Doctorate in Clinical Psychology

Psychological help-seeking attitudes and perfectionism in different ethnic groups

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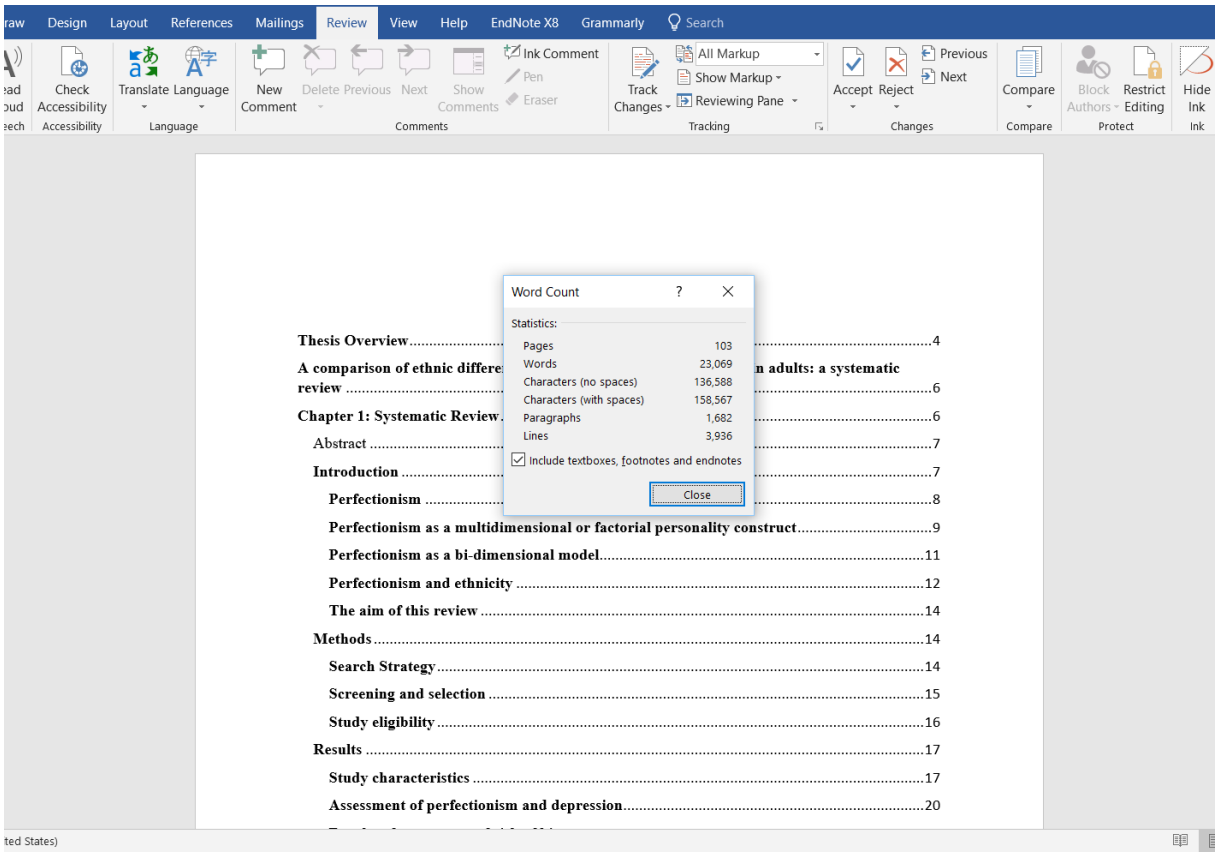

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Thesis Overview

Perfectionism is multidimensional psychological construct and is highly associated with psychological difficulties. Existing research suggests that there are ethnic variations in perfectionism. However, there are limited studies reporting how perfectionism and psychological difficulties, as well as perfectionism and help-seeking attitudes, can differ across the diverse adult ethnic groups. This thesis aimed to address these research gaps by conducting: a systematic review (Chapter 1) and a cross-sectional empirical study (Chapter 2).

Chapter 1, the literature review, identified and synthesized existing research in perfectionism and depression involving comparison of adults from multiple ethnic backgrounds. Nine papers were included in this review. To be eligible, studies needed to be peer-reviewed and published in English; to include measures of perfectionism and depression, and statistical analyses comparing different ethnic groups in relation to these measures. Evaluative concerns (i.e. self-criticism associated with failure or self-perception of failing to meet others' and/or their own expectations) were significantly related to depression across all ethnicities examined. However, there was an inconsistent relationship between depression and achievement striving (i.e. personal standards of perfectionism) and family perfectionism across the ethnic groups examined. The ethnic similarities and differences in perfectionism and depression impose relevant clinical implications. Given these ethnic differences, the results suggest that clinicians should tailor their assessment, formulation and therapeutic interventions accordingly in keeping with the individual's ethnic background.

Chapter 2, the empirical paper, drew on the recommendations from the systematic review to examine the ethnic differences in perfectionism and help-seeking attitudes. This

study involved University students (n=1066) completing a set of online questionnaires. Two ethnic groups, China-born Chinese International students (n=109) and UK-born White British home students (n=541), were compared on three dimensions of perfectionism as well as depression and anxiety states. Using cluster analysis, two groups were formed: “higher perfectionism and psychological distress” and “lower perfectionism and psychological distress”. Multiple ANOVA analyses and t-tests were then performed to examine the ethnic differences between these variables in each cluster group, and how the clusters differed in help-seeking attitudes. The findings revealed that White British students reported significantly greater levels of self-oriented and socially-prescribed perfectionism than Chinese students. Perfectionism and depression and anxiety states were negatively associated with help-seeking attitudes in White British and Chinese student groups. Both groups reporting higher levels of perfectionism and depression and anxiety states had less favourable attitudes to seek help; those with lower levels of perfectionism and psychological distress had more favourable attitudes to seek help. The ethnic variations in perfectionism and psychological distress may pose clinical implications for mental health services. Services should actively promote UK-born White British and Chinese International students’ access to mental health services. However, the focus of psychological interventions and psycho-education should be different for these two ethnic groups.

Both the systematic review and empirical paper will be submitted to the Cultural Diversity & Ethnic Minority Psychology Journal, and these papers are written up in a style required for this.

A comparison of ethnic differences in perfectionism and depression in adults: a systematic review

Chapter 1: Systematic Review

Ho Yin Chan

Abstract

Objective: Perfectionism is highly associated with psychological difficulties. However, existing studies have primarily focused on the Caucasian American samples with less emphasis on the ethnic difference in perfectionism and psychological difficulties. This systematic review aims to address this gap by examining the variations amongst ethnic groups between perfectionism and depression. Methods: Search terms were entered on electronic databases, including MEDLINE, Web of Science, PsycINFO, Scopus and CINAHL. To be eligible, studies needed to be peer-reviewed and published in English; to include measures of perfectionism and depression, and statistical analyses comparing different ethnic groups in relation to these measures. Results: Nine papers were included, involving 11 different ethnic groups. Evaluative concerns (i.e. self-criticism associated with failure or self-perception of failing to meet others' and/or their own expectations) were significantly related to depression across all ethnicities examined. However, there was an inconsistent relationship between depression and achievement striving (i.e. personal standards of perfectionism) and family perfectionism across the ethnic groups examined. Conclusion: Ethnic similarities and differences pose clinical implications, concerning with clinician tailoring their assessment, formulation and therapeutic interventions accordingly in keeping with the individual's ethnic background. Further research is required to determine the direction of effect.

Keywords: Perfectionism, depression, ethnicity

Introduction

Perfectionism is a complex personality construct–a core personality vulnerability–which has pervasive effects on an individual's approach to life (Hewitt, Flett, & Mikail, 2017). Perfectionism increases an individual's level of distress, especially when stressors or misfortunes are experienced (Hewitt & Flett, 2002; Shafran, Cooper, & Fairburn, 2002). Perfectionism is robustly associated with psychopathology (Egan, Wade, & Shafran, 2011) and psychological difficulties (Hewitt et al., 2017). Perfectionism is linked to depression (Enns & Cox, 2005; Hamamura & Laird, 2014; Hewitt & Flett, 1991a, 1991b, 1993; Hewitt, Flett, & Ediger, 1996; Hewitt, Flett, Ediger, Norton, & Flynn, 1998), anxiety disorders (Antony, Purdon, Huta, & Swinson, 1998; Jain & Sudhir, 2010; Raspopovic, 2015; Saboonchi, Lundh, & Öst, 1999; Wheeler, Blankstein, Antony, McCabe, & Bieling, 2011), suicidal behavior (Blankstein, Lumley, & Crawford, 2007; Hewitt, Caelian, Chen, & Flett, 2014; Roxborough, Hewitt, Flett, & Abizadeh, 2009) and eating disorders (Cockell et al., 2002; Hewitt & Flett, 1991b).

Despite the mounting evidence showing an association between perfectionism and psychological difficulties, there is a paucity of research comparing the differences between perfectionism and psychological difficulties across diverse ethnic groups (Stoeber, 2018). This review aims to address this research gap with the intention of improving clinicians' understanding of the relationship between perfectionism and depression across different ethnic groups. This may have an impact on their approach to the assessment, formulation and psychological interventions provided when working with adults of diverse ethnicity.

Perfectionism

Perfectionism refers to a disposition to place exceptionally high standards, a striving for flawlessness and the experience disappointment when achievement is short of perfection

(Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991b). Individuals placing high standards on themselves in order to strive for perfection often experience intense self-criticism, self-blame and emotional difficulties, such as guilt and shame. According to the "law of effect" (Thorndike, 1898), the distress experienced should, in theory, reduce or ameliorate their (perfectionistic) behavior. However, these individuals often continue to strive for perfection and increase their perfectionistic behavior to compensate for previous mistakes (Hewitt et al., 2017).

The maintenance of such behavior in the absence of rewards appears to indicate that perfectionism serves specific functions and purposes in an individual's life. As humans, we live in a relational world and our actions are underpinned by a key drive and goal, that is, our sense of belonging to the group (e.g. the need to be accepted, respected and cared for).

People with perfectionism are theorized to strive towards attaining a key goal, that of being connected with others and belonging to the social group (Hewitt et al., 2017). However, perfectionistic behavior contributes to a lack of intimacy, closeness and connectedness with others, resulting in social alienation and defensiveness from others (Hewitt, Flett, Sherry, & Caelian, 2006). Our early life experience with our caregivers and significant others appear to be a contributing factor to the development of perfectionism. Those who had unfulfilling and insecure attachment relationships are more likely to have stronger needs to be loved and noticed, strive to avoid abandonment and rejection, and are likely to be sensitive to negative emotional states of despair, humiliation and shame (Hewitt et al., 2017). These theories highlight the relational nature of perfectionism and reflect the need for researchers to examine perfectionism in terms of its complex dimensions or factors.

Perfectionism as a multidimensional or factorial personality construct

People who are perfectionistic were once theorized to have uniformly problematic dysfunctional attitudes, beliefs and cognitions (Burns & Beck, 1978; Ellis, 2002; Shafran et al., 2002). Perfectionism was seen as a unidimensional construct. However, this approach has been criticized for limiting the definition of such a broad personality construct into one comprising a set of beliefs and assumptions (Hewitt et al., 2017). Thus, many researchers have long argued that perfectionism is multidimensional in nature. For instance, Frost (Frost et al., 1990) identified six dimensions of perfectionism: greater personal standards, parental criticisms, parental expectations, doubts about actions (i.e. perception of being unable to complete tasks), concerns over mistakes and organization (i.e. the importance and preferences for order). Hewitt and Flett (Hewitt & Flett, 1991b) argued that perfectionism consists of three dimensions: self-oriented (i.e. placing high standards on self), other-oriented (i.e. placing high standards on others) and socially-prescribed perfectionism (i.e. the perception of others placing high standards on the self). Slaney and his colleagues (Slaney, Rice, Mobley, Trippi, & Ashby, 2001) posited that perfectionism involves three factors: discrepancy (i.e. the differences between expectations of self-performance and evaluations of self-performance), high standards (i.e. expectations of self-performance) and order (i.e. personal preferred structure and neatness).

The conceptualization of perfectionism proposed by Frost, Hewitt and Flett, and Slaney and his colleagues are widely accepted and their scales (Frost's Multidimensional Perfectionism Scale, F-MPS; Hewitt and Flett Multidimensional Perfectionism Scale, HF-MPS; and Almost Perfect Scale, APS-R) are frequently used in research (Stoeber, 2018). However, both F-MPS and HF-MPS have been criticized for measuring the consequences of perfectionism rather than reflecting the original concept of perfectionism (Slaney et al., 2001). To address this problem, APS-R was developed with the aim of capturing both

positive and negative elements of perfectionism. Despite these scales being widely accepted in perfectionism research, it is worth noting that the development of these scales involved only university student participants in Canada and the USA. This raises concerns with respect to the cohort effects (e.g. university students in Western countries) of perfectionism.

