Asia Pacific Education Review (2020) 21:227–243
https://doi.org/10.1007/s12564-019-09609-w

The effects of college students' perfectionism on career stress and indecision: self-esteem and coping styles as moderating variables

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Received: 20 April 2018 / Revised: 26 June 2019 / Accepted: 11 July 2019 / Published online: 10 August 2019

Abstract
This study identified the subgroups (latent classes) of Korean college students according to the influence of perfectionism on career stress and indecision, and explored the effects of sub-factors of perfectionism on career stress and indecision for each subgroup. Also, the study examined how individual self-esteem and stress coping styles affect the subgroup classification. Data from 476 South Korean college students were analyzed via mixture regression and logistic regression. Four latent classes were identified. In class 1, career indecision increased as self-oriented perfectionism increased, and career stress increased as socially prescribed perfectionism increased. In class 2, career stress increased as self-oriented perfectionism increased, whereas both career stress and career indecision decreased as others-oriented perfectionism increased. In class 3, both career stress and career indecision increased as others-oriented perfectionism increased. In class 4, career stress and career indecision decreased as others-oriented perfectionism increased, while career stress increased as socially prescribed perfectionism increased. In differentiating the classes, self-esteem and coping styles were analyzed as predictor variables. The results indicated that self-esteem helped to distinguish class 1 from class 2, and class 1 from class 3. Avoidance-oriented coping style could distinguish class 1 from class 3. Career counselors would benefit by noting that the influence of each subtrait of perfectionism on career-related issues may vary by latent class, and that self-esteem and coping styles may moderate the effects of perfectionism on career-related issues.

Keywords Career stress · Career indecision · Perfectionism · Mixture regression model · Multidimensional perfectionism

Overview

College years constitute an important phase of life for many individuals, as they develop career identities and set the course for their future career paths (Stringer and Kerpelman 2010). Identifying a career path and devising a plan to pursue it is not merely prep-work required to secure future employment. In fact, it is an important task that can have far-reaching implications on one's interpersonal relationships, values, and realization of potentials (Tolbert 1980).

Despite the significance of deciding on a career path, many college students experience great difficulties in doing so and seek professional help. In colleges across Korea, students seeking career counseling services accounted for most of those who visited student counseling services (Kim and Kim 2007). Furthermore, stress related to career decisions is reportedly the single most acute stressor experienced by college students in Korea (Kim 2003). Career indecision and career stress significantly correlate with one's academic and general adjustment to college life (Kim 2003). Such stress not only undermines academic motivation and interpersonal relationships (Lee and Yu 2009), but also threaten mental health as it contributes to the development of depressive symptoms (Saunders et al. 2000; Smith and Betz 2002), anxiety (Dumonr and Provost 1999), and a sense of helplessness and worthlessness (Haines et al. 1996). Clearly,

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it is important that factors influencing college students' career indecision and stress be identified to develop effective interventions.

Past studies on career indecision have mostly focused on exploring variables associated with career indecision (Jung et al. 2008) or identifying the factors influencing the issue (Jones 1989). The variables that have been identified to influence career indecision thus far can be divided into two groups: intra-individual versus interpersonal. Variables that are intra-individual in nature include decision-making style (Mau 1995), self-identity (Guerra and Braungart-Rieker 1999), dysfunctional career attitudes (Lee and Choi 2006; Osborn 1998), and perfectionism (Kim 2014; Lee and Choi 2006; Lehmann and Konstam 2011; Leong and Chervinko 1996; Osborn 1998; Page et al. 2008). On the other hand, interpersonal variables include parental attachment, psychological independence from parents (Kim et al. 2013), peer relationships (Felsman and Blustein 1999), and peer and family interaction styles (Guay et al. 2003).

Multidimensional perfectionism and its influence on career indecision and career stress

Among above variables, the current study focused on the effects of perfectionism, an individual factor, on career stress and indecision. Perfectionism is a personality trait characterized by an individual setting personal standards far beyond his/her ability to attain them, accompanied by self-imposed heavy pressure to meet the unattainable standards, and self-evaluation based on achievement of those standards (Burns 1980). Existing literature on career decision making suggests that an individual's cognitive factors play an important role in the process (Corbishley and Yost 1989; Kim 2005), because he makes sense of his emotions and behaviors experienced during one's career development through his thoughts related to career (Lee et al. 2002). Therefore, it seems likely that perfectionism, characterized by cognitive distortions and irrational beliefs (Lee and Choi 2006), will have a significant impact on career indecision.

In fact, perfectionism and its association with career indecision have already been documented by many researchers. Leong and Chervinko (1996), Osborn (1998), Page et al. (2008), and Lee and Choi (2006) have all suggested that individuals with high perfectionism tend to experience difficulty in career decision making. The obsessive or delayed behavior that accompanies perfectionism tends to interfere with the decision making process (Han 2011), and determines the level and specific characteristics of indecision (Lee 2011a; Kim and Kim 2016). Taken together, the current study hypothesized that perfectionism as a personality trait would have an important influence on career indecision.

Some researchers view perfectionism as a single concept (Burns 1980; Pacht 1984) while others see it as a multidimensional concept (Frost et al. 1990; Hewitt et al. 1996). The two differing perspectives are alike in that they both consider perfectionism as a variable with basic characteristics such as strictly high expectations and high pressure. However, the key difference between the perspectives is that the multidimensional perspective purports that perfectionism does not always have negative effect on individuals' emotions and behaviors, and accounts for the positive side of perfectionism (Kim and Seo 2017). Some scholars with this view have found that perfectionism is associated with positive functioning such as self-efficacy and academic achievement (Besharat 2009; Yang and Jung 2010).

Hewitt and Flett (1991) have distinguished perfectionism into three dimensions: (1) self-oriented perfectionism (setting high standards for oneself and strictly evaluating oneself), (2) other-oriented perfectionism (setting high standards for others and demanding others to be perfect), and (3) socially prescribed perfectionism (strictly evaluating oneself in hopes to satisfy the standards imposed by others on oneself). Interestingly, ensuing studies have found that each dimension does not exert equal influence on career indecision. Socially prescribed perfectionism has a negative effect on career certainty (Lee 2011b; Lee and Lee 2009), and it exerts a direct influence on generalized indecision by way of anxiety, frustration, and low self-esteem (Burka and Yuen 1990). On the other hand, because self-oriented perfectionism is positively correlated with elevated levels of self-control and other positive emotions (Flett et al. 1991), it is expected to play a positive role in establishing goals and planning their execution. In fact, Lee (2011b)'s study involving Korean college students found that self-oriented perfectionism has a positive effect on career decision making. Along with self-oriented perfectionism, others-oriented perfectionism has been understood as a component of "positive striving" (Frost et al. 1993), and positively affects career decision making (Lee 2011b).

The above findings suggest that separately examining the effect of each dimension of perfectionism on college students' career decision making could be useful in identifying specific interventions. However, labeling socially prescribed perfectionism as "maladaptive" and self-oriented perfectionism and others-oriented perfectionism as "adaptive" when discussing career indecision may be too simplistic. For instance, there are individuals with an elevated level of socially prescribed perfectionism, who are nonetheless able to make career decisions early on and not let the trait be a barrier to career development. In a collectivist society such as Korea, goal-oriented actions and achievement motivations

hinge heavily on the "group," as opposed to the "individual." In collectivist cultures, society's and others' expectations imposed on the individual are commonplace and considered natural and normal (Maehr and Nicholls 1980). Therefore, it is difficult to conclude that socially prescribed perfectionism has a unilaterally negative influence on individuals. In fact, some individuals in collectivist cultures use others' expectations and standards (a component of socially prescribed perfectionism) as a driver of personal achievement.

