Smith, S., Courtney, M., Finlayson, K., Chapman, H., 2004. Impact of clinical placement location on nursing student's competence and preparedness for practice. Nurse Educ. Today 24 (4), 248–255. https://doi.org/10.1016/j.nedt.2004.01.003.

Eick, S.A., Williamson, G.R., Heath, V., 2012. A systematic review of placement-related attrition in nurse education. Int. J. Nurs. Stud. 49 (10), 1299–1309. https://doi.org/10.1016/j.ijnurstu.2011.12.004.

Gibbons, C., Dempster, M., Moutray, M., 2011. Stress, coping and satisfaction in nursing students. J. Adv. Nurs. 67 (3), 621–663. https://doi.org/10.1111/j.1365-2648.2010.05495.x.

Graham, M.M., Lindo, J., Bryan, V.D., Weaver, S., 2016. Factors associated with stress among second year student nurses during clinical training in Jamaica. J. Prof. Nurs. 32 (5), 383–391. https://doi.org/10.1016/j.profnurs.2016.01.004.

He, F.X., Turnbull, B., Kirshbaum, M.N., Phillips, B., Klainin-Yobas, P., 2018. Assessing stress, protective factors and psychological well-being among undergraduate nursing students. Nurse Educ. Today 68 (9), 4–12. https://doi.org/10.1016/j.nedt.2018.05.013.

Henderson, A., Cooke, M., Creedy, D.K., Walker, R., 2012. Nursing students' perceptions of learning in practice environments: a review. Nurse Educ. Today 32 (3), 299–302. https://doi.org/10.1016/j.nedt.2011.03.010.

Hu, L.T., Bentler, P.M., 1999. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. Struct. Equ. Model.: a multidisciplinary journal 6 (1), 1–55. https://doi.org/10.1080/10705519909540118.

Hui, K., Lent, R.W., Miller, M.J., 2013. Social cognitive and cultural orientation predictors of well-being in Asian American college students. J. Career Assess. 21 (4), 587–598. https://doi.org/10.1177/1069072712475289.

Jokelainen, M., Turunen, H., Tossavainen, K., Jamookeeah, D., Coco, K., 2011. A systematic review of mentoring nursing students in clinical placements. J. Clin. Nurs. 20 (19-20), 2854–2867. https://doi.org/10.1111/j.1365-2702.2010.03571.x.

Lamont, S., Brunero, S., Woods, K.P., 2015. Satisfaction with clinical placement–the perspective of nursing students from multiple universities. Collegian 22 (1), 125–133. https://doi.org/10.1016/j.colegn.2013.12.005.

Lent, R., Brown, S., 2006. Integrating person and situation perspectives on work satisfaction: a social-cognitive view. J. Vocat. Behav. 69 (2), 236–247. https://doi.org/10.1016/j.jvb.2006.02.006.

Lent, R., Brown, S., 2008. Social cognitive career theory and subjective well-being in the context of work. J. Career Assess. 16 (1), 6–21. https://doi.org/10.1177/1069072707305769.

Lent, R.W., 2004. Toward a unifying theoretical and practical perspective on well-being and psychosocial adjustment. J. Counsel. Psychol. 51 (4), 482–509. https://doi.org/10.1037/0022-0167.51.4.482.

Lent, R., Taveira, M., Lobo, C., 2012. Two tests of the social cognitive model of well-being in Portuguese college students. J. Vocat. Behav. 80 (2), 362–371. https://doi.org/10.1016/j.jvb.2011.08.009.

Lent, R., Taveira, M., Figuera, P., Dorio, I., Faria, S., Gonçalves, A.M., 2016. Test of the social cognitive model of well-being in Spanish college students. J. Career Assess. 25 (1), 135–143. https://doi.org/10.1177/1069072716657821.

Lent, R., Taveira, M., Pinto, J.C., Silva, A.D., Blanco, A., Faria, S., Gonçalves, A.M., 2014. Social cognitive predictors of well-being in African college students. J. Vocat. Behav. 84 (3), 266–272. https://doi.org/10.1016/j.jvb.2014.01.007.