Perfectionism as a bi-dimensional model

More recently, literature has also postulated that perfectionism is primarily a bi-dimensional model concerned with two factors: Achievement Striving and Evaluative Concerns (DiBartolo & Rendón, 2012; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Hewitt & Flett, 1991b; Stoeber, 2018). Achievement striving is concerned with personal standards of perfectionism (Dunkley, Zuroff, & Blankstein, 2003), involving perfectionism dimensions, such as personal standards and organization in the F-MPS, self-oriented perfectionism in the HF-MPS, and standards and order in the APS-R. On the contrary, evaluative concerns are related to self-criticism associated with failure or when an individual perceives themselves as failing to meet others' and/or their own expectations. This factor can be found in perfectionism dimensions, including concerns over mistakes, doubts about actions, parental criticism and parental expectations in the F-MPS, socially-prescribed perfectionism in the H-MPS, and discrepancy in the APS-R. Using confirmatory factor analyses, this two-factor higher model has been replicated by other studies (Bieling, Israeli, & Antony, 2004; Cox, Enns, & Clara, 2002; Dunkley et al., 2003; Pearson & Gleaves, 2006), suggesting that perfectionism is better conceptualized using this bi-dimensional model. However, the evidence for this model is largely based on Caucasian samples and it is unclear if the same phenomenon can be observed in other ethnic groups (Dibartolo & Rendón, 2012). Moreover, there is a lack of empirical review examining the ethnic differences in

perfectionism and the relationship with psychological distress (Stoeber, 2018). The acquisition of such empirical evidence may provide insight for services to address the specific dimensions of perfectionism (and psychological difficulties) in adults of diverse ethnicity accordingly.

Perfectionism and ethnicity

Research on perfectionism has typically involved Caucasian American samples (DiBartolo & Rendón, 2012). However, existing studies have identified some ethnic similarities and variations in perfectionism. For instance, Asian Americans appeared to experience poorer levels of personal well-being (Chang, 1996) and greater levels of perfectionism than European Americans (Chang & Chang, 2009). Asian Americans reported higher levels of concerns over mistakes, parental criticism, parental expectation and doubts about their actions compared to Caucasian Americans (Castro & Rice, 2003; Chang, 1998, 2013). Canadians were also reported to experience higher levels of self-oriented perfectionism and concerns over mistakes, but lower socially-prescribed perfectionism than the Chinese (Smith, Saklofske, Yan, & Sherry, 2017). The results were consistent with the theory of self-enhancement being more important in the west, and collectivism and interdependence being more central in the east (Markus & Kitayama, 1991), highlighting the ethnic differences in perfectionism.

Other studies involving Asian samples have reported that personal discrepancy and family discrepancy (i.e. perception of being unable to meet family's standards for performance) were associated with depression and anxiety in Asian Indian international students (Methikalam, Wang, Slaney, & Yeung, 2015; Wang, Puri, Slaney, Methikalam, & Chadha, 2012) as well as suicidal ideation in Asian international students (Wang, Wong, &

Fu, 2013). Parent-driven perfectionism and interdependence were reported to be associated with depressive symptoms in Asian American students. This population reported a higher level of depression if they were more interdependent and perfectionistic (Yoon & Lau, 2008). Parental criticism and doubts about actions were strong predictors of suicidal ideation and depressive symptoms in a Turkish sample (Muyan & Chang, 2015). These findings illustrate the distinctive influence of parental or family pressure on Asian's perfectionism levels and its association with psychological difficulties.

Parental control in Korean culture can be an indication of low neglect and even high warmth (Kim & Choi, 1994). Moreover, parental pressure on adolescents was positively associated with better academic achievement and reduced delinquency rates (Park & Kim, 2004). Nonetheless, an association was found between socially-prescribed perfectionism and depression; self-esteem was negatively correlated with socially-prescribed perfectionism in a Korean sample (Cha, 2016). The results suggested that although Korean culture views parental influences differently, perfectionism is still present in this culture, increasing their vulnerability to psychological distress.

A study examining perfectionism in African Americans has found that discrepancy was negatively associated with self-esteem and positively related to depression (Elion, Wang, Slaney, & French, 2012). Discrepancy was also positively related to depression and trait anxiety in another study of African Americans (Mobley, Slaney, & Rice, 2005). Personal standards and discrepancy were significantly associated with lower self-esteem, depressive and anxiety symptoms in a Latino/a population (Ortega, Wang, Slaney, Hayes, & Morales, 2014). The associations between discrepancy and psychological distress (e.g. depression) in African American and Latino samples were comparable to the White and European Americans (e.g. (Rice, Tucker, & Desmond, 2008; Wang, 2010), suggesting that these relationships are likely to be culturally independent. However, none of these studies used a

power analysis to justify the sample size needed, increasing the risk of type-I error; research suggests that the magnitude of true effects found in small and underpowered studies are likely to be overstated (Button et al., 2013). Also, most of their samples were university students, which raises questions of the generalizability of the results to the general public.

The aim of this review

As stated above, there are a number of key similarities and variations in perfectionism and its associations with mental health difficulties across different ethnic groups. As proposed by Stoeber (2018), there is a need for researchers to examine this under-researched area and carry out systematic reviews to study the ethnic differences in perfectionism and the relationship with psychological distress. Existing empirical studies of perfectionism primarily involved Caucasian American samples; the paucity of reviews examining the ethnic differences in perfectionism and psychological difficulties may increase the risk of clinicians applying a westernized psychological construct to individuals of other ethnic backgrounds.

This review, therefore, will address this research gap by examining the magnitude of correlations (e.g. r values) between perfectionism and depression (e.g. the r values) across diverse ethnic groups. The results of this review will be used to inform clinicians (e.g. counsellors or psychologists) which particular dimensions of perfectionism they should pay more attention to when working with specific ethnic groups presenting with depressive symptoms. This may have clinical implications in relation to the focus of the therapist's assessment, formulation and orientation of therapy models in meeting these ethnic groups' unmet needs.

Methods

Search Strategy

This review utilized databases of Scopus, PsycINFO, Web of Science, CINAHL and MEDLINE (from earliest records until October 2017), and search terms and Boolean operators: “Perfection*” AND “Ethnic* OR Rac* OR Cultur*” AND Depress*. The same search terms and databases were used in the updated search on 14th April 2018 and no additional papers were identified.

Screening and selection

There were 176 papers identified after deletion of duplicates (Fig.1). Thus, in place of screening only the titles and abstracts, two reviewers (HC, NY) independently screened the methodology sections of each paper ensuring this review’s criteria were met. Consensus was achieved for any uncertainty between the reviewers via revisiting the papers and inclusion criteria. In addition to the papers obtained from the initial systematic search, both authors independently checked the reference lists for each paper but did not identify any additional papers in this process. Authors of all selected papers, which included experts in the field, were contacted via emails and asked if they were aware of any further published or unpublished studies that might meet the criteria for this review (see Appendix A). The primary reviewer also contacted authors of studies that did not report statistical analysis in their papers in relation to the direct relationships of depression and perfectionism between the ethnic groups. These authors were asked if they could provide such data for inclusion of their studies in this review (see Appendix B). One author responded, resulting in two of his studies being including in this review (Wang, 2010; Wang et al., 2012).

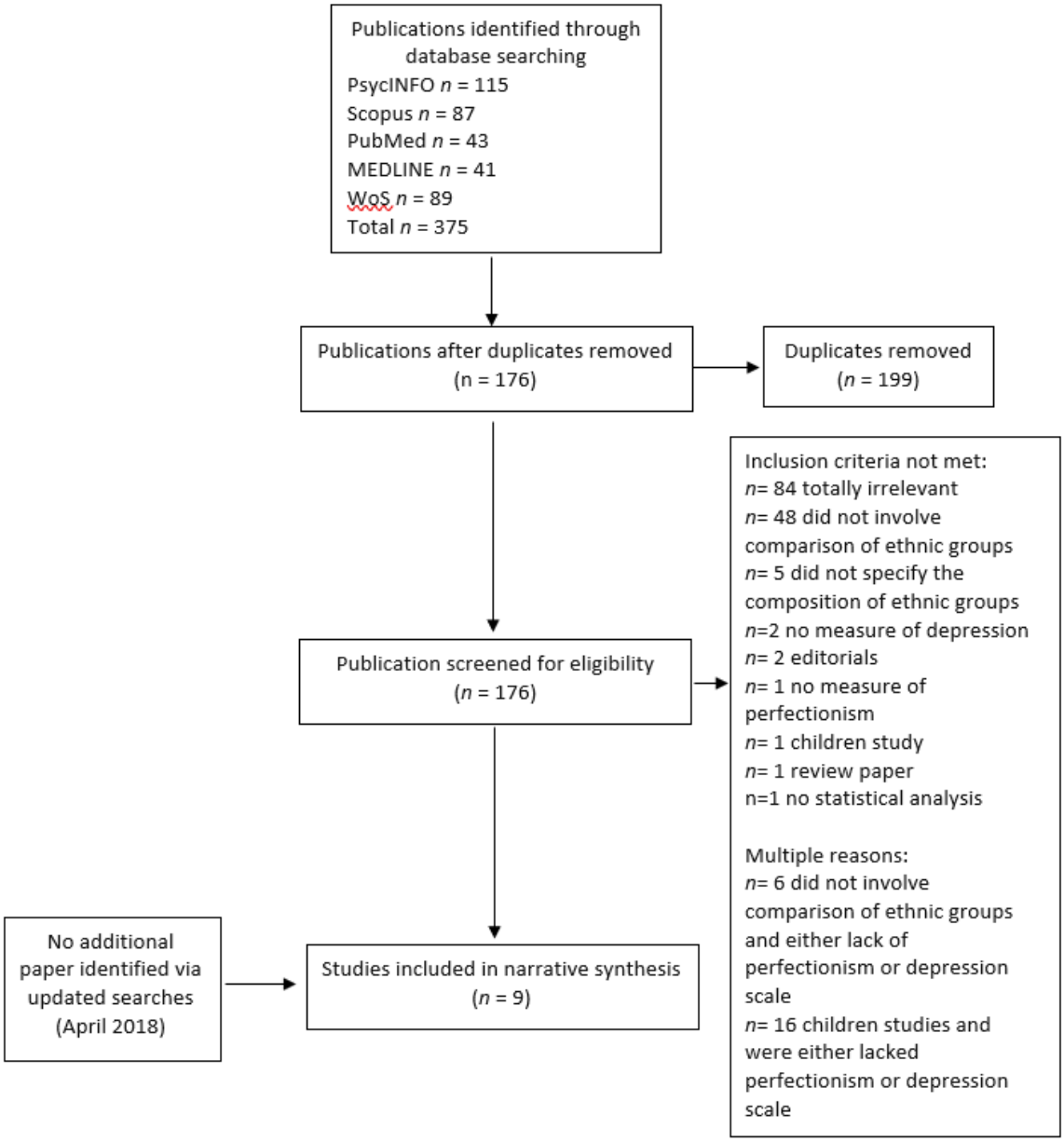


Fig. 1. Flow-chart of included studies

Study eligibility

Studies were included in this review if they: a) were empirically peer-reviewed, b) were published in English, c) involved the use of measures of perfectionism and depression, d) recruited adult participants, and e) reported data consisting of the relationships of perfectionism and depression in at least two ethnic groups. Only comparison studies involving more than one ethnic groups were selected for this review. This criterion was

implemented to increase the homogeneity of the reviewed studies in terms of their study design, recruitment processes and recruited ethnic groups.

Five studies have compared perfectionism and depression between Canadian and Chinese samples (Smith, Saklofske, Yan, & Sherry, 2015; Smith, Saklofske, Yan, & Sherry, 2016; Smith et al., 2017), and North American and East Asian samples (Hamamura & Laird, 2014). However, these studies did not explicitly account for the diverse ethnic backgrounds within the Canadian and North American groups (i.e. the composition of each group might consist of multi-ethnic groups). They were not included in this review as a result. All qualitative studies, editorials and reviews were excluded.

Results

Study characteristics

Table 1 shows the characteristics of the nine journal articles included in this review. The sample size of the studies varied between 94 and 638. Only one of the nine studies was conducted outside the USA; seven studies were cross-sectional, and two studies were experimental. Participants were primarily young female university students. There were 11 ethnicity groups identified across the studies examined, including Caucasian American, White American, European American, African American and Asian Americans, Asian/Asian American (i.e. students from China, Taiwan, Japan, Korea and multi-ethnic backgrounds), East Asian (i.e. Chinese, Japanese and Korean), Asian Indian (i.e. Indian International students), Indian (Indian students from a University of India), Chinese and Japanese. It was highly likely that Caucasian American, White American and European American were, in essence, the same ethnic group. However, for the purpose of this review, we would consider

them as different ethnic groups as these ethnicities were identified by the original authors in their studies.