In a similar vein, although self-oriented perfectionism contributes to establishing personal goals, it can trigger a great deal of stress in competitive situations (Hong et al. 2008). In the context of achievement, an elevated level of performance stress triggers negative emotions (Hewitt et al. 1996). Although self-oriented perfectionism has a positive element, it is likely to be dysfunctional in excess. For instance, a person's incredibly high career standards would make it difficult for the person to find an occupation that satisfies them, which would consequently drive up his/her stress levels.

As mentioned previously, it is difficult to explain the effects of each dimension of perfectionism on career indecision and career stress in simplistic terms. The suggestion that heterogeneity exists within a group of self-oriented perfectionists or socially prescribed perfectionists (Kim et al. 2009), and that self-oriented perfectionism and socially prescribed perfectionism each contains two subscales, supports this claim (Campbell and Paula 2002). In other words, whether perfectionism will have a negative or positive effect on career indecision and stress will depend on the person. Therefore, this study employed a mixture regression analysis in order to classify perfectionists into its subpopulation groups. In a mixture regression analysis, it is assumed that the effects of independent variables on dependent variables differ across subpopulation groups. This method of analysis calculates the coefficient for each subpopulation group and examines their characteristics. In a mixture regression analysis, a subpopulation group is generally referred to as a class.

Self-esteem as an influencing factor explaining class differentiation

Although the characteristics of each class may be distinguished by the degree of each perfectionism dimension, they can also be distinguished by other variables. The current study investigated whether self-esteem and coping styles can be used to differentiate classes.

Self-esteem is a person's overall positive perception of self (Rosenberg 1965), and is known to act as a buffer against the negative effects of behavioral and psychological problems (Owens et al. 2001). Even if a person sets unrealistically ambitious standards for himself/herself and obsesses over meeting them, the person's positive evaluation of self can blunt the negative impact of failing to meet those standards. Previous studies found that robust self-esteem buffers the negative effects of maladaptive perfectionism on depression (Rice et al. 1998), stress (Shin and Kim 2015), and mental health (Kim and Lim 2015). In sum, healthy self-esteem protects an individual from frustration and fear of failure, and may mitigate the forces that can interfere with career decision making or produce excessive career stress.

Stress coping style as an influencing variable that explains class differentiation

Researchers who emphasize the role of coping style in responding to a stressful situation (Brissette et al. 2002) suggest that perfectionism interacts with coping style to influence levels of career stress. This claim is supported by Chung and Lee (2012), who reported that coping style moderates the effects of perfectionism on mental health, and Kang et al. (2011), who reported that coping style mediates the relationship between perfectionism and mental health.

Like many others, a perfectionist faces various stressors in the process of making career decisions, such as striving to meet the standards imposed by others, obsessing over making the best possible decisions, and experiencing failure associated with preparation and decision making. A perfectionist who has a coping style that encourages him/her to tackle the problem directly will be inclined to continue the path of career seeking and to pursue more information. However, a perfectionist with a coping style that encourages avoidance will be inclined to defer negative outcomes or make hasty and irrational decisions.

Summary of research question

In summary, the purpose of this study was to first identify whether college students can be classified into different latent classes according to how their perfectionism affect their career stress and indecision, and see how the sub-factors of perfectionism influence career stress and indecision for each latent class. Second, this study sought to examine how self-esteem and stress coping style of an individual affect the latent class classification. To this end, a path diagram (Fig. 1) was created. In the path diagram, the correlations between the independent variables and the correlations between the dependent variables have been omitted for conciseness. Study questions and hypotheses were formulated as follows.

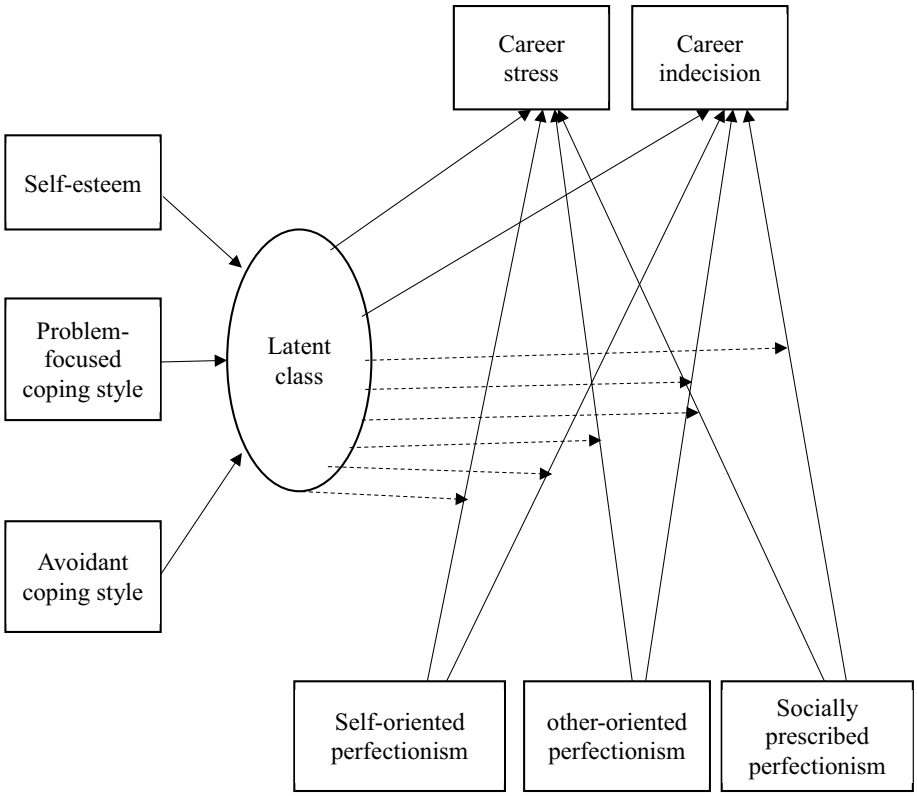

Fig. 1 Study model's path diagram

Study question 1 Concerning perfectionism's effect on career indecision and career stress, how many classes can college students be divided into?

Hypothesis 1 Korean college students will be classified into different latent classes according to how their perfectionism affects their career stress and indecision.

Study question 2 How do self-oriented perfectionism, others-oriented perfectionism, and socially prescribed perfectionism influence career indecision and career stress in each class?

Hypothesis 2 In each latent class, self-directed perfectionism, others-oriented perfectionism, and socially prescribed perfectionism will have different effects on career stress and indecision.

Study question 3 How do self-esteem, problem-focused coping style, and avoidant coping style influence class differentiation?

Hypothesis 3 Self-esteem and stress coping style will have a significant impact on the classification of latent classes.

Methods

Participants

To address the study questions, a survey was conducted at 11 universities located across Seoul, Gyeong-gi, and Yeongnam provinces in Korea. The researchers visited each university campus and recruited students at the school library or cafeteria to complete the survey. The students who consented to participate were provided with an explanation of the purpose of the study and a gift worth about 1 USD upon survey completion. The participants were also informed in advance that if they wanted to quit the survey, they could do so any time.