Lent, R., Taveira, M., Sheu, H., Singley, D., 2009. Social cognitive predictors of academic adjustment and life satisfaction in Portuguese college students: a longitudinal analysis. J. Vocat. Behav. 74 (2), 190–198. https://doi.org/10.1016/j.jvb.2008.12.006.

Lent, R.W., Brown, S.D., Hackett, G., 1994. Toward a unifying social cognitive theory of career and academic interest, choice, and performance. J. Vocat. Behav. 45 (1), 79–122. https://doi.org/10.1006/jvbe.1994.1027.

Ojeda, L., Flores, L., Navarro, R., 2011. Social cognitive predictors of mexican american college students' academic and life satisfaction. J. Counsel. Psychol. 58 (1), 61–71. https://doi.org/10.1037/a0021687.

Papastavrou, E., Dimitriadou, M., Tsangari, H., Andreou, C., 2016. Nursing students' satisfaction of the clinical learning environment: a research study. BMC Nurs. 15 (1), 44. https://doi.org/10.1186/s12912-016-0164-4.

Phillips, K.F., Mathew, L., Aktan, N., Catano, B., 2017. Clinical education and student satisfaction: an integrative literature review. Int. J. Nurs. Sci. 4 (2), 205–213. https://doi.org/10.1016/j.ijnss.2017.03.004.

Ratanasiripong, P., Wang, C.C.D., 2011. Psychological well-being of Thai nursing students. Nurse Educ. Today 31 (4), 412–416. https://doi.org/10.1016/j.nedt.2010.08.002.

Salamonson, Y., Everett, B., Halcomb, E., Hutchinson, M., Jackson, D., Mannix, J., Weaver, R., 2015. Unravelling the complexities of nursing students' feedback on the clinical learning environment: a mixed methods approach. Nurse Educ. Today 35 (1), 206–211. https://doi.org/10.1016/j.nedt.2014.08.005.

Sharif, F., Masoumi, S., 2005. A qualitative study of nursing student experiences of clinical practice. BMC Nurs. 4 (1), 6. https://doi.org/10.1186/1472-6955-4-6.

Sheu, H.B., Liu, Y., Li, Y., 2017. Well-being of college students in China: testing a modified social cognitive model. J. Career Assess. 25 (1), 144–158. https://doi.org/10.1177/1069072716658240.

Sheu, H., Chong, S.S., Chen, H., Lin, W., 2014. Well-being of Taiwanese and Singaporean college students: cross-cultural validity of a modified social cognitive model. J. Counsel. Psychol. 61 (3), 447–460. https://doi.org/10.1037/cou0000018.

Singley, D., Lent, R., Sheu, H., 2010. Longitudinal test of a social cognitive model of academic and life satisfaction. J. Career Assess. 18 (2), 133–146. https://doi.org/10.1177/1069072709354199.

Tuomi, J., Aimala, A.M., Žvanut, B., 2016. Nursing students' well-being using the job-demand-control model: a longitudinal study. Nurse Educ. Today 45 (10), 193–198. https://doi.org/10.1016/j.nedt.2016.08.008.

Ujváriné, A.S., Zrínyi, M., Tóth, H., Zékanyné, R.I., Szögedi, I., Betlehem, J., 2011. The role of faculty and clinical practice in predicting why nurses graduate in Hungary. Nurse Educ. Today 31 (1), 94–101. https://doi.org/10.1016/j.nedt.2010.04.003.

Walker, S., Rossi, D., Anastasi, J., Gray-Ganter, G., Tennent, R., 2016. Indicators of undergraduate nursing students' satisfaction with their learning journey: an integrative review. Nurse Educ. Today 43 (8), 40–48. https://doi.org/10.1016/j.nedt.2016.04.011.

Watson, D., Clark, L.A., Tellegen, A., 1988. Development and validation of brief measures of positive and negative affect: the PANAS scales. J. Pers. Soc. Psychol. 54, 1063–1070.