Table 1. Main characteristics of included studies

	Study Characteristics			Participants Characteristics				
Study	Design	Location	Sample Source	N	Male, n (%)	Female, n (%)	Age range; mean (SD)	Ethnicity Details
Castro, J.R & Rice, K.G (2003)	Cross-sectional	USA	University students	189	41 (21.69%)	146 (77.25%) (2 missing data)	Mean age: 20.69 (SD=3.26) -African American: 20.86 -Caucasian American: 20.95 Asian American: 20.28	-65 Caucasian -65 African American -59 Asian American -15 Hispanic -11 American Indian (last two groups were too small for analysis)
Chang, E. C. (2013).	Cross-sectional	USA	University students	532	181 (34.02%)	351 (65.98%)	Mean age: 20.04 (SD=2.29)	- 223 Asian American - 309 European American
Chang, E. C., Chang, R., & Sanna, L. J. (2012)	Repeated measure	USA	University students	332	113 (34.04%)	219 (65.96%)	-European American age range 18-23 with a mean age 19.7 - Japanese (from a Japanese university) age range 18-23 with a mean age 20.0.	-177 (42 male and 135 female) European American -155 (71 male and 84 female) Japanese
Chang, R., & Chang, E. C. (2009)	Cross-sectional	USA	Undergraduate University students	191	82 (42.93%)	109 (57.07%)	- No details about their age	-100 Asian American -91 European American
Chen, C., Hewitt, P. L., & Flett, G. L. (2017).	Cross-sectional	Canada	Undergraduate University students	240	87 (36.25%)	153 (63.75%)	-Age range 17-29; mean age= 18.90; SD=1.69	-120 East Asian (Chinese, Japanese, Korean) -120 European Canadian - 60.78% of participants were born in Canada whereas 39.22% participants were born outside of Canada (e.g., Mainland China, Hong Kong, Taiwan, Japan,

								South Korea, Singapore, and Vietnam). - Approximately 78% of participants of East Asian heritage were born outside of Canada.
Rice, K. G., Tucker, C. M., & Desmond, F. F. (2008)	Cross-sectional	USA	Parents of adolescent	94	35 (37.23%)	59 (62.77%)	Age range 30-67; mean age= 44.00; SD= 9.53	-39 African American (28 females, 11 males) -55 White American (31 females, 24 males)
Rice, K. G., Choi, C.-C., Zhang, Y., Morero, Y. I., & Anderson, D. (2012)	Cross-sectional	USA	University students	295	202 (68.47%)	92 (31.18%) One gender data missing	Age range 20-33, mean age 23.37; SD=2.51	-129 Chinese International students - 166 Asian Indian International Students
Wang, K. T. (2010). Study 2 only	Cross-sectional	USA	College students (i.e. university students)	638	-48 in Group 1 -68 in Group 2 Total 116 (18.18%)	-204 in Group 1 -317 in Group 2 Total 521 (81.66%)	Group 1: age range 18-54; mean age 21.97; SD=5.00 Group 2: age range 18-40; mean age 20.05; SD=2.31	Group 1: 252 Asian/Asian American who originated from: -83 China -44 Taiwan -26 Japan - 40 Korea - 7 multi-ethnic - 52 students did not indicate specific origin Group 2: 386 European American *1 data missing for European American group
Wang, K. T., Puri, R., Slaney, R. B., Methikalam, B., & Chadha, N. (2012)	Cross-sectional	USA	University Students	518	India: 23 European: 68 Total: 91	India: 109 European: 317 Total: 426	Indian Students: age range 20-27; mean age 21.22; SD=1.17 European American: age range 18-20, mean age 20.05; SD=2.31)	-132 Indian recruited from a university in India (23 males, 109 females) -386 European American (68 males, 317 females) *1 data missing for European American students as European Sample was based on the Wang's (2010) study

Assessment of perfectionism and depression

Across nine studies examined in this review, five measures of perfectionism were used including F-MPS (Castro & Rice, 2003; Chang, 2013), Performance Perfectionism Scale (PPS; Chang, Chang, & Sanna, 2012; Chang & Chang, 2009), HF-MPS (Chen, Hewitt, & Flett, 2017), ASP-R (Rice, Choi, Zhang, Morero, & Anderson, 2012; Rice et al., 2008), and both APS-R and Family Almost Perfect Scale (FAPS; Wang, 2010; Wang et al., 2012). Three studies (Chang, 2013; Chang et al., 2012; Chang & Chang, 2009) used the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), five studies (Castro & Rice, 2003; Rice et al., 2012; Rice et al., 2008; Wang, 2010; Wang et al., 2012) used the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) and one study (Chen et al., 2017) used the Beck Depression Inventory-2nd Edition (BDI-II; Beck, Steer, & Brown, 1996).

Results of assessment of risk of bias

An adapted version of the Agency for Healthcare Research and Quality (AHRQ; Williams et al., 2010**;** Appendix C) was chosen for this review on the basis that it is an assessment tool for observational studies. This methodological quality assessment tool has been used in other reviews involving observational studies (e.g. Cherry et al., 2017; Manning et al, 2017; Taylor et al., 2014).

Table. 2 shows the results of assessment of risk of bias for each study. The most common methodological problems of the studies examined in this review concerned sample size justification, appropriate analyses, biased selection of cohort, blinding of assessors, lack of controlling confounding variables and study design. Firstly, there were no power calculations for any of the nine studies, which raises concerns about the possibility of an increased Type-I error as many of these studies were likely to be under-powered. The lack of

justification of the sample size had a direct impact on the method of analysis chosen as the statistical techniques used might not be appropriate given the number of participants recruited. Thus, the results of these studies must be interpreted with caution. Secondly, eight out of nine studies used a university student sample and this recruitment method raises the likelihood of cohort effects (e.g. socio-economic status and education level), reducing the generalizability of their findings to those, for example, who are non-university students. Thirdly, two studies grouped participants from diverse ethnic groups into one ethnic group (e.g. Chinese, Japanese and Korean were categorized as "East Asian"; participants who were originated from China, Taiwan, Japan, Korea etc. were categorized as "Asian/Asian American"). Also, eight studies did not account for the participants' country of birth; participants might have been categorized as the same ethnic groups when they were, in fact, born in different countries (e.g. those who were born in Europe and later moved to America could still describe their ethnicity as Caucasian American). These limitations increase the risk of heterogeneity of the ethnic groups and the generalizability of their findings. Fourthly, most studies used a cross-sectional design and causation effects cannot be established between the variables as a result. Finally, although many measures used were considered to be valid and reliable, the use of self-report poses the issue of researcher-related bias. For instance, those who volunteered to participate might be more compliant and cooperative in sharing their personal experiences than those who refused to participate.

Table 2. Assessment of risk of bias

Authors	Unbiased selection of cohort?	Sample size calculation/ Justification ?	Adequate description of the cohort?	Valid method to assess perfectionism?	Valid method to assess depression?	Assessors blind to perfectionism or depression?	Adequate follow-up?	Missing data minimal?	Confounders controlled for?	Appropriate analysis?
Castro, J.R & Rice, K.G (2003)	Partially	No	Partially	Yes	Yes	Unsure	N/A	Yes	No	Partially
Chang, E. C. (2013)	Partially	No	Partially	Yes	Yes	Unsure	N/A	Unsure	No	Partially
Chang, E. C., Chang, R., & Sanna, L. J. (2012)	Partially	No	Partially	Partially	Yes	Unsure	No	Unsure	Partial	Partially
Chang, R., & Chang, E. C. (2009)	Partially	No	Partially	Partially	Partially	Unsure	N/A	Unsure	Yes	Partially
Chen, C., Hewitt, P. L., & Flett, G. L. (2017).	Partially	No	Partially	Yes	Yes	Unsure	N/A	Yes	Yes	Partially
Rice, K. G., Tucker, C. M., & Desmond, F. F. (2008)	Yes	No	Partially	Yes	Yes	Unsure	N/A	Yes	No	Partially
Rice, K. G., Choi, C.-C., Zhang, Y., Morero, Y. I., & Anderson, D. (2012)	Yes	No	Yes	Yes	Yes	Unsure	N/A	Yes	No	Partially
Wang, K, T. (2010)	Partially	No	Partially	Yes	Yes	Unsure	N/A	Unsure	No	Partially
Wang, K. T. (2012).	Partially	No	Partially	Partially	Yes	Unsure	N/A	Unsure	No	Partially

Association of evaluative concerns and depression

Broadly, relationships between evaluative concerns (i.e. self-criticism or perception of the self-failing to meet others' and/or own expectations) and depression across all ethnic groups varied between r=.12 and r=.67 (Table.3). Whilst an overall positive relationship was identified, not all subscales of evaluative concern were significantly associated with depression (e.g. parental expectations and depression in African American). Doubts about actions was strongly and significantly associated with depression in Caucasian American (r=.49) and European American (r=.45) in the Castro and Rice's (2013) study, despite these correlations were not compared statistically.

Concern over mistakes was significantly and highly associated with depression in Asian American (r=.45) and European America students (r=.45) in Chang's (2013) study. These correlations were not compared statistically. After controlling for ethnicity (i.e. Asian American and European American students), concerns over mistakes and doubt over actions were found to be unique contributors to depression (β=.24-- .39; Chang, 2013). However, the results in their hierarchical regression model (where ethnicity was entered in step one and perfectionism scale was entered in step two) suggested that perfectionism was a significant contributor explaining 28% of variance in depression. Nevertheless, not controlling the important confounding variables of participants' country of birth in both ethnic groups raises concerns relating to the heterogeneity of the sample and the generalizability of the results.

Castro and Rice (2003) also found strong and significant associations between concerns over mistakes and depression in Asian American (r= .59), African American (r=.40) and Caucasian American students (r=.40). They also reported that all six subscales of the F-MPS predicted 18% of the variance in depression in the African American participants. However, these subscales predicted 29% and 51% of the variance in depression within the

Caucasian American and Asian American students respectively, with the two latter groups reporting doubts about actions as a unique contributor to depression (Castro & Rice, 2003). These beta values were not statistically compared in this study. Furthermore, there were no power calculations in this study, meaning that the small sample size for each ethnic group ($n \leq 65$) was at risk of a type-I error.

The use of APS-R in four studies (Rice et al., 2012; Rice et al., 2008; Wang, 2010; Wang et al., 2012) found strong and significant associations between discrepancy and depression in White American (r= .49), European American (r= .43), Asian/Asian American (r=.50), Asian Indian International (r= .53), Indian (r= .45) and African American (r=.45) and Chinese International (r= .37) students. None of the above studies statistically compared the correlations between the ethnic groups, except in Rice et al.'s (2012) study where an interaction was found between the Chinese and Asian Indian samples. The results of the Rice et al.'s study reported that the interaction was significant; discrepancy accounted for 28% of the variance in depression in Asian Indian sample but only 14% in the Chinese sample. Despite the strong associations between discrepancy and depression being identified, none of the studies used a power analysis to justify the sample size needed for their analyses; in particular, the Rice et al. (2008) only recruited a small number of adult participants (39 African American and 55 White American). Also, the Wang's (2010) study grouped multi-ethnic group (e.g. Chinese, Taiwanese, Japanese, Korean etc.) into an "Asian/Asian American" group, increasing the heterogeneity of this comparison group. The lack of statistical analyses comparing the magnitude of the correlations between the ethnic groups in the same study also precluded meaningful interpretations with respect to which ethic group presented with a higher association between discrepancy and depression.

Using the HF-MPS, Chen, Hewitt and Flett (2017) observed strong positive associations between socially-prescribed perfectionism and depression in Canadian students (r= .48) and Asian Canadian students (r=.27). Again, the authors did not carry out further analysis to statistically compare the magnitude of the correlations between the ethnic groups examined; it was impossible to determine whether Canadian or Asian students presented with a higher association between socially-prescribed perfectionism and depression.