481 undergraduate students participated in the survey; however, five students were eliminated due to incomplete responses. Therefore, 476 responses were included in the final analysis (224 women (47.1%), 251 men (52.7%), and 1 unknown (no response); $M_{age} = 21.24 \pm 2.38$ years). Concerning the grade level, 139 were freshmen (29.2%), 77 were sophomores (16.2%), 88 were juniors (18.5%), 160 were seniors (33.6%), and 11 were "others" (2.3%). The distribution of students' academic discipline was 98 (20.6%) from the College of Humanities, 112 (23.5%) from the College of Social Science, 63 (13.2%) from the College of Education, 105 (22.1%) from the College of Natural Science, 75

(15.8%) from the College of Engineering, and 23 (4.8%) from the College of Liberal Studies or others.

Measures

In order to validate the measures, the participant sample was divided into two groups of 161 and 230, and exploratory factor analysis and confirmatory factor analysis were conducted on each group, respectively.

Perfectionism

To measure respondents' perfectionism traits, the Multidimensional Perfectionism Scale (MPS) developed by Hewitt and Flett (1991) was used. The MPS consists of the following three subscales: self-oriented perfectionism, others-oriented perfectionism, and socially prescribed perfectionism. Each subscale contained 15 items. As previously confirmed by Hewitt and Flett (1991)'s study, the exploratory factor analysis done in the current study also revealed that a three-factor structure was the most fitting. The item-factor structure was consistent with the previous study as well. In the confirmatory factor analysis carried out in the current study, all model fit criteria (RMSEA = .06, CFI = .95, TLI = .95, SRMR = .05) were acceptable and all factor loadings exceeded the general standard of .40 (Wang and Wang 2012). For self-oriented perfectionism, the tendency to set incredibly high personal standards and the need to handle every situation perfectly were measured. For others-oriented perfectionism, the tendency to set exceedingly ambitious standards for others and the need to critically evaluate others for their performance were measured. For socially prescribed perfectionism, others' expectations of "me" and the level of pressure "I" put on to meet those expectations were measured.

Each item of the MPS was measured on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*); the higher the score, the higher the level of perfectionism. Eighteen of the 45 items were reverse-scored. In Hewitt and Flett (1991)'s study, MPS had an internal item consistency of Cronbach's αs = .82, .86, and .87 for self-oriented perfectionism, others-oriented perfectionism, and socially prescribed perfectionism, respectively. In the current study, the Cronbach's αs were computed as .82, .76, and .73, respectively.

Career indecision

To measure the level of career indecision, the Career Decision Scale (CDS), developed by Osipow et al. (1976), was used. The first two items of the scale measured the level of career certainty and the remaining 16 items measured the level of career indecision. The 18 items were self-scored on a 4-point Likert scale (1 = *strongly disagree*, 4 = *strongly agree*). In the present study, this factor structure was confirmed through exploratory factor analysis, and the model fit (RMSEA = .04, CFI = .97, TLI = .97, SRMR = .03) and factor loading (.47 ~ .80) results all met the acceptable criteria (Wang and Wang 2012). The CSD contained a free-response item; however, it was excluded from the data analysis, for it is difficult to quantify. Items measuring career certainty were reverse-scored, with higher scores indicating a higher level of indecision. In this study, the internal item consistency was computed using Cronbach's α with a value of .89.

Career stress

To measure the level of career stress, the Career Stress Inventory (CSI), which was devised by Park (2009), was used. The CSI consisted of the five following subscales: employment pressure, insufficient information, career uncertainty, internal conflict, and external conflict. Each subscale consisted of 5 items scored on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). This five-factor structure was confirmed through a factor analysis in Park (2009)'s study. In the present study, a five-factor structure was also found to be most appropriate and the item-factor structure was consistent with Park (2009)'s study. In the confirmatory factor analysis implemented in the present study, all model fit criteria (RMSEA = .04, CFI = .97, TLI = .96, SRMR = .04) were acceptable and all factor loadings exceeded the general standard of .40 (Wang and Wang 2012). None of the items were reverse-scored; higher scores indicated a higher level of career stress. Park's study reported an internal item consistency of Cronbach's αs = .87 for employment pressure, .89 for insufficient information, .92 for career uncertainty, .70 for internal conflict, and .79 for external conflict. In the present study, αs computed were .89, .91, .92, .63, and .78, respectively.

Self-esteem

To measure self-esteem, the Rosenberg Self-Esteem Scale (RSE) developed by Rosenberg (1965) was used. The RSE consisted of ten items designed to measure the degree of positive self-perception and self-respect. The items were measured on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Five items were reversed scored; higher scores indicate higher levels of self-esteem. In the current study, exploratory analysis revealed a single factor structure, and the factor loading exceeded .60. The internal item consistency was computed as Cronbach's α = .89 after excluding Item 8. Lee et al. (Lee et al. 2009) have noted that when using the translated version of RSE in Korea, Item 8 (e.g., I wish I could have more respect for myself.) tended to decrease the overall reliability and showed low correlations

with other items. Thus, Item 8 was omitted in the present study.

Stress coping strategy

To measure stress coping strategy, the Coping Strategy Indicator (CSI), developed by Amirkhan (1990), was used. For the CSI, respondents were asked to answer the items based on the way he/she responded to a recent stressful situation. The scale consisted of the following three subscales: problem-focused coping style, avoidant coping style, and social support-seeking coping style. Each subscale contained 11 items. In the present study, this factor structure was again confirmed through exploratory factor analysis, and the model fit criteria (RMSEA = .06, CFI = .96, TLI = .95, SRMR = .05) and factor loading (.43 ~ .78) results all met the acceptable criteria (Wang and Wang 2012). For this study, the social support-seeking coping style subscale caused a convergence problem, so only the problem-focused coping style and avoidant coping style subscales were used in the final analysis. For problem-focused coping style, the degree that a person actively and practically tackles the stressors was measured (e.g., Did you try different ways to solve the problem until you found one that worked?). For avoidant coping style, the degree that a person distances him/herself from the problem and ignores it was measured (e.g., Did you ignore the problem and turn your focus elsewhere?).

All items were designed to be self-scored on a 3-point Likert scale (1 = *not at all*, 3 = *a lot*). The internal item consistency reported in Amirkhan (1990) was Cronbach's αs = .89 for problem-focused coping and .84 for avoidant coping. In the present study, the computed Cronbach's αs were .89 and .76, respectively.

Data analysis

To identify the effects of perfectionism traits on career stress and career indecision, the current study conducted a mixture regression analysis using M*plus* 7.1. Unlike a traditional regression analysis, a mixture regression analysis assumes that independent variables' effects vary across classes. A mathematical equation expressing these characteristics is presented below.

$$y_i = \begin{cases} x_i^T \beta_1 + e_{i1} & with\ probability\ \pi_1 \\ x_i^T \beta_2 + e_{i2} & with\ probability\ \pi_2 \\ \vdots & \vdots \\ x_i^T \beta_K + e_{iK} & with\ probability\ \pi_K \end{cases}$$

In the equation above, y_i represents the dependent variable's value responding to the *i*th measurement, while $(k = 1 \ldots K)$ represents the number of classes. In other words, there are a total of K number of classes. x_i^2 is a row vector with $p+1$ number of rows, and it represents the value of independent variables responding to the *i*th measurement (the number of independent variables is p, and the first element of x_i^2 is 1). β_k $(k = 1 \ldots K)$ is a column vector with $p+1$ number of columns, and it represents the regression coefficient of each class. π_k is the unconditional probability that a case will belong in class k. Since the present model has three independent variables, $p = 3$; because it has two dependent variables, the above univariate model was expanded to a multivariate model.