Table 3. Associations between perfectionism and depression

Study	**Perfectionism Measure**	**Depression Measure**	**Comparison**	**Perfectionism Variable**	**Bivariate analyses**	**Multivariate Association**	**Control Variables**
Castro, J.R & Rice, K.G (2003)	Frost-Multidimensional Perfectionism Scale (F-MPS)	The Center for Epidemiologic Studies - Depression (*CES-D*) *scale*	Depression			Multiple regression	
					Asian American		
				Concern over mistakes	r= .59**	β= .23	-
				Personal standards	r= .14	β= .08	-
				Parental expectations	r= .19	β= -.14	-
				Parental criticism	r= .37**	β= .21	-
				Doubts about actions	r=.67**	β= .44**	-
				Order	r= -.13	β= -.10	-
					African American	The analysis does not provide the β value for the African American group as overall equation was insignificant	
				Concern over mistakes	r= .40**		-
				Personal standards	r= .13		-
				Parental expectations	r= -.17		-
				Parental criticism	r= .25**		-
				Doubts about actions	r= .33**		-
				Order	r= .10		-
					Caucasian American		
				Concern over mistakes	r= .46**	β= .26	-
				Personal standards	r= .21	β= .01	-
				Parental expectations	r= .20	β= -.13	-
				Parental criticism	r= .26*	β= .12	-
				Doubts about actions	r= .49**	β= .31*	-
				Order	r= .09	β= .07	-
Chang, E. C. (2013)	Frost-Multidimensional Perfectionism Scale (F-MPS)	Beck Depression Inventory	Depression		**Asian American**		Ethnicity
				Concern over mistakes	r=.45***	β= .39***	
				Personal standards	r= .14*	β= -.15**	
				Parental expectations	r= .17*	β= -0.3	
				Parental criticism	r= .27***	β= .05	
				Doubts about actions	r= .41***	β= .24***	
				Order	r= -.01	β= -0.3	
					European American		
				Concern over mistakes	r= .45***		
				Personal standards	r= .02		
				Parental expectations	r= .12*		
				Parental criticism	r= .27***		
				Doubts about actions	r= .45***		

Table 3 (continued)

				Order	r= -.11		
Chang, E. C., Chang, R., & Sanna, L. J. (2012)	Performance Perfectionism Scale (PPS)	Beck Depression Inventory	Depression		**Partial correlation controlling for gender** **European American** **Time 1 (Time 2)**		Gender, Time 1
				Positive Self-Oriented Performance Perfectionism	*pr*= -.27***(-.25***)	β= .01	
				Negative Self-Oriented Performance Perfectionism	*pr*= .29***(.38***)	β= .27***	
				Positive Socially-Prescribed Performance Perfectionism	*pr*= -.27*** (-.26***)	β= -.11	
				Negative Socially-Prescribed Performance Perfectionism	*pr*= .24** (.26***)	β= .07	
					Japanese **Time 1 (Time 2)**		
				Positive Self-Oriented Performance Perfectionism	*pr*= -.19* (-.30***)	β= -.10	
				Negative Self-Oriented Performance Perfectionism	*pr*= .30*** (.36***)	β= .20**	
				Positive Socially-Prescribed Performance Perfectionism	*pr*= -.22** (-.28***)	β= -.00	
				Negative Socially-Prescribed Performance Perfectionism	*pr*= .25*** (.30***)	β= .05	
Chang, R., & Chang, E. C. (2009)	Performance Perfectionism Scale (PPS)	Beck Depression Inventory	Depression		**European American**	This study controlled for pre-test scores when they examined the effects of priming on positive and negative perfectionism and affect. However, the data is only described narratively—there is no information about how the control of the	Pre-test scores
				Positive Self-Oriented Performance Perfectionism	r= -0.13		
				Negative Self-Oriented Performance Perfectionism	r= 0.38**		
				Positive Socially-Prescribed Performance Perfectionism	r= -0.06		
				Negative Socially-Prescribed Performance Perfectionism	r= 0.38**		
					Asian American		
				Positive Self-Oriented Performance Perfectionism	r= -0.17		
				Negative Self-Oriented Performance Perfectionism	r= 0.30**		
				Positive Socially-Prescribed Performance Perfectionism	r= -0.17		
					r= 0.27**		

Table 3 (continued)

				Negative Socially-Prescribed Performance Perfectionism		pre-test scores has had an impact on the relationships between perfectionism and depression (i.e. BDI).	
Chen, C., Hewitt, P. L., & Flett, G. L. (2017).	Hewitt & Flett-Multidimensional Perfectionism Scale (HF-MPS)	Beck Depression Inventory-II	Depression	Self-Oriented Perfectionism Socially-Prescribed Perfectionism Other-Oriented Perfectionism Self-Oriented Perfectionism Socially-Prescribed Perfectionism Other-Oriented Perfectionism	**European Canadian** r= .18 r= .48** r= -.06 **East Asian** r= .00 r= .27** r= .08	 β= -.26* β= -.05	SOP, OOP
Rice, K. G., Tucker, C. M., & Desmond, F. F. (2008)	Almost Perfection Scale-Revised (APS-R)	The Center for Epidemiologic Studies - Depression (*CES-D*) *scale*	Depression	Discrepancy High Standards Discrepancy High Standards	**White American** r= .49** r= -.14 **African American** r= .45** r=-.38*	--	--
Rice, K. G., Choi, C.-C., Zhang, Y., Morero, Y. I., & Anderson, D. (2012)	Almost Perfection Scale-Revised APS-R; only discrepancy scale was used)	The Center for Epidemiologic Studies - Depression (*CES-D*) *scale*	Depression	Discrepancy Discrepancy	**Chinese** r= .37*** **Asian Indian** r= .53***	--	--

Table 3 (continued)

Wang, K. T. (2010).	Almost Perfection Scale-Revised (APS-R), Family Almost Perfect Scale (FAPS)	The Center for Epidemiologic Studies - Depression (*CES-D*) *scale*	Depression	Family Standards Family Order Family Discrepancy Standards Order Discrepancy Family Standards Family Order Family Discrepancy Standards Order Discrepancy	**European American** *r*= .161**,[a] *r*= .026[a] *r*= .401**,[a] *r*= .073[a] *r*= -.053[a] *r*= .433**,[a] **Asian/Asian American** *r*= .009[a] *r*= .078[a] *r*= .342**,[a] *r*=-.087[a] *r*=-.090[a] *r*=.495**,[a] Ł data obtained via emails with the author (not stated on paper)	--	--
Wang, K. T. (2012).	Almost Perfection Scale-Revised (APS-R), Family Almost Perfect Scale (FAPS)	The Center for Epidemiologic Studies - Depression (*CES-D*) *scale*	Depression	Family Standards Family Order Family Discrepancy Standards Order Discrepancy Family Standards Family Order Family Discrepancy Standards Order Discrepancy	**European American** *r*= .161**,[a] *r*= .026[a] *r*= .401**,[a] *r*= .073[a] *r*= -.053[a] *r*= .433**,[a] **Indian** *r*= -.01 *r*= .21 *r*= .27 *r*= .07 *r*= -.09 *r*= .45*** Ł data obtained via emails with the author (not stated on paper)	--	--

* p<.05. ** p<.01. *** p<.001. [a] data obtained via emails with the author.

Association between achievements striving and depression

Findings were inconsistent when the relationship between achievement striving and depression was examined. Studies included in this review reported that these relationships varied between negative to positive associations (r=-.38--.18). The overall associations between standards/personal standards and depression, based on studies using F-MPS and APS-R were r=.07 in European American students (Wang, 2010), r=.07 in Indian students (Wang, 2012), r=.13 in African American students (Castro, 2003), r= .21 in Caucasian American students (Castro, 2003), r= -.087 in Asian/Asian American students (Wang, 2010) and r= -.14 in White American students (Rice et al., 2008). However, it is important to note that none of these relationships were statistically significant nor the authors of these studies compared the magnitude of these correlations between the ethnic groups. The only significant association between personal standards and depression was found in Asian American students (r= .14; Chang, 2013). After controlling for ethnicity (i.e. Asian American and European American students), personal standards was the only achievement striving subscale that explained a negative and significant contribution to depression (β =-.15), indicating that this dimension was likely to be culturally independent in both ethnic groups (Chang, 2013).

For order and depression, non-significant associations were found in Caucasian American students (r= .09; Castro, 2013) African American students (r=.10; Castro, 2013), European American students (r= -.11; Chang, 2013), Asian/Asian American students (r= -.09; Wang, 2010), Asian American students (r= -.13; Castro, 2003) and Indian International students (r= -.09; Wang, 2012). Chen, Hewitt and Flett (2017) reported no relationship between self-oriented perfectionism and depression in East Asian students and in European Canadian students (r=.18). Similar to Wang's (2010) study, this study also grouped Chinese,

Japanese and Korean participants into an “East Asian” group, resulting in a high level of heterogeneity within the same ethnic group and therefore less generalizability of the results.

Associations between family perfectionism and depression

Wang (2010) and Wang (2012) used the same European American student sample and reported that there were positive and significant correlations between depression and family standards (r=.16), and depression and family discrepancy (r=.40) in this ethnic group. A significant correlation between depression and family discrepancy was found in the Asian/Asian American students (r=.34). In Wang’s (2012) study, Indian students reported non-significant correlations between depression and family order (r=.21), and depression and family discrepancy (r=.27). Similar to other studies, the authors did not carry out further statistical analysis to compare the magnitude of correlations between these ethnic groups; it was impossible to report which ethnic group (e.g. European American or Asian/Asian American) in the same study presented with a higher association between family perfectionism and depression than the other. Compared to the Asian/Asian American student groups in Wang’s (2010) study, there was a stronger homogeneity in the Indian student group in Wang et al. (2012) study as all the participants self-identified as Indian and were recruited in a university in India. Thus, the findings appeared to be more representative and meaningful to the India born students.

Performance Perfectionism Scale and depression

After controlling for time one and gender, Chang, Chang and Sanna (2012) reported that negative self-oriented perfectionism was a significant contributor to depression in European American students (β=.27) and Japanese students (β=.20). In both time one and time two experimental conditions, positive self-oriented and socially-prescribed performance perfectionism were negatively and significantly associated with depression; negative self-

oriented and socially-prescribed performance perfectionism were positive and significantly associated with depression in both European American and Japanese student groups (Chang et al., 2012). Chang and Chang (2009) also reported positive and significant relationships between depression and negative self-oriented perfectionism in European American (r=.38) and Asian American students (r=.27); positive socially-prescribed perfectionism was significantly and positively associated with depression in European American (r=.38) and Asian American (r=.27). Although the authors did not carry out further analysis to compare the magnitude of the correlations between these ethnic groups, the results provided partial support for performance perfectionism being culturally independent in European and Asian Americans and Japanese students. Also, the longitudinal design of this study (i.e. two months gap between time one and time two) allowed observation of changes in the variables examined, which was a strength of this study.

Other-oriented Perfectionism and Depression

Other-oriented perfectionism was non-significantly associated with depression (r=.08) in Asian Canadian and European Canadian students (r= -.06; Chen et al., 2017). After controlling for self-oriented and socially-prescribed perfectionism, other-oriented perfectionism showed a significant but negative contribution to depression in European Canadian students (β= -.26) but not in Asian Canadian students (β= -.05). Despite these beta values were not contracted statistically, this unique association appeared to suggest that people from individualistic cultures (i.e. European Canadian student) with higher other-oriented perfectionism were more likely to be protected against emotional difficulties (i.e. depression) by lowering personal blame and having increased self-esteem (Chen et al., 2017).

Discussion

To our knowledge, this is the first systematic review to investigate the associations between depression and perfectionism across different ethnic groups. Based on the bi-dimensional model of perfectionism, narrative synthesis of the included studies indicated that depression was consistently and positively associated with evaluative concerns, but not with achievement striving, across all ethnicities examined.

In the nine studies examined, seven papers utilized measures of perfectionism, including F-MPS, HF-MPS and APS-R, with subscales falling within the bi-dimensional model (i.e. achievement striving and evaluative concerns). This review has identified that depression was positively and significantly associated with evaluative concerns across all ethnic groups. These findings suggest that the relationship between evaluative concerns and depression is a culturally independent factor in the ethnic groups examined. However, the association between achievement striving and depression is not. Consistent with the literature, positive performance perfectionism is negatively and significantly associated with depression across European American, Asian American and Japanese students; negative performance perfectionism is positively associated with depression in European American and Japanese students but not in Asian American students.

Existing literature suggests that there is an association between depression and higher evaluative concerns in Asian, African and Caucasian Americans (DiBartolo, 2012). Similar results were identified in this review. For instance, concerns over mistakes and doubts over actions appear to have consistent associations with depression in Asian American, African American, Caucasian American and European American students (Castro & Rice, 2003; Chang, 2013). Our findings also suggest that discrepancy is strongly linked to depression

across White American, European American, Asian/Asian American, African Americans, Asian Indian International, Chinese International and Indian students.

This review has revealed an inconsistent pattern between achievement striving and depression across different ethnic groups. A dimension of achievement striving, i.e. order, was negatively associated with depression in European American, Asian/Asian American and Indian students but not in Caucasian American and African American students. However, none of these associations yielded statistical significance. Self-oriented perfectionism was positively, although again non-significantly, related to depression in European Canadian students and no relationship between the two was found in East Asian students. Moreover, there was an overall positive relationship between depression and personal standards in Caucasian American, European American, Asian American, African American, and Indian students but not in White American and Asian/Asian American students. Again, none of these associations was statistically significant, apart from the Asian American students in Chang's (2013) study. These largely non-significant relationships between achievement striving and depression indicate that either there is little association between achievement striving or depression or that these studies were underpowered. Moreover, the findings indicated that we must not always assume only those who presented with higher achievement striving would experience an increased level of depression. Evidently, the association between the two would differ according to an individual's ethnic backgrounds.

Nonetheless, the prevalence of these positive associations may be explained by the common "trophy culture" in the younger generation that promotes competition and performance comparison (Campbell & Doward, 2016). For instance, the introduction of social media may have heightened the risk of young people making social comparisons against each other. This may increase the need to place high standards on themselves to

achieve, potentially resulting in greater levels of depression experienced (Feinstein et al., 2013).

It may be that parenting has an impact on the development of perfectionism (Blatt, 1995; Flett, Hewitt, Oliver, & Macdonald, 2002). The syndromal sensitivity model (Weisz, Weiss, Suwanlert, & Chaiyasit, 2006) suggests that children are likely to model parents' perfectionistic behavior. They are at a higher risk of developing perfectionism when their parents place high standards on them to achieve perfection, and/or when they only receive parental approval once such demands are met (Flett et al., 2002). The findings from this review suggest that there was a similar association between family perfectionism and depression across Caucasian American, Asian/Asian American and Indian students. Furthermore, family standards, family order and family discrepancy were statistically and positively related to depression in Caucasian American students; an association between family discrepancy and depression was found in Asian/Asian American students (Wang, 2010). However, the ethnic differences between Caucasian American and Asian/Asian American students were only identified in one study, providing limited generalizability of the results. Interestingly, none of the subscales of FAPS yielded statistical significance for the Indian students (Wang, 2012). This appears to suggest that individuals from a collective culture (i.e. Indian) may be more protected from experiencing depression when they experience family perfectionism.

The results of family perfectionism were inconsistent with the existing literature, which has explored collectiveness and individualism of different ethnic groups (e.g. Baumeister, 1990; Heine, Takata, & Lehman, 2000; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; McCreary, Joiner, Schmidt, & Ialongo, 2004). For instance, African American students reported a higher level of socially-prescribed perfectionism and parental expectations than Caucasian Americans; African American parents were more likely to place

greater efforts on their children to succeed to overcome adversity, such as racism and discrimination (Nilsson, Paul, Lupini, & Tatem, 1999). This explanation may also apply to ethnic minorities living in a predominately white country (e.g. the USA and Canada) and in theory, increase their risk of developing depression as highlighted in the literature. However, researchers argued that ethnic differences cannot always be explained by the theories of individualism and collectiveness (Oyserman, Coon, & Kemmelmeier, 2002). For instance, in Oyserman et al.'s (2002) meta-analysis, Caucasian Americans were found to be more collective than African Americans. Further research has posited that in a collective ethnicity, members can still promote individualism and/or be self-centred (Gouveia, Clemente, & Espinosa, 2003). Indeed, one should not assume that easterners are always collective, and westerners are individualistic. This was especially the case when almost all the participants in these studies had the common experience of Americans' higher education.

Methodological limitations

Before considering the clinical implications of this review, it is essential to address the limitations of the review process and the studies examined. Firstly, only published papers written in English were included in this study. The exclusion of unpublished data, such as dissertations and theses, as well as papers written in other languages were excluded which may have increased publication bias prevalent in psychological research (Torgerson, 2006). Studies involving child and adolescent participants were also excluded, which may have impacted on the conclusion drawn; the variations in ethnic parenting style may lead to differing development of perfectionism in children. Meta-analysis was precluded in this review due to the heterogeneity of the 11 ethnic groups examined and the different perfectionism and depression measures used. Also, eight studies did not control for participants' country of birth in each ethnic group, which restricted a statistical synthesis of the included studies.

For the papers examined, seven studies employed a cross-sectional research design. It was therefore impossible to determine the causal direction of the effects between the variables studied. Also, surprisingly, none of the studies stated if they had used a power calculation to identify the sample size needed for their statistical analysis. Furthermore, most of the studies did not account for the participants' country of birth; participants who self-identified as European American might report different levels of perfectionism depending on which country they were born in. For instance, the level of perfectionism reported by participants who were born and raised in America could be different to those who came to America when they were 15 years old, and yet, they could still self-identify as European American. Similarly, in two studies, participants from similar ethnic groups (e.g. Japanese, Chinese, and Korean) were clustered together representing the same ethnic groups (e.g. East Asian), reducing the generalizability of the results. Also, students recruited from more prestigious universities might report different levels of perfectionism and depression than those who attended less prominent universities (and those who were non-university-attenders), due to the competition they experienced in enrolling onto their course (Chang & Chang, 2009).

Future directions

Future research should address these important methodological limitations and avoid drawing clinical conclusions without explicitly referencing the heterogeneity of the ethnic groups (i.e. the diversity within the ethnic group, such as participants' country of birth). It will be beneficial for future researchers to carry out qualitative studies examining the ethnic differences of perfectionism and other psychological difficulties (e.g. depression, anxiety and suicidality) in non-students and child populations. The use of longitudinal studies will be

useful in determining the causative effects of perfectionism and psychological difficulties. Given that perfectionism is likely to develop in childhood due to parental factors, further researchers should carry out reviews examining the ethnic differences in perfectionism in children. Future research should also consider studying the relationships between perfectionism and psychological difficulties, and how these relationships may influence individuals' willingness to seek psychological help when needed. This will certainly contribute to the literature regarding perfectionism, especially when the association between perfectionism and help-seeking is still under-researched.

Clinical Implications

Despite the methodological limitations highlighted, findings of this review have potential implications for those clinicians working with diverse ethnic adults. A better understanding of the ethnic differences in perfectionism and depression will provide mental health practitioners (e.g. therapists) insight into the presence of specific dimensions of perfectionism in certain ethnic groups. It will also inform their clinical practice, including the focus of their assessment, the context of the formulation and suitability of the therapeutic model according to the ethnicity of the client.

We argue that when working with depressed adults (especially university students) who self-identified as one of the ethnicities examined in this review, that clinicians should pay special attention to the client's potential dimensions of perfectionism. For instance, there is evidence to suggest that depression and evaluative concerns are highly associated across all ethnicities examined in this review. In clinical practice, clinicians should be sensitive to the association of evaluative concerns and depression when working with these adults. Careful attention should be paid to the presence of evaluative concerns, incorporating it into the

assessment, formulation and active therapy work processes. For instance, they should tentatively explore with these adults how their perceptions of failing to meet their own and/or others' expectations can increase their level of depression.

The results of this review reflect the importance for clinicians to consider the links between individuals' depression and their expectations of self-performance when such expectations are unmet. Despite the largely insignificant associations between order and standards identified in this review, clinicians should still be mindful that placing high standards on the self is linked to depression in Caucasian American, European American, Asian American, African American and Indian students. They should also tentatively explore the importance and preference for order when working with Caucasian American and African American students, and how this may closely associate with their level of depression.

As noted, parenting style and family perfectionism appear to play an important role in the development of perfectionism. Our childhood experiences including unmet needs are likely to have a lasting effect on our sense of self in adulthood (Hepple & Sutton, 2004). With this in mind, clinicians should be particularly aware of the therapy process and the importance of the interpersonal therapeutic relationship. This is especially the case when they work with Caucasian American, Asian/Asian American and Indian student clients who are more likely to experience family-related perfectionism. Indeed, research indicates a significant relationship between perfectionism and clinicians not liking or willing to offer psychotherapy to perfectionistic individuals (Hewitt et al., 2017). Also, individuals with high levels of perfectionism (e.g. Asian American students) often have greater negative expectations of therapy, perceive clinicians as a source of threat before the interview, and report increased dissatisfaction after the interview (Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008). Additionally, clinicians should also be mindful of their potential perfectionistic behavior when conducting therapy. These factors may well have an impact on the

transference and counter-transference processes in therapy, resulting in less favourable therapy outcomes (Zuroff et al., 2000).

A recent meta-analysis suggests that Cognitive-Behavioural Therapy can offer some support in reducing perfectionism associated with psychological distress, such as depression, anxiety, eating disorder and obsessive-compulsive disorder (Lloyd, Schmidt, Khondoker, & Tchanturia, 2015). However, Hewitt, Flett and Mikail (2017) argue that CBT is helpful in alleviating the psychological symptoms and promoting engagement but not in addressing an individual's underlying perfectionism. In keeping with Hewitt and his colleague's views, we believe that perfectionism is relational in nature (i.e. how they see themselves and their views of how others see them), which can significantly influence the individual's self-construct, heightening their risk of developing mental health difficulties. Therefore, we believe that perfectionism may be best intervened using a psychodynamic-related therapy model, such as Cognitive Analytical Therapy or Psychodynamic Psychotherapy. However, more research on these psychological interventions is clearly required before any firm conclusions can be drawn.

Conclusion

To our best knowledge, this is the first review examining the ethnic differences in perfectionism and depression. Results of this review has identified some ethnic similarities and variations between the relationship of perfectionism and depression. Evaluative concerns were significantly related to depression across all ethnicities examined. However, there was an inconsistent relationship between depression and achievement striving and family perfectionism across the ethnic groups examined. The ethnic similarities and differences in perfectionism and depression pose relevant clinical implications; clinicians should tailor their

assessment, formulation and therapeutic interventions accordingly in keeping with the individual's ethnic background. There is a need for clinicians to duly consider the relational nature of perfectionism, using appropriate psychological models in therapy. This may involve the use of Cognitive Analytical Therapy or Psychodynamic Psychotherapy models, which share an emphasis on the transference and counter-transference processes in therapy. However, more research is required to determine the direction of effect between perfection and depression, and the appropriate psychological model for perfectionism, before conclusions can be drawn.

References

Antony, M. M., Purdon, C. L., Huta, V., & Swinson, R. P. (1998). Dimensions of perfectionism across the anxiety disorders. *Behaviour Research and Therapy,* 36(12), 1143-1154. http://dx.doi.org/10.1016/S0005-7967(98)00083-7

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review,* 97(1), 90-113. http://dx.doi.org/10.1037//0033-295X.97.1.90

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Beck depression inventory-II. *San Antonio,* 78(2), 490-498. http://dx.doi.org/10.1177/0022022102239158

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry,* 4(6), 561-571. http://dx.doi.org/10.1001/archpsyc.1961.01710120031004

Bieling, P. J., Israeli, A. L., & Antony, M. M. (2004). Is perfectionism good, bad, or both? Examining models of the perfectionism construct. *Personality and Individual Differences,* 36(6), 1373-1385. http://dx.doi.org/10.1016/S0191-8869(03)00235-6

Blankstein, K. R., Lumley, C. H., & Crawford, A. (2007). Perfectionism, hopelessness, and suicide ideation: Revisions to diathesis-stress and specific vulnerability models. *Journal of Rational-Emotive & Cognitive-Behavior Therapy,* 25(4), 279-319. http://dx.doi.org/10.1007/s10942-007-0053-6

Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist,* 50(12), 1003-1020. http://dx.doi.org/10.1037/0003-066X.50.12.1003

Burns, D. D., & Beck, A. T. (1978). Cognitive behavior modification of mood disorders. *Cognitive behavior therapy: Research and Application,* 109-134. http://dx.doi.org/10.1007/978-1-4684-2496-6_5

Button, K. S., Ioannidis, J. A., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. J., & Munafò, M. R. (2013). Power failure: why small sample size undermines the reliability of neuroscience. Nature Reviews. Neuroscience, *14*(5), 365-376. doi:10.1038/nrn3475

Castro, J. R., & Rice, K. G. (2003). Perfectionism and ethnicity: Implications for depressive symptoms and self-reported academic achievement. *Cultural Diversity and Ethnic Minority Psychology*, 9(1), 64. http://dx.doi.org/10.1037/1099-9809.9.1.64

Campbell, D. & Doward, J. (2016). Care for children with mental health problems is woeful, say GPs. *The Guardian*. Retrieved from http://www.theguardian.com/society/2016/may/14/children-mental-health-care-woeful-gps?

Cha, M. (2016). The mediation effect of mattering and self-esteem in the relationship between socially prescribed ruterperfectionism and depression: Based on the social disconnection model. *Personality and Individual Differences*, 88, 148-159. http://dx.doi.org/10.1016/j.paid.2015.09.008

Chang, E. C. (1996). Cultural differences in optimism, pessimism, and coping: Predictors of subsequent adjustment in Asian American and Caucasian American college students. *Journal of Counseling Psychology*, 43(1), 113-123. http://dx.doi.org/10.1037/0022-0167.43.1.113

Chang, E. C. (1998). Cultural differences, perfectionism, and suicidal risk in a college population: Does social problem solving still matter? *Cognitive Therapy and Research*, 22(3), 237-254. http://dx.doi.org/10.1023/A:1018792709351

Chang, E. C. (2007). Introduction to self-criticism and self-enhancement: Views from ancient Greece to the modern world. In E. C. Chang, *Self-criticism and self-enhancement:*

Theory, Research, and Clinical Implication (pp. 3–15). Washington, DC:American Psychological Association.