To determine the number of classes, information criteria such as AIC (Akaike 1987), the BIC (Schwarz 1978), and the ABIC (Sclove 1987) were compared, and the Lo–Mendell–Rubin (LMR LRT; Lo et al. 2001) results and the bootstrap likelihood ratio test results (BLRT; McLachlan 1987) were examined. For AIC, BIC, ABIC, smaller values indicate better model. Many studies (Collins et al. 1993; Magidson and Vermunt 2004; Nylund et al. 2007) have reported that BIC results are the most reliable among the information criterion indices. A model with $k-1$ classes and a model with k classes are in a hierarchical relationship. However, the two models' $-2 \times$LRT does not follow a χ^2 distribution (Collins and Lanza 2010; McLachlan and Peel 2000). For this reason, Lo et al. (2001) suggested the LMR LRT, which uses an adjusted distribution based on a study by Vuong (1989). However, the method's mathematical flaw was later noted by Jeffries (2003), and LMR LRT was also found to have experiential flaws (Everitt et al. 2011). On the other hand, BLRT incorporates parametric bootstrapping and LRT to predict the distribution of LRT test statistics through a bootstrap sample. Both LMR LRT and BLRT suggest that significant outcomes dismiss the $k-1$ class model and accept the k-class model. According to Nylund et al. (2007)'s simulation study, BLRT yielded far superior results to LMR LRT.

In addition to the above, entropy (Celeux and Soromenho 1996) or relative entropy (REN; Ramaswamy et al. 1993) are used to detect the optimal number of classes. In the case of entropy or REN, however, class assignment error may simply be influenced by the number of classes. For this reason, Collins and Lanza (2010) suggested that entropy-based indices may not be sufficient to determine the number of classes. Therefore, this study did not use the entropy-based indices as standards to determine the number of classes in this study.

The maximum likelihood estimation with robust standard errors was used to estimate the number of parameters. To prevent the estimated maximum likelihood from becoming the local maximum value, random initial values were set at 1000:250 during the initial optimization process and the final process. Also, to determine whether the same results might be obtained from subsequent analyses, each analysis was performed three times.

Table 1 Correlations between observed variables

	Self-esteem	Problem-focused coping	Avoidant coping	Self-oriented perfectionism	Others-oriented perfectionism	Socially prescribed perfectionism	Career indecision	Career stress
Self-esteem	–							
Problem-focused coping	.36**	–						
Avoidant coping	−.37**	−.20**	–					
Self-oriented perfectionism	.01	.29**	−.03	–				
Others-oriented perfectionism	−.04	.13**	−.05	.43**	–			
Socially prescribed perfectionism	−.40**	−.07	.29**	.42**	.30**	–		
Career indecision	−.35**	−.17**	.31**	−.03	−.07	.23**	–	
Career stress	−.35**	−.09	.35**	.02	−.04	.30**	.78**	–

**$p < .01$

In addition, a multinomial logistic regression analysis was performed to verify the factors exerting important effects in the process of subtype differentiation. For secondary analysis of mixed models that assume the presence of subgroups within a heterogeneous group (such as the latent class analysis), Wang and Wang (2012) suggested a logistic regression analysis. Unlike discriminant analysis, which is traditionally used to analyze categorically dependent variables, a multivariate logistic regression analysis has the advantage of incorporating multiple analysis methods. In addition, whereas the basic assumption of discriminant analysis is multivariate normal distribution, a logit model does not require such an assumption, which allows for a wider scope of application (Hong 2005). Therefore, the present study performed a multivariate logistic regression analysis as the secondary analysis following the latent class analysis.

Results

Correlations between observed variables

Table 1 displays the correlation coefficients between the observed variables. College students with an elevated level of self-oriented perfectionism tended to have a problem-focused coping style ($p < .00$); however, no significant link was found between self-oriented perfectionism and the career variables ($p = .53$, $p = .46$ respectively). Self-oriented perfectionism was not found to be significantly correlated with self-esteem or avoidant coping style ($p = .86$, $p = .49$, respectively).

Others-oriented perfectionism exhibited correlation patterns like those that were observed in self-oriented perfectionism; however, socially prescribed perfectionism exhibited slightly different patterns of correlations. Socially prescribed perfectionism tended to decrease as self-esteem increased and avoidant coping style decreased (both $ps < .00$). On the other hand, career indecision and career stress increased as socially prescribed perfectionism increased (both $ps < .00$). Self-esteem had a significant correlation with the career variables; career indecision and career stress decreased as self-esteem increased (both $ps < .00$).

The problem-focused coping style significantly correlated with career indecision ($p < .00$); career indecision decreased as problem-focused coping style increased. However, it was not significantly correlated with career stress ($p = .06$). On the other hand, avoidant coping style exhibited significant correlations with both career indecision and career stress (both $ps < .00$).

Number of classes

To identify the optimal number of classes that the subjects may be distinguished into per the effects of perfectionism on career stress and career indecision, the current study examined the information criterion and likelihood ratio test results while successively increasing the number of classes.

Regarding the information criterion, all values decreased until a model with four classes were reached. The LMR-LRT results regarding the 4-class model were not significant ($p = .24$). However, the BLRT results were significant

Table 2 The result of the LPA: the number of latent classes

Classes	AIC	BIC	ABIC	LMR-LRT *p* value	BLRT *p* value
1	18225.26	18295.71	18241.75	–	–
2	7661.64	7556.41	7683.41	< .01	< .01
3	7645.84	7790.05	7678.98	.65	.03
4	7632.89	7826.54	7677.38	.24	.05
5	7628.94	7872.04	7684.80	.51	.47

($p = .05$). On the other hand, BIC and AIC increased in the 5-class model compared to the 4-class model, and LMR-LRT and BLRT results were not significant ($p = .51$, $p = .47$, respectively). As such, indicators for determining the number of latent classes produced differing results. However, as discussed in the data analysis section, BIC and BLRT are known to produce the most reliable results. Therefore, the 4-class model was selected based on the BIC and BLRT results in this study. Table 2 show the result of the LPA.

Descriptive statistics by class

Table 3 displays the proportion of each class and their descriptive statistics.

Perfectionism's effect on career indecision and career stress

Table 4 displays the estimated effects of perfectionism on career stress and career indecision, as well as the verified results. For ease of interpretation, only significant results were summarized as follows. Regarding class 1, self-oriented perfectionism exerted a significant effect on career indecision ($p = .05$). However, increasing socially prescribed perfectionism significantly contributed to increasing career stress ($p = .04$). Perfectionism explained 11% and 13% of the career stress and career indecision variance, respectively. In this class, self-directed perfectionism positively affected career indecision, and socially prescribed perfectionism positively affected career stress levels. Thus, class 1 was named the "Self-Oriented Perfectionism Positive and Socially Prescribed Perfectionism Positive group (SOPP & SPPP group)."

Regarding class 2, the higher the level of self-oriented perfectionism, the greater the level of perceived career stress ($p = .03$). The effect of others-oriented perfectionism on career stress and career indecision showed a contrasting pattern to those associated with self-oriented perfectionism, and the estimated values were all significant (both $ps = .00$). Perfectionism explained 44% and 30% of career stress variance and career indecision variance, respectively. In this class, self-directed perfectionism positively affected career stress, and other-oriented perfectionism negatively affected career stress and indecision levels. Thus, class 2 was named the "Self-Oriented Perfectionism Positive and Other-Oriented Perfectionism Negative group (SOPP & OOPN group)."

Regarding class 3, only others-oriented perfectionism exerted a significant effect on career stress and career indecision ($p = .02$, $p = .00$, respectively). As for the direction of the effects, college students with an elevated level of others-oriented perfectionism tended to perceive an elevated level of career stress, and appeared to have trouble choosing a career path. Perfectionism explained 40% and 27% of career stress variance and career indecision, respectively. In this class, other-oriented perfectionism positively affected career stress and indecision levels. Thus, class 3 was named the "Other-Oriented Perfectionism Positive group (OOPP group)."

Finally, regarding class 4, others-oriented perfectionism was negatively correlated with both career stress and career indecision ($p = .00$). Socially prescribed perfectionism exerted a significant effect on only career stress, and a higher level of socially prescribed perfectionism was correlated with a higher level of career stress ($p = .00$). Perfectionism explained 55% and 57% of career stress variance and career indecision variance, respectively. In this class, other-oriented perfectionism negatively affected career stress and indecision levels, and socially prescribed perfectionism positively affected career stress levels. Thus, class 4 was named the "Other-Oriented Perfectionism Negative and

Table 3 Class sizes and mean scores

Class	Proportion (%)	Self-oriented perfectionism	Others-oriented perfectionism	Socially prescribed perfectionism	Career stress	Career indecision
Class 1	21.37	68.43 (SD = 16.13)	57.42 (SD = 12.18)	57.09 (SD = 10.79)	65.11 (SD = 16.92)	40.56 (SD = 10.19)
Class 2	26.80	63.43 (SD = 11.03)	57.49 (SD = 10.21)	59.34 (SD = 8.61)	111.92 (SD = 18.57)	73.88 (SD = 13.76)
Class 3	32.87	68.08 (SD = 13.14)	58.13 (SD = 10.48)	60.81 (SD = 8.86)	110.84 (*SD* = 18.94)	74.21 (SD = 13.7)
Class 4	18.96	67.65 (SD = 14.99)	59.37 (SD = 12.85)	55.22 (SD = 9.04)	72.99 (SD = 20.10)	55.64 (SD = 14.95)

SD standard deviation

Table 4 Estimated regression coefficients and verified statistics

Model	Pathway	EV	SE	*t*	SEV	R^2
Class 1	Career stress ← SOP	− .19	.14	− 1.35	− .17	.11
Class 1	Career stress ← OOP	.39	.24	1.65	.28	.11
Class 1	Career stress ← SPP	.43	.21	2.09*	.25	.11
Class 1	Career indecision ← SOP	.25	.12	2.03*	.36	.13
Class 1	Career indecision ← OOP	− .23	.14	− 1.66	− .26	.13
Class 1	Career indecision ← SPP	.14	.13	1.10	.13	.13
Class 2	Career stress ← SOP	.66	.03	2.20*	.41	.44
Class 2	Career stress ← OOP	− 1.04	.25	− 4.18**	− .53	.44
Class 2	Career stress ← SPP	− .05	.36	− .13	− .02	.44
Class 2	Career indecision ← SOP	.34	.24	1.44	.29	.30
Class 2	Career indecision ← OOP	− .94	.16	− 5.86**	− .67	.30
Class 2	Career indecision ← SPP	.35	.27	1.31	.22	.30
Class 3	Career stress ← SOP	− .29	.22	− 1.31	− .20	.40
Class 3	Career stress ← OOP	.69	.29	2.36*	.39	.40
Class 3	Career stress ← SPP	.69	.43	1.62	.33	.40
Class 3	Career indecision ← SOP	− .18	.15	− 1.21	− .18	.27
Class 3	Career indecision ← OOP	.80	.18	4.47**	.64	.27
Class 3	Career indecision ← SPP	.15	.23	.66	.10	.27
Class 4	Career stress ← SOP	.10	.30	.34	.06	.55
Class 4	Career stress ← OOP	− 1.47	.18	− 8.01**	− .69	.55
Class 4	Career stress ← SPP	1.31	.47	2.80**	.49	.55
Class 4	Career indecision ← SOP	− .41	.28	− 1.46	− .38	.57
Class 4	Career indecision ← OOP	− .78	.18	− 4.35**	− .59	.57
Class 4	Career indecision ← SPP	.59	.49	1.20	.35	.57

SE standard error, *SEV* standardized estimated value, *EV* estimated value, *SOP* self-oriented perfectionism, *OOP* other-oriented perfectionism, *SPP* socially prescribed perfectionism

*p < .05, *p < .01

Socially Prescribed Perfectionism Positive group (OOPN & SPPP group)."

The effects of both self-esteem and coping style on class differentiation

Table 5 displays the effects of self-esteem and coping style in classifying the participants into different classes. The graph in Fig. 2 displays the probability of being grouped into each class according to the level of self-esteem. According to Fig. 2, the higher the level of self-esteem, the more significantly likely that the person would be grouped into SOPP & SPPP group (class 1). Verification results (Table 5) indicated that the lower the level of self-esteem, the higher the likelihood of the person belonging to SOPP & OOPN group (class 2) or OOPP group (class 3) (both $p < .05$) rather than SOPP & SPPP group (class 1). The likelihood of the person belonging to OOPN & SPPP group (class 4), compared to SOPP & SPPP group (class 1), was not significantly high ($p > .5$).

The graph in Fig. 3 represents the probability of belonging to each class according to problem-focused coping style. According to the graph, an increasing degree of problem-focused coping style raises the likelihood of belonging to OOPP group (class 3) or SOPP & SPPP group (class 1). However, it decreased the likelihood of belonging to SOPP & OOPN group (class 2) or OOPN & SPPP group (class 4). Nevertheless, specific test results in Table 5 showed that such a tendency was insignificant ($p > .05$).

The graph in Fig. 4 represents the probability of belonging to each class according to the level of avoidant coping style. The graph indicates that college students with a greater level of avoidant coping style have a higher likelihood of belonging to OOPP group (class 3) but are less likely to belong to OOPN & SPPP group (class 4). As students displayed more avoidant coping, the likelihood of belonging to SOPP & SPPP group (class 1) or SOPP & OOPN group (class 2) gradually increased and then gradually decreased again. Regarding statistical verification in Table 5, college students with a more avoidant coping style were significantly more likely to belong in OOPP group (class 3) than in SOPP & SPPP group (class 1) or OOPN & SPPP group (class 4) ($p = .04$, $p = .03$, respectively). However, the more students engaged in avoidant coping, the likelihood that they