Chang, E. C. (2013). Perfectionism and loneliness as predictors of depressive and anxious symptoms in Asian and European Americans: Do self-construal schemas also matter? *Cognitive Therapy and Research,* 37(6), 1179-1188. http://dx.doi.org/10.1023/A:1018792709351

Chang, E. C., Chang, R., & Sanna, L. J. (2012). A test of the usefulness of perfectionism theory across cultures: Does perfectionism in the US and Japan predict depressive symptoms across time? *Cognitive Therapy and Research,* 36(1), 1-14. http://dx.doi.org/10.1007/s10608-011-9376-9

Chang, R., & Chang, E. C. (2009). Effects of socially prescribed expectations on emotions and cognitions in Asian and European Americans. *Cognitive Therapy and Research,* 33(3), 272-282. http://dx.doi.org/10.1007/s10608-008-9187-9

Chen, C., Hewitt, P. L., & Flett, G. L. (2017). Ethnic variations in other-oriented perfectionism's associations with depression and suicide behaviour. *Personality and Individual Differences, 104*, 504-509. http://dx.doi.org/10.1016/j.paid.2016.09.021

Cherry, M. G., Taylor, P. J., Brown, S. L., Rigby, J. W., & Sellwood, W. (2017). Guilt, shame and expressed emotion in carers of people with long-term mental health difficulties: A systematic review. *Psychiatry Research*, 249, 139-151. http://dx.doi.org/j.psychres.2016.12.056

Cockell, S. J., Hewitt, P. L., Seal, B., Sherry, S., Goldner, E. M., Flett, G. L., & Remick, R. A. (2002). Trait and self-presentational dimensions of perfectionism among women with anorexia nervosa. *Cognitive Therapy and Research,* 26(6), 745-758. http://dx.doi.org/10.1023/A:1021237416366

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Earlbaum Associates, Hilsdale, NJ.

Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment*, 14(3), 365. http://dx.doi.org/10.1037/1040-3590.14.3.365

DiBartolo, P. M., & Rendón, M. J. (2012). A critical examination of the construct of perfectionism and its relationship to mental health in Asian and African Americans using a cross-cultural framework. *Clinical Psychology Review*, 32(3), 139-152. http://dx.doi.org/10.1016/j.cpr.2011.09.007

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology*, 84(1), 234-252. http://dx.doi.org/10.1037/0022-3514.84.1.234

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review*, 31(2), 203-212. http://dx.doi.org/10.1016/j.cpr.2010.04.009

Elion, A. A., Wang, K. T., Slaney, R. B., & French, B. H. (2012). Perfectionism in African American students: Relationship to racial identity, GPA, self-esteem, and depression. *Cultural Diversity and Ethnic Minority Psychology*, 18(2), 118-127. http://dx.doi.org/10.1037/a0026491

Ellis, A. (2002). The role of irrational beliefs in perfectionism. In G.L. Flett & P.L. Hewitt (Eds.), *Perfectionism: Theory, research and treatment* (pp. 217-229). Washington, D.C: American Psychological Association. http://dx.doi.org/10.1037/10458-009

Enns, M. W., & Cox, B. J. (2005). Perfectionism, stressful life events, and the 1-year outcome of depression. *Cognitive Therapy and Research,* 29(5), 541-553. http://dx.doi.org/10.1007/s10608-005-2414-8

Feinstein, B. A., Hershenberg, R., Bhatia, V., Latack, J. A., Meuwly, N., & Davila, J. (2013). Negative social comparison on Facebook and depressive symptoms: Rumination as a mechanism. *Psychology of Popular Media Culture,* 2(3), 161. http://dx.doi.org/10.1037/a0033111

Flett, G. L., Hewitt, P. L., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G. L. Flett, & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 89–132). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/10458-004

Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. I., & Neubauer, A. L. (1993). A comparison of two measures of perfectionism. *Personality and Individual Differences,* 14(1), 119-126. http://dx.doi.org/10.1016/0191-8869(93)90181-2

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive therapy and research,* 14(5), 449-468. http://dx.doi.org/10.1007/BF01172967

Gouveia, V. V., Clemente, M., & Espinosa, P. (2003). The horizontal and vertical attributes of individualism and collectivism in a Spanish population. *The Journal of Social Psychology,* 143(1), 43-63. http://dx.doi.org/10.1080/00224540309598430

Hamamura, T., & Laird, P. G. (2014). The effect of perfectionism and acculturative stress on levels of depression experienced by East Asian international students. *Journal of Multicultural Counseling and Development,* 42(4), 205-217. http://dx.doi.org/10.1002/j.2161-1912.2014.00055.x

Heine, S. J., Takata, T., & Lehman, D. R. (2000). Beyond self-presentation: Evidence for self-criticism among Japanese. *Personality and Social Psychology Bulletin*, 26(1), 71-78. http://dx.doi.org/10.1177/0146167200261007

Hepple, J., & Sutton, L. (2004). *Cognitive Analytic Therapy and Later Life: New Perspective on Old Age*: Routledge.

Hewitt, P. L., Caelian, C. F., Chen, C., & Flett, G. L. (2014). Perfectionism, Stress, Daily Hassles, Hopelessness, and Suicide Potential in Depressed Psychiatric Adolescents. *Journal of Psychopathology and Behavioral Assessment*, 36(4), 663-674. http://dx.doi.org/10.1007/s10862-014-9427-0

Hewitt, P. L., & Flett, G. L. (1991a). Dimensions of perfectionism in unipolar depression. *Journal of Abnormal Psychology*, 100(1), 98-101. http://dx.doi.org/10.1037/0021-843X.100.1.98

Hewitt, P. L., & Flett, G. L. (1991b). Perfectionism in the self and social contexts: conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, 60(3), 456. http://dx.doi.org/10.1037/0022-3514.60.3.456

Hewitt, P. L., & Flett, G. L. (1993). Dimensions of perfectionism, daily stress, and depression: a test of the specific vulnerability hypothesis. *Journal of Abnormal Psychology*, 102(1), 58-65. http://dx.doi.org/10.1037/0021-843X.102.1.58

Hewitt, P. L., & Flett, G. L. (2002). Perfectionism and stress processes in psychopathology. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 255-284). Washington, DC, US: American Psychological Association. http://dx.doi.org/10.1037/10458-011

Hewitt, P. L., Flett, G. L., & Ediger, E. (1996). Perfectionism and depression: Longitudinal assessment of a specific vulnerability hypothesis. *Journal of Abnormal Psychology,* 105(2), 276-280. http://dx.doi.org/10.1037/0021-843X.105.2.276

Hewitt, P. L., Flett, G. L., Ediger, E., Norton, G. R., & Flynn, C. A. (1998). Perfectionism in chronic and state symptoms of depression. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement,* 30(4), 234-242. http://dx.doi.org/10.1037/h0087066

Hewitt, P. L., Flett, G. L., & Mikail, S. F. (2017). *Perfectionism: a relational approach to conceptualization, assessment, and treatment*: Guilford Publications.

Hewitt, P. L., Flett, G. L., Sherry, S. B., & Caelian, C. (2006). Trait Perfectionism Dimensions and Suicidal Behavior. In T. E. Ellis (Ed.), *Cognitive and suicide: Theory, research, and theory*, 215 -236. http://dx.doi.org/10.1037/11377-010

Hewitt, P. L., Habke, A. M., Lee-Baggley, D. L., Sherry, S. B., & Flett, G. L. (2008). The impact of perfectionistic self-presentation on the cognitive, affective, and physiological experience of a clinical interview. *Psychiatry: Interpersonal and Biological Processes,* 71(2), 93-122. http://dx.doi.org/10.1521/psyc.2008.71.2.93

Jain, M., & Sudhir, P. M. (2010). Dimensions of perfectionism and perfectionistic self-presentation in social phobia. *Asian Journal of Psychiatry,* 3(4), 216-221. http://dx.doi.org/10.1016/j.ajp.2010.08.006

Kim, U., & Choi, S.-H. (1994). Individualism, collectivism, and child development: A Korean perspective. *Cross-Cultural Roots of Minority Child Development*, 227-257. http://dx.doi.org/10.1177/0022022115600258

Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkunkit, V. (1997). Individual and collective processes in the construction of the self: self-enhancement in the United

States and self-criticism in Japan. *Journal of Personality and Social Psychology,* 72(6), 1245-1267. http://dx.doi.org/10.1037/0022–3514.72.6.1245

Lloyd, S., Schmidt, U., Khondoker, M., & Tchanturia, K. (2015). Can psychological interventions reduce perfectionism? A systematic review and meta-analysis. *Behavioural and Cognitive Psychotherapy,* 43(6), 705-731. http://dx.doi.org/10.1017/S1352465814000162

Manning, R. P., Dickson, J. M., Palmier-Claus, J., Cunliffe, A., & Taylor, P. J. (2017). A systematic review of adult attachment and social anxiety. *Journal of affective disorders*, 211, 44-59. http://dx.doi.org/10.1016/j.jad.2016.12.020

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. http://dx.doi.org/10.1037/0033-295X.98.2.224

McCreary, B. T., Joiner, T. E., Schmidt, N. B., & Ialongo, N. S. (2004). The structure and correlates of perfectionism in African American children. *Journal of Clinical Child and Adolescent Psychology,* 33(2), 313-324. http://dx.doi.org/10.1037/a0016264

Methikalam, B., Wang, K. T., Slaney, R. B., & Yeung, J. G. (2015). Asian Values, Personal and Family Perfectionism, and Mental Health Among Asian Indians in the United States. *Asian American Journal of Psychology, 6*(3), 223-232. http://dx.doi.org/10.1037/aap0000023

Mobley, M., Slaney, R. B., & Rice, K. G. (2005). Cultural validity of the Almost Perfect Scale--Revised for African American college students. *Journal of Counseling Psychology,* 52(4), 629-639. http://dx.doi.org/10.1037/0022-0167.52.4.629

Muyan, M., & Chang, E. C. (2015). Perfectionism as a predictor of suicidal risk in Turkish college students: Does loneliness contribute to further risk? *Cognitive Therapy and Research*, 39(6), 776-784. http://dx.doi.org/10.1007/s10608-015-9711-7

Nilsson, J. E., Paul, B. D., Lupini, L. N., & Tatem, B. (1999). Cultural differences in perfectionism: A comparison of African American and White college students. *Journal of College Student Development*, 40(2), 141-150. http://dx.doi.org/10.1037/a0015003

Ortega, N. E., Wang, K. T., Slaney, R. B., Hayes, J. A., & Morales, A. (2014). Personal and familial aspects of perfectionism in Latino/a students. *The Counseling Psychologist*, 42(3), 406-427. http://dx.doi.org/10.1177/0011000012473166

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, 128(1), 3-72. http://dx.doi.org/10.1037/0033-2909.128.1.3

Park, Y., & Kim, U. (2004). Adolescent culture and parent-child relationship in Korea: Indigenous psychological analysis. *Seoul: Kyoyook Kwahaksa*.

Pearson, C. A., & Gleaves, D. H. (2006). The multiple dimensions of perfectionism and their relation with eating disorder features. *Personality and Individual Differences*, 41(2), 225-235. http://dx.doi.org/10.1016/j.paid.2006.01.013

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401. http://dx.doi.org/10.1177/014662167700100306

Raspopovic, M. M. (2015). The connection between perfectionism and anxiety in university students. *Sanamed*, 10(3), 199-204. http://dx.doi.org/10.5937/sanamed1503199R

Rice, K. G., Choi, C.-C., Zhang, Y., Morero, Y. I., & Anderson, D. (2012). Self-critical perfectionism, acculturative stress, and depression among international students. *The*

Counseling Psychologist, 40(4), 575-600. http://dx.doi.org/10.1177/0011000011427061

Rice, K. G., Tucker, C. M., & Desmond, F. F. (2008). Perfectionism and depression among low-income chronically ill African American and White adolescents and their maternal parent. *Journal of Clinical Psychology in Medical Settings*, 15(3), 171-181. http://dx.doi.org/10.1007/s10880-008-9119-6

Roxborough, H. M., Hewitt, P. L., Flett, G. L., & Abizadeh, J. (2009). Borderline personality organization and the interpersonal components of perfectionism: A review of two overlapping personality pathologies. *World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 3(6), 1180-1187. http://dx.doi.org/10.5281/zenodo.1061346

Saboonchi, F., Lundh, L.-G., & Öst, L.-G. (1999). Perfectionism and self-consciousness in social phobia and panic disorder with agoraphobia. *Behaviour Research and Therapy*, 37(9), 799-808. http://dx.doi.org/10.1016/S0005-7967(98)00183-1

Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: A cognitive–behavioural analysis. *Behaviour Research and Therapy*, 40(7), 773-791. http://dx.doi.org/10.1016/S0005-7967(01)00059-6

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The revised almost perfect scale. *Measurement and Evaluation in Counseling and Development*, 34(3), 130.