Table 5 Verification of variables influencing class differentiation

Reference class	Comparison class	Explanatory variable	Estimated value	SE	*t*
Class 1	Class 2	Self-esteem	−.10	.03	−3.416**
Class 1	Class 2	Problem-focused coping	−.04	.03	−.12
Class 1	Class 2	Avoidant coping	.02	.04	.56
Class 1	Class 3	Self-esteem	−.09	.03	−2.87**
Class 1	Class 3	Problem-focused coping	<.01	.03	−.01
Class 1	Class 3	Avoidant coping	.06	.03	2.11*
Class 1	Class 4	Self-esteem	−.09	.05	−1.59
Class 1	Class 4	Problem-focused coping	−.27	.04	−.69
Class 1	Class 4	Avoidant coping	−.08	.07	−1.14
Class 2	Class 3	Self-esteem	.01	.03	.05
Class 2	Class 3	Problem-focused coping	.04	.03	1.14
Class 2	Class 3	Avoidant coping	.04	.04	.88
Class 2	Class 4	Self-esteem	.02	.05	.35
Class 2	Class 4	Problem-focused coping	.04	.03	.23
Class 2	Class 4	Avoidant coping	−.10	.05	−1.82
Class 2	Class 4	Self-esteem	.01	.05	.10
Class 3	Class 4	Self-esteem	.01	.05	.10
Class 3	Class 4	Problem-focused coping	−.03	.03	−.82
Class 3	Class 4	Avoidant coping	−.13	.06	−2.22*

SE standard error

*p < .05, *p < .01

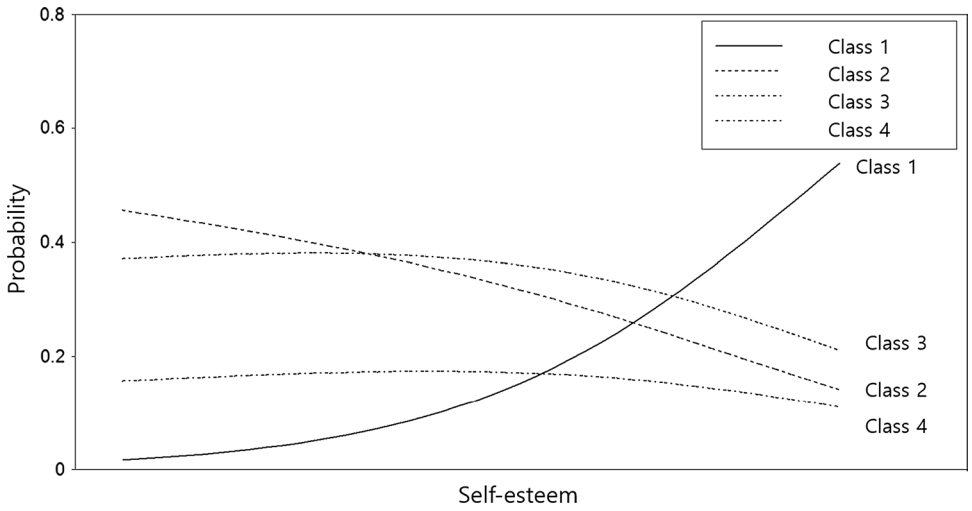

Fig. 2 Class likelihood according to level of self-esteem

would belong to OOPN & SPPP group (class 4) rather than to SOPP & SPPP group (class 1) or the likelihood that they would belong to OOPN & SPPP group (class 4) rather than SOPP & OOPN group (class 2) were not statistically significant (*ps* > .05).

Discussion

The three main purposes of the present study were (1) to examine whether college students might be differentiated into subgroups according to how perfectionism influenced career stress and career indecision; (2) to examine the effects of each dimension of perfectionism on career stress and career indecision across the subgroups; (3) to verify whether self-esteem and coping style might be used as predictors of subgroup differentiation.

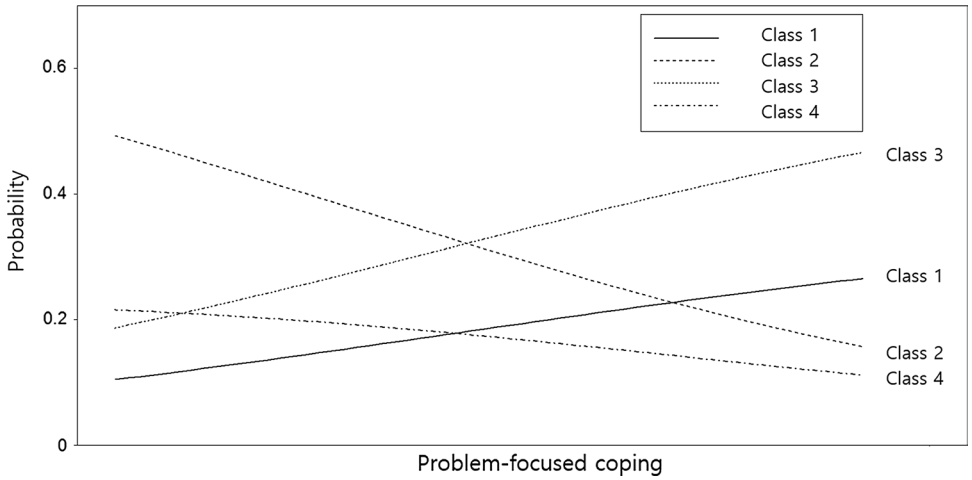

Fig. 3 Class likelihood according to level of problem-focused coping

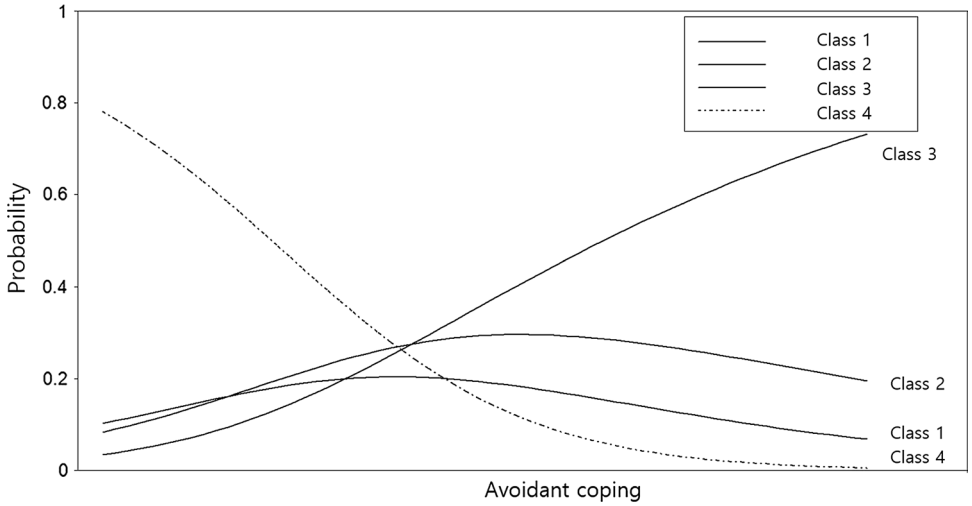

Fig. 4 Class likelihood according to avoidant coping

First, the results of this study indicated that college students could be grouped into four classes according to how perfectionism influenced career stress and career indecision. The SOPP & SPPP group (class 1) had the lowest mean scores for career stress and career indecision. In this class, career indecision increased as self-oriented perfectionism increased, and career stress increased as socially prescribed perfectionism increased. On the other hand, the effect of others-oriented perfectionism on career stress and career indecision was insignificant. The SOPP & OOPN group (class 2) had the highest mean score for career stress and the second highest mean score for career indecision. In this class, career stress level increased as self-oriented perfectionism increased, whereas both career stress and career indecision decreased as others-oriented perfectionism increased. The effect of socially prescribed perfectionism on career stress and career indecision was insignificant in this class. The OOPP group (class 3) had the highest mean score for career indecision and the second highest mean score for career stress. In this class, both career stress and career indecision increased as others-oriented perfectionism increased. However, the effects of self-oriented perfectionism and socially prescribed perfectionism on career indecision and stress were insignificant. The OOPN & SPPP group (class 4) had the second lowest mean scores for career indecision and career stress. In this class, career stress and career indecision decreased as others-oriented perfectionism increased, whereas career stress increased as socially prescribed perfectionism increased. The effects of self-oriented perfectionism on career stress and indecision were insignificant.

Secondly, the study results indicated that college students may be distinguished into classes based not only on the levels of career stress and career indecision, but also on how perfectionism influenced career stress and career indecision. Despite the similarities between classes regarding the levels of career stress and career indecision (SOPP & OOPN group and OOPP group, SOPP & SPPP group and OOPN & SPPP group), the way individuals were affected by perfectionism varied. Specifically, to examine the diverse ways by which perfectionism traits influenced career stress and career

indecision for each class, the SOPP & OOPN group (class 2) and the OOPP group (class 3) were compared first. Again, the SOPP & OOPN group (class 2) had the highest career stress mean score and the second highest career indecision mean score, while the OOPP group (class 3) had the second highest career stress mean score and the highest career indecision mean score. Against other classes, the two classes exhibited sizeable differences in both the average career stress score and average career indecision score. However, against each other, the two groups exhibited negligible class differences in both. This suggests that the average career stress and indecision scores are insufficient determining criteria when distinguishing the two classes. On the other hand, different patterns were observed between the SOPP & OOPN group (class 2) and the OOPP group (class 3) regarding how perfectionism dimensions influenced career stress and career indecision. In the case of SOPP & OOPN group (class 2), as others-oriented perfectionism increased, the levels of career stress and career indecision decreased. In the OOPP group (class 3), however, the levels of career stress and career indecision increased as others-oriented perfectionism increased. In other words, others-oriented perfectionism served as an adaptive trait that served to decrease career stress and indecision in the SOPP & OOPN group (class 2), while it served as a maladaptive trait in OOPP group (class 3). This finding indicated that others-oriented perfectionism can have both positive and negative effects on career variables depending on class characteristics.

These results are consistent with the findings from existing studies, where others-oriented perfectionism has been reported to have both adaptive and maladaptive aspects. In fact, Stoeber et al. (2015)'s study verified the link between others-oriented perfectionism and narcissism. Narcissism, which can be distinguished into grandiose narcissism and vulnerable narcissism, can exhibit either a positive or negative correlation with explicit self-esteem. Whereas grandiose narcissism shows a positive relationship with explicit self-esteem (Rosenberg 1965), vulnerable narcissism shows a negative relationship with explicit self-esteem (Pincus et al. 2009). As such, it can be expected that others-oriented perfectionism, which is linked to narcissism, can either exhibit a positive or negative relationship with explicit self-esteem depending on the individual's specific narcissism trait. It means that the way others-oriented perfectionism manifests itself can vary by personality traits such as narcissism. Differently put, the way others-oriented perfectionism influences career stress and indecision can also vary across the four classes found in this study. Especially, the effect of others-related perfectionism varied across the subgroups within a group characterized by high career indecision and career stress. Therefore, when counseling an individual who exhibits high career indecision and career stress, it would be worth noting that others-oriented perfectionism can either have a positive or negative effect on the individual's career-related variables.

Next, the current study examined the differences in the effects of perfectionism between the SOPP & SPPP group (class 1) and the OOPN & SPPP group (class 4). These two groups both exhibited relatively low career stress and career indecision levels, indicating that the two variables were not sufficient in differentiating the two classes. However, the two classes exhibited distinct characteristics regarding the way each perfectionism dimension influenced career stress and career indecision. The OOPN & SPPP group (class 4), similar to the SOPP & OOPN group (class 2), showed decreasing levels of career stress and career indecision when others-oriented perfectionism increased, indicating that the trait served an adaptive role. However, in the SOPP & SPPP group (class 1), the effect of others-oriented perfectionism on career-related variables was insignificant. In the OOPN & SPPP group (class 4), socially prescribed perfectionism exerted a positive effect on career stress; however, the effect of self-oriented perfectionism was not significant. Regarding the SOPP & SPPP group (class 1), career stress increased as socially prescribed perfectionism increased, which was similar to what was observed in the OOPN & SPPP group (class 4). However, the effect of self-oriented perfectionism on career indecision was significant in this class. In other words, in the OOPN & SPPP group (class 4), others-oriented perfectionism played an adaptive role, but socially prescribed perfectionism played a maladaptive role regarding career stress and career indecision. On the other hand, in the SOPP & SPPP group (class 1), both self-oriented perfectionism and socially prescribed perfectionism had a maladaptive effect on the career variables. The effects of self-oriented perfectionism and socially prescribed perfectionism on career variables were either significant or insignificant depending on the class. When their effects were significant, however, they were maladaptive.

Similar to others-oriented perfectionism, self-oriented perfectionism, too, can play either an adaptive or maladaptive role. Self-oriented perfectionism has been linked to maladaptive anxiety (Flett et al. 1989), anorexia nervosa (Cooper et al. 1985; Garner et al. 1983), and depression (Hewitt and Flett 1991). Such a pattern also emerged in the career front. On the other hand, in a study by Frost et al. (1993), who conducted a factor analysis for Hewitt and Flett (1991)'s MPS, self-oriented perfectionism was categorized as a positive striving factor. In the same study, a correlation analysis performed with PANAS (The Positive and Negative Affect Schedule), a scale measuring mood and emotion, found that self-oriented perfectionism was positively correlated with the positive affect subscale. The present study, however, only confirmed that the significance of self-oriented perfectionism's effect on career variables varied across classes, and that in classes where the effect was found to be significant,

the effect was maladaptive in nature. More specifically, in classes with low career stress and career indecision scores (such as the SOPP & SPPP group), self-oriented perfectionism contributed to procrastination of career decision making. On the other hand, in classes with elevated levels of career stress and career indecision (such as the SOPP & OOPN group), self-oriented perfectionism contributed to emotional stress. This goes to show that when classes are differentiated by career variables such as career stress and career indecision, self-oriented perfectionism serves a maladaptive role in some of the classes, by contributing to negative emotions and procrastinating behaviors pertaining to career development. Findings from past studies on career indecision, reporting that perfectionists' cognitive rigidity and negative perception have a deleterious effect on career decision (Frost and Shows 1993; Page et al. 2008), may only apply to certain subgroups of college students, rather than the entire population. Furthermore, the effect of socially prescribed perfectionism on career stress and career indecision was also significant only in certain classes. Socially prescribed perfectionism's effect was not significant in the SOPP & OOPN group (class 2) and the OOPP group (class 3) where the levels of career stress and career indecision were relatively high. Conversely, in the SOPP & SPPP group (class 1) and the OOPN & SPPP group (class 4) where the levels of career stress and career indecision were relatively low, the effect of socially prescribed perfectionism was significant as well as positive, but only on career stress, not career indecision. Socially prescribed perfectionism, unlike other dimensions of perfectionism, has strong maladaptive aspects (Besser et al. 2008; Burka and Yuen 1990). Cha (2016) stressed that, in a collectivist culture such as Korea, where the group comes before the individuals, socially prescribed perfectionism is closely tied to depression. Cha asserted that this is because socially prescribed perfectionists tend to be critical of themselves and express themselves in a maladaptive way, as they believe that they are accepted by others only when they meet others' expectations of them. Korea's collectivist culture is bound to amplify socially prescribed perfectionism's deleterious effect on college students' mental health. In the present study, however, negative emotions contributed by socially prescribed perfectionism, that is, its effect on career stress, could only be observed in certain classes. In classes with high career stress and career indecision, the effects of socially prescribed perfectionism were not significant. This implied that classes with a higher likelihood of seeking career counseling did not perceive socially prescribed perfectionism as a barrier to career decision or stress. Previous studies showed that socially prescribed perfectionism is linked to external factors such as parental expectations (Damian et al. 2013) and external motivation (Stoeber et al. 2009). Also, in fact, many individuals visiting career counseling services exhibited issues rooted in internal problems (such as lack of confidence in making a career decision or a lack of self-knowledge regarding what they are good at or what they wish to pursue), rather than the pressure to meet parental expectations. In a study by Jo et al. (2016), which compared the explanatory powers of external barriers and internal barriers (anxiety, etc.) as they pertained to career identity, it was found that internal factors exerted a greater influence. Furthermore, Kim and Chang (2014) reported that, because many college students in Korea have been raised by overprotective parents eager to intervene and shelter their children, these students tended to demand excessive external validation regarding the decisions they made in college and adulthood. These findings suggest that college students in Korea may be using others' expectations as a resource to validate their decisions.