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2015). Perfectionistic strivings and perfectionistic concerns interact to predict negative emotionality: Support for the tripartite model of perfectionism in Canadian and Chinese university students.

Personality and Individual Differences, 81, 141-147. http://dx.doi.org/10.1016/j.paid.2014.09.006

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2016). Cultural similarities in perfectionism: Perfectionistic strivings and concerns generalize across Chinese and Canadian groups. *Measurement and Evaluation in Counseling and Development*, 49(1), 63-76. http://dx.doi.org/10.1177/0748175615596785

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2016). A person-centered perspective on multidimensional perfectionism in Canadian and Chinese university students: A multigroup latent profile analysis. *Journal of Multicultural Counseling and Development*, 44(2), 135-151. http://dx.doi.org/10.1002/jmcd.12042

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2017). Does perfectionism predict depression, anxiety, stress, and life satisfaction after controlling for neuroticism?: A study of canadian and Chinese undergraduates. *Journal of Individual Differences*, 38(2), 63-70. http://dx.doi.org/10.1027/1614-0001/a000223

Stoeber, J. (2018). The psychology of perfectionism: Critical issues, open questions, and future directions. In J. Steober (Ed.), *The psychology of perfectionism: Theory, research, applications*, 333-352. http://dx.doi.org/10.1016/j.paid.2014.01.003

Taylor, P. J., Hutton, P., & Wood, L. (2015). Are people at risk of psychosis also at risk of suicide and self-harm? A systematic review and meta-analysis. *Psychological Medicine*, 45(5), 911-926. http://dx.doi.org/10.1017/S0033291714002074

Thorndike, E. L. (1898). Animal intelligence: An experimental study of the associative processes in animals. *Psychological Monographs: General and Applied*, 2(4), i-109. http://dx.doi.org/10.1037/h0092987

Torgerson, C. J. (2006). PUBLICATION BIAS: THE ACHILLES'HEEL OF SYSTEMATIC REVIEWS? *British Journal of Educational Studies,* 54(1), 89-102. http://dx.doi.org/10.1111/j.1467-8527.2006.00332.x

Wang, K. T. (2010). The Family Almost Perfect Scale: Development, psychometric properties, and comparing Asian and European Americans. *Asian American Journal of Psychology,* 1(3), 186-199. http://dx.doi.org/10.1037/a0020732

Wang, K. T., Puri, R., Slaney, R. B., Methikalam, B., & Chadha, N. (2012). Cultural validity of perfectionism among Indian students: Examining personal and family aspects through a collectivistic perspective. *Measurement and Evaluation in Counseling and Development,* 45(1), 32-48. http://dx.doi.org/10.1177/0748175611423109

Wang, K. T., Wong, Y. J., & Fu, C.-C. (2013). Moderation effects of perfectionism and discrimination on interpersonal factors and suicide ideation. *Journal of Counseling Psychology,* 60(3), 367-378. http://dx.doi.org/10.1037/a0032551

Weisz, J. R., Weiss, B., Suwanlert, S., & Chaiyasit, W. (2006). Culture and youth psychopathology: Testing the syndromal sensitivity model in Thai and American adolescents. *Journal of Consulting and Clinical Psychology,* 74(6), 1098-1107. http://dx.doi.org/10.1037/0022-006X.74.6.1098

Wheeler, H. A., Blankstein, K. R., Antony, M. M., McCabe, R. E., & Bieling, P. J. (2011). Perfectionism in anxiety and depression: Comparisons across disorders, relations with symptom severity, and role of comorbidity. *International Journal of Cognitive Therapy,* 4(1), 66-91. http://dx.doi.org/10.1521/ijct.2011.4.1.66

Yoon, J., & Lau, A. S. (2008). Maladaptive perfectionism and depressive symptoms among Asian American college students: Contributions of interdependence and parental relations. *Cultural Diversity and Ethnic Minority Psychology,* 14(2), 92-101. http://dx.doi.org/10.1037/1099-9809.14.2.92

Zuroff, D. C., Blatt, S. J., Sotsky, S. M., Krupnick, J. L., Martin, D. J., Sanislow III, C. A., & Simmens, S. (2000). Relation of therapeutic alliance and perfectionism to outcome in brief outpatient treatment of depression. *Journal of Consulting and Clinical Psychology*, 68(1), 114-124. http://dx.doi.org/10.1037/0022-006X.68.1.114

Psychological help-seeking attitudes and perfectionism in different ethnic groups

Chapter 2: Empirical paper

Ho Yin Chan

Abstract

Objective: Research indicates that there are ethnic variations in perfectionism and psychological help-seeking in the UK. However, it is unclear if people from diverse ethnic backgrounds present with different levels of psychological help-seeking attitudes when they experience perfectionism and psychological distress. The present study aimed to address this gap by examining the ethnic differences in perfectionism, depression and anxiety states, and help-seeking attitudes. Methods: University students (n=1066) completed a set of online questionnaires. Two ethnic groups, China-born Chinese International students (n=109) and UK-born White British home students (n=541), were compared on three dimensions of perfectionism, as well as depression and anxiety states. Using cluster analysis, two groups were formed: "higher perfectionism and psychological distress" and "lower perfectionism and psychological distress". Multiple ANOVA analyses and t-tests were then performed to examine the ethnic differences between these variables in each cluster group, and how the clusters differed in help-seeking attitudes. Results: White British students reported significantly greater levels of self-oriented and socially-prescribed perfectionism than Chinese students. Perfectionism, depression and anxiety states were negatively associated with help-seeking attitudes in White British and Chinese student groups. Both groups reporting higher levels of perfectionism and depression and anxiety states had less favourable attitudes to help-seeking; those with lower levels of perfectionism and psychological distress had more favourable attitudes to help-seeking. Conclusions: The ethnic variations in perfectionism and psychological distress may pose clinical implications for mental health services. Services should actively promote UK-born White British and Chinese International students' access to mental health services. However, the focus of psychological interventions and psycho-education should be different for these two ethnic groups.

Keywords: Perfectionism, help-seeking, ethnicity

Introduction

People with depression and/or anxiety do not necessarily seek psychological help (Gulliver, Griffiths, Christensen, & Brewer, 2012). It is estimated that only 50% of individuals who experienced depression (Andrew et al., 1999; Bland & Newman, 1997; Roy-Byrne et al, 2000) and between 33% and 50% of those with anxiety (Andrews et al., 2001) sought professional help. For instance, many people have been found to prefer to seek support from their friends or family as opposed to professionals such as doctors or psychologists (Rickwood & Braithwaite, 1994; Rickwood et al., 2007). In the 2015 National Union of Students survey, 78% of 1093 students reported experiencing mental health problems in the previous year, and yet, 54% of them did not seek professional support. Many young students who choose not to seek psychological help may minimize their level of distress for fear of being judged (Vidourek, King, Nabors, & Merianos, 2014). The result is that they cope with their difficulties alone and perpetuate a cycle of avoidance (Biddle, 2007). They may increase the threshold of tolerable distress, normalising their psychological difficulties and reducing the likelihood of seeking professional help.

Ethnicity and Help-Seeking

There is an association between ethnicity and seeking psychological help. The Chinese population has been consistently shown to be underrepresented in NHS primary and secondary care services (Smaje & Le Grand, 1997; Tran, 2009). A study of Chinese international students concluded that this ethnic minority group faced more barriers, such as stigma and concerns about confidentiality, in terms of accessing psychological services, when compared to local British students (Yu, 2009). This is likely to be caused by their perception of mental health problems; they see mental health problems as the product of a personality deficit and a moral burden (Jubert, 2009). The Mental Health Survey of Ethnic Minorities

(Rehman & Owen, 2013) report found that only 20% of the Black Minority Ethnic (BME) population described feeling confident discussing their mental health and accessing support when needed. It is common for ethnic minorities to seek help only when they reach a crisis point (Turning Point, 2015). They are 40% more likely than White British people to access mental health services via the criminal and justice system as opposed to seeking help from General Practitioners (GPs) or engaging in talking therapies (Kane, 2014). Their understanding of mental health, communication of distress and varying expectations of services appear to play an important role in their decision to access services (Kane, 2014). The perception of an individual being weak, incompetent and unable to look after themselves are all common barriers to seeking psychological support (Corrigan et al., 2001; Read & Law, 1999). Their reluctance to engage with mainstream mental health services is likely to result in unreported and untreated mental health difficulties.

Recently, a meta-analysis argued that younger generations (i.e. between 18 and 25) in the UK and US present with a high level of perfectionism (Curran & Hill, 2017). The prevalence of a “trophy culture” and the need to be “perfect” in the younger generation often results in higher levels of competition and performance comparison against peers (Campbell & Doward, 2016). Those who make social comparisons are more likely to experience depressive symptoms (Feinstein et al., 2013). Thus, there is a need to study perfectionism within the younger generations.

Perfectionism

Perfectionism is concerned with an individual placing high standards on their performance and being overly critical of one's own behavior (Frost, Marten, Lahart, & Rosenblate, 1990). Perfectionism has become an increasingly common phenomenon among the younger generation in the UK (Curran & Hill, 2017). Perfectionism can have a positive

impact on individuals, resulting in greater levels of internal locus of control (Periasmy & Ashby, 2002), satisfaction and pride (Stoeber & Yang, 2010), higher self-esteem and social connectedness (Stoeber & Otto, 2006). However, perfectionism is highly associated with psychopathology (Egan, Wade, & Shafran, 2011) and psychological difficulties (Hewitt, Flett, & Mikail, 2017). For instance, there is evidence suggesting that perfectionism is associated with depression (Cox, Enns, & Clara, 2002; Hamamura & Laird, 2014; Smith, Saklofske, Yan, & Sherry, 2016; Martin M Smith et al., 2016) and anxiety (Blankstein, Flett, Hewitt, & Eng, 1993; Hewitt & Flett, 1991; Raspopovic, 2015; Saboonchi & Lundh, 1997). Perfectionism can lead to procrastination or even complete withdrawal from university study (Rutter, 2015).

Perfectionism is a multidimensional psychological construct (e.g. Frost et al., 1990; Hewitt & Flett, 1990, 1991; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Hewitt and Flett (Hewitt & Flett, 1990, 1991) posited that perfectionism consists of three dimensions, including self-oriented, other-oriented and socially-prescribed perfectionism. Individuals with a higher level of self-oriented perfectionism place high expectations on themselves to achieve perfection. This dimension of perfectionism is associated with anxiety, somatization, paranoia, alcoholism and suicide (Hewitt & Flett, 2004). Those with a higher level of other-oriented perfectionism tend to rigorously evaluate others' performance and place demands on others to strive for perfection (Hewitt & Flett, 1991). They are critical of those who do not achieve these standards and are more likely to present with narcissistic, antisocial and uncaring personality traits (Stoeber, 2006). Socially-prescribed perfectionism is concerned with the tendency for individuals to strive for perfection due to their belief that others would be critical of them if they fail to achieve these expectations. It is associated with higher levels of anxiety and stress, depression, and lower life satisfaction (Hill et al. 2004; Stoeber & Otto, 2006). Given that perfectionism has become more prevalent in younger generations (Curran

& Hill, 2017) and that students are significantly more likely to experience psychological distress than the general population (Stallman, 2010), there is a clinical rationale to explore the relationship between perfectionism and help-seeking in the university student population.

Perfectionism and help-seeking attitudes

There are few studies examining the relationships between perfectionism and help-seeking attitudes. Literature suggests that people with socially-prescribed perfectionism may experience a fear of asking for help (Onwuegbuzie & Daley, 1999). Those who had higher concerns over mistakes, which has been defined as a perfectionism dimension (Frost et al., 1990), were more likely to keep their mistakes as secrets from others. (Frost et al., 1997). It is theorized that individuals with perfectionism would experience shame relating to social stigma and fears about asking for psychological help (Zeifman et al., 2015). Such individuals have a greater need to be seen as flawless and to have a higher degree of control over their emotions (Kawamura & Frost, 2004). This may cause them to minimize their psychological problems, reducing their likelihood to seek help and discuss the content of their distress (Wheaton, Sternberg, McFarlane, & Sarda, 2016). To our knowledge, ethnic differences in the association between perfectionism and help-seeking attitudes have not been empirically evaluated. Despite research indicating that ethnic minorities in the UK are more reluctant to seek help, it is unclear if their attitudes towards seeking psychological help would differ, depending on their levels of perfectionism and psychological distress (e.g. depression and anxiety states).