Finally, the findings of the current study confirmed that self-esteem and coping style serve as predictor variables that can be used to differentiate classes. Self-esteem was useful in differentiating between the SOPP & SPPP group (class 1) and the SOPP & OOPN group (class 2), and between the SOPP & SPPP group (class 1) and the OOPP group (class 3). Specifically, a person with a higher level of self-esteem was more likely to belong in the SOPP & SPPP group (class 1) than in the SOPP & OOPN group (class 2) or the OOPP group (class 3). In other words, as self-esteem increased, the effect of others-oriented perfectionism on career indecision and stress diminished, and the effect of self-oriented perfectionism and socially prescribed perfectionism emerged.

Avoidant coping style, on the other hand, was useful in differentiating between the SOPP & SPPP group (class 1) and the OOPP group (class 3). A person with an avoidant coping style was more likely to belong in the OOPP group (class 3) than in the SOPP & SPPP group (class 1). As avoidant coping style increased, the effect of others-oriented perfectionism on career stress and indecision grew more maladaptive, and the effects of self-oriented perfectionism and socially prescribed perfectionism diminished.

These results suggest that self-esteem and avoidant coping style regulate the effects of perfectionism on career stress and indecision. Many researchers have identified self-esteem and avoidant coping style as mediating factors between maladaptive perfectionism and psychological distress (Dunkley et al. 2000; Dunn et al. 2006; Preusser et al. 1994; Rice et al. 1998). Self-esteem is a major psychological resource that acts as a buffer against stressors (Cast and Burke 2002). In this study, as the level of self-esteem increased, the influence of other-oriented perfectionism on career stress and indecision became nonsignificant. Considering that other-oriented perfectionism is related to narcissism, these results suggest that the higher the self-esteem, the greater the possibility that the influence of narcissistic characteristics on career stress and career indecision may disappear. Previous studies have also shown that stress coping is also a factor regulating

the influence of several other variables (Li et al. 2016; Dixon et al. 2016). The results of this study showed that avoidance coping regulates the influence of perfectionism on career stress and career indecision. Particularly, as the avoidance coping increased, other-oriented perfectionism seemed to have a positive effect on career stress and career indecision. This suggests that narcissistic traits may have a negative effect on the career decision making as the avoidance coping increases.

Theoretical and practical implications

This study showed that the effects of perfectionism on career indecision and career stress may be used to differentiate college students into subgroups. This finding may serve as a rational and experiential evidence against previous studies that offered opposing and contradicting views on the relationship between perfectionism and psychological distress. Secondly, this study also showed that each perfectionism dimension exerts varying effects on career decision/stress and other maladaptive behaviors across classes. Lastly, the findings of the study suggested the possibility of self-esteem and coping style as important variables in counseling that could regulate the influence of each perfectionism dimension on career indecision and career stress.

Based on these findings, the following suggestions can be made for career counselors. First, attention might be paid to the ways that others-oriented perfectionism contributes to the career-related issues for those seeking counseling. Others-oriented perfectionism's direction of influence differed between the two classes exhibiting high career stress and career indecision. This suggests that among individuals seeking career counseling services, some are negatively affected by others-oriented perfectionism trait (i.e., narcissistic tendency), while others are positively affected by the same perfectionism trait. Therefore, counselors would be wise to identify the specific correlation between these clients' others-oriented perfectionism and their career stress and indecision issue. For clients who have high levels of career stress or career indecision and also tend to set high standards for others, counselors need to check whether such characteristics are related to covert narcissism or low self-esteem. For clients with low self-esteem, helping them to develop a positive attitude toward self may help solve their career problems.

Second, counselors may need to focus more on their clients' internal issues, rather than on the external pressures they claim to face. Socially prescribed perfectionism was not found to influence career stress and indecision in classes exhibiting elevated levels of said stressors. This implies that although clients may complain about external stress and expectations, their trouble is more likely rooted in the lofty standards they hold themselves and others against. Therefore, when counseling clients with career indecision issues, counselors need to focus on internal, psychological factors rather than external barriers first, and help the clients to combat the excessively high standards they impose on themselves or correct their malformed thoughts about themselves.

Finally, counselors should adopt strategies designed to increase self-esteem or to correct avoidant coping style when helping clients deal with perfectionism and career-related issues. In the current study, others-oriented perfectionism diminished as self-esteem increased and avoidant coping style declined. Based on these results, counseling services need to reflect the understanding that self-esteem and coping style may buffer the negative effects of perfectionism. In other words, for clients who display other-oriented perfectionism, counselors may first have to provide interventions that can help enhance clients' self-esteem or reduce avoidance coping.

Limitations and future research

Despite its meaningful implications, this study had some limitations. First, this study was not able to reveal various aspects of self-oriented perfectionism as it pertains to career stress and indecision. Although many existing studies on adaptive perfectionism have stressed the positive sides of self-oriented perfectionism, the current study only showed maladaptive aspects of self-oriented perfectionism. This suggests that self-oriented perfectionism may exert itself in a unique way in the context of career decision. Future studies should further examine how self-oriented perfectionism interacts with other variables to influence career stress and indecision.

Second, this study set self-esteem and coping style as the variables distinguishing the classes; however, their explanatory powers were not notable. As such, a follow-up study incorporating other variables would allow a closer look at the class characteristics.

Third, because the participants were limited to Korean college students, the results may not apply equally to college students around the world. Because perfectionism can be greatly influenced by culture, it would be worth examining how perfectionism affects career indecision and stress among college students in other countries with different cultures.

Lastly, although this study has acquired a sufficient number of participants for its data sample, random sampling procedure was not used to collect the data. Therefore, generalizations of the findings should be made cautiously. Future research should collect data in a more systematic manner and see if similar findings are found.

Summary and conclusion

In conclusion, this study showed that the effects of perfectionism on career indecision and career stress can be used to differentiate college students into subgroups and identified the features of subgroups according to the effects of each perfectionism dimension on career decision and stress. Also, self-esteem and coping style were verified to be important variables regulating the influence of each perfectionism dimension on career indecision and career stress. These findings provide helpful implications for career counselors working with clients who have career issues related to perfectionism.

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