Perfectionism and Ethnicity

Existing literature on perfectionism is primarily concerned with American populations, especially the Caucasian American population. There are limited studies comparing the differences in perfectionism between different ethnic groups outside America

(DiBartolo & Rendón, 2012). People from different ethnic groups may develop or experience perfectionism differently due to individual, family and sociocultural factors (Dibartolo & Rendon, 2010). For instance, Asian Americans are posited to value interdependence and familial responsibility more highly than White Americans (Yoon & Lau, 2008). They are concerned with their own actions and mistakes, and experience higher levels of parental expectations and criticism, loneliness, depression, anxiety and poorer academic performance (Castro & Rice, 2003; Chang, 1998). Similarly, perfectionism in the Chinese population is positively associated with depression, hopelessness, life stress and problem-solving deficits (Cheng, 2001; Smith et al., 2016; Smith, Saklofske, Yan, & Sherry, 2017). In a recent comparison study, Chinese students reported a significantly higher level of socially-prescribed perfectionism and lower level of self-oriented perfectionism than Canadian students (Smith et al., 2017). In this study, Chinese students' levels of self-oriented and socially-prescribed perfectionism did not relate consistently to depression and anxiety. However, significant correlations were observed in the Canadian group. This highlighted that there are ethnic differences in the relationships between perfectionism and psychological distress.

To our knowledge, there is no research which has examined the association between perfectionism and psychological difficulties in White British students. However, a cultural study into collectiveness and individualism found when compared to British university students, that Japanese undergraduates experienced lower self-oriented perfectionism and higher socially-prescribed perfectionism (Stoeber, Kobori, & Tanno, 2013). The results appeared to confirm the conceptualization of westerners' self-identity being construed on independence and psychological features that are different to others (i.e. higher self-oriented perfectionism). In contrast, easterners' (e.g. Japanese) self-identity is constructed on interdependence and their roles within their social relationships and family (i.e. higher

socially-prescribed perfectionism; Markus & Kitayama, 1991). Given that the different dimensions of perfectionism are associated with some forms of psychological difficulties, the ethnic differences in self-oriented and socially-prescribed perfectionism may also play a significant role in the psychological distress experienced by people from traditionally individualistic cultures and those who are from traditionally collectivistic cultures. Thus, researchers are encouraged to explore the relationships between the different dimensions of perfectionism and psychological outcomes across different ethnic groups (DiBartolo & Rendón, 2012). This study aimed to address this research gap and identify the ethnic profile of perfectionism and psychological distress (i.e. depression and anxiety states) using cluster analysis.

The Present Study

There is limited research exploring the relationships between perfectionism and psychological help-seeking attitudes. Moreover, there is a paucity of literature addressing how attitudes towards seeking psychological help can be influenced by the depression and anxiety states, and the three dimensions of perfectionism proposed by Hewitt and Flett (1990) across different ethnic groups. To address this gap, cluster analysis is used in this study to create homogeneous groups of participants presenting with highly similar psychological profiles based on three dimensions of perfectionism and depression and anxiety states. Cluster analysis is a person-centred approach describing the differences among groups in how variables are associated with each other. This analytical method is chosen because we believe that although each ethnic group being demographically homogenous in nature (i.e. same ethnicity, student status and country of birth), that they are, in fact, heterogeneous with respect to the way the variables (i.e. perfectionism, depression and anxiety states) are associated with each other. In this study, the formation of these homogeneous cluster groups has a distinctive feature of being similar within groups and different between groups. This

allows further analysis to be carried out, examining not only the differences in the variables between the groups but also across different ethnicities in each of these groups.

Furthermore, using the DASS-21 cut-off points, we expect to identify ethnic differences in each cluster group with respect to their presenting levels of depression and anxiety states. This will provide us with a more comprehensive picture accounting for not only the statistical differences of psychological distress but also the clinical profiles and relevance, with respect to the cluster and ethnic groups examined.

The outcome of this study will inform services and University establishments of the mental health needs of different student ethnic groups. The results of this study will be shared with university academic staff to increase their awareness of the potential presence of perfectionism and states of depression and anxiety in students who are less likely to seek help when it is needed.

Hypotheses

1. We expect that there will be negative associations between help-seeking attitudes and perfectionism, as well as with depression and anxiety states.
2. We predict that Chinese students will score significantly higher in socially-prescribed perfectionism than the White British students; White British students will score significantly higher in self-oriented perfectionism than the Chinese students. Based on the literature suggesting the association between socially-prescribed perfectionism and depression, we predict that Chinese students will report statistically higher levels of depression state compared to the White British students. Since both self-oriented and socially-prescribed perfectionism are associated with anxiety, we expect that there will be no differences between White British and Chinese students' level of reported anxiety state.

3. We expect that White British students will report more favourable help-seeking attitudes than Chinese students. We anticipate that those who are clustered as being higher on perfectionism, and depression and anxiety states will report less favourable attitudes to seeking help than those clustered in low perfectionism groups and those with less depression or anxiety states; we intend to explore whether these differences in seeking help would differ between White British and Chinese students within the clusters found.

Method

Design

We used a cross-sectional correlational study which involved the use of three questionnaire measures and a demographic questionnaire (see Appendix D).

Procedure

We carried out an online-study as it was felt that this approach would give participants the flexibility of space and time to complete the questionnaires; they might be more willing to report their levels of perfectionism and psychological difficulties freely without the presence of a researcher. Inclusion criteria for this study were: a) participants must be 18 years or over and b) students of the University of Liverpool. All students would have met the minimum requirement for English language skills to be enrolled in undergraduate and postgraduate courses. Therefore, it was expected that they would be able to complete the English questionnaires. Participants were required to read the participants information sheets and complete the consent form before the commencement of the study (see Appendix E and F). On completion of the study, they could also enter a prize draw for one of five Amazon vouchers worth £30 each. However, in order to prevent multiple entries, participants were required to provide their university email addresses in order to enter the

prize draw. Participants also had the opportunity to request the results of this study by leaving their personal or university email.

This study was approved by both the Research Committee of the Doctorate of Clinical Psychology and Ethics Committee of the University of Liverpool (see Appendix G and F**).** Prior to putting the questionnaires on the Qualtrics System, we spent time with three university students from different ethnic backgrounds individually, discussing their views on this project. Their feedback was positive as they could easily relate themselves to the construct of perfectionism. They believed that this was a worthwhile project and they all expressed interest in taking part.

The recruitment started in March 2017 and ended in November 2017. Each of the University's head of department and their administrators were contacted and asked to circulate the recruitment email to their students on their mailing lists (see Appendix H). To recruit participants from diverse ethnic minority backgrounds, the researcher approached the team leader of the International Student Service, as well as the University's cultural and social societies (see Appendix I) for list of societies contacted) via emails and meetings with them. We requested that they forward the recruitment email (see Appendix J) to their students and societal members. This process was repeated several times. Only approximately one-third of these societies responded to the researcher's email or sent out the recruitment information to their members. In addition, posters were placed across university campuses. First-year undergraduate psychology students were given the opportunity to participate in this study via the University's Experiment Participation Requirement (EPR) scheme, allowing them to gain research credits for their course.

Power Calculation

A non-clinical sample was recruited from the student population at the University of Liverpool. Based on an F-test ANOVA analysis which accounts for 0.25 effect size, α=0.05, 0.8 power, four groups (i.e. the multiplication of two ethnic groups by two clusters groups equals four groups), and one numerator *df* (i.e. two ethnic groups: 2-1=1; two cluster groups: 2-1=1), the G*Power indicated that 128 participants were required for this study. The power calculation for cluster analysis is less clear as there are no set rules about the sample number needed (Dolnicar, 2002). However, the minimal sample size should be more than 2^k (k equals to the number of variables) and ideally $5*2^k$ (Formann, 1984). Self-oriented, other-oriented and socially-prescribed perfectionism, and depression and anxiety states were independent variables in this study, this meant that the minimum sample size should be 2^5, which was 32 for each cluster group.

Materials

Demographic Questionnaire accounted for the participants' gender, age range, ethnicity, the country of birth, level of their course, the year of study, student status, whether they were studying their first-degree course, their department/school in the university and length of stay in the UK. Participants' ethnicity backgrounds were measured by the UK NHS ethnic category system.

Depression Anxiety Stress Scales short version (DASS-21; Lovibond & Lovibond, 1995). DASS-21 consists of 21 items with seven items in each subscale. Participants were required to rate the severity/frequency of their distress over the past week using a four-point scale. The three subscales were depression, anxiety and stress states. Previous studies have found that the internal consistency of the three subscales of DASS-21 varied between .81 to .97 (Brown et al., 1997; Clara et al., 2001; Beurs et al., 2001) with

satisfactory convergent and divergent validity (Anthony et al., 1998; Brown et al., 1997; Beurs et al., 2001; Lovibond & Lovibond, 1995). The full scale of DASS-21 was administered in this study. However, only the depression and anxiety subscales were examined in the statistical analysis; we were primarily interested in the levels of depression and anxiety states as they are considered as common mental health problems by the NICE guideline (NICE, 2011; see Appendix K).

Multidimensional Perfectionism Scale (MPS, Hewitt & Flett, 1990). MPS is a 45-item scale which measures self-oriented, other-oriented and socially-prescribed perfectionism. The MPS is a seven-point Likert scale (1=disagree to 7= agree) with 15 items in each domain. The construct of this scale is rigorous with strong psychometric properties. For instance, various studies have demonstrated reliability and validity of this scale (Hewitt & Flett, 1991a, 1991b; Hewitt et al., 1991). These studies also showed that this scale has good internal consistency, varying between .89-.89 for self-oriented perfectionism; .79-.82 for other-oriented perfectionism; and .63-.87 for socially prescribed perfectionism. Hewitt and Flett (1991b) argue that this scale carries strong convergent validity when compared to different personality measures **(**see Appendix L**)**.

Attitudes toward seeking professional psychological help Scale (ATSPPHS; Fischer & Turner, 1970). ATSPPHS is a 29-item measure which consists of four subscales: recognition of the need for psychological help (eight items); stigma tolerance (five items); interpersonal openness (seven items); and confidence in mental health practitioners (nine items). This is a four-point Likert scale (0 to 3), and the total scores were calculated in the analysis. This measure has been validated and used with Western and Eastern samples (e.g. Boey, 1999; Masuda et al, 2005; Tang et al., 2012). Past research has reported acceptable internal consistency, with the Cronbach alpha coefficient reported of .79 and .86 (Tang et al., 2012; Fischer & Turner, 1970; see Appendix M). A previous study has found that this scale

has good predictive validity as it discriminated between university students who later sought psychological support and those who did not (Cash, Kehr & Salzback, 1978).

Results

Participants

University students (N=1701) participated, of whom 1066 completed all measures and the demographic questionnaire (see Table. 1). Using the UK National Health Service (NHS) ethnic category system, a classification used in the UK 2001 census (see Appendix N), there were: 579 White British (54.01%), 23 White Irish (2.15%), 126 other White background (11.75%), 8 White and Black Caribbean (0.75%), 7 White and Black African (0.65%) , 16 White and Asian (1.49%), 16 other mixed background (1.49%), 25 Indian (2.33%), 13 Pakistani (1.21%), 4 Bangladeshi (0.37%), 37 other Asian background (3.45%), 8 Caribbean (0.75%), 28 African (2.61%), 4 other black background (0.37%), 143 Chinese (13.34%) and 35 other ethnic group (3.26%). Please refer to Appendix O for participants' country of birth.

To ensure the homogeneity of each ethnic group that we could analyze, we decided to group participants according to their self-reported ethnicity, their country of birth and student status. Following the completion of recruitment, we could only identify two ethnic groups meeting this criterion and the proposed power calculation (n=128). They were: a) UK-born White British home students (n=541), and b) China-born Chinese International students (n=109). Table 1 shows the demographic details for the Chinese, White British and all participant groups.

Table. 1 Participants demographics

		Chinese (*n*=109)	White British (*n*=541)	All Participants (*n*=1066)
Gender	Male	40 (36.7%)	128 (23.7%)	312 (29.3%)
	Females	69 (63.3%)	413 (76.3%)	754 (70.7%)
Age range	18-25	95 (87.2)	479 (88.5%)	891 (83.6%)
	26-30	12 (11%)	40 (7.4%)	107 (10%)
	30-35	2 (1.8%)	15 (2.8%)	46 (4.3%)
	36 or above	-	7 (1.3%)	22 (2.1%)
Time spent in the UK	Since birth	-	541 (100%)	631 (59.2%)
	One year or less	62 (56.9%)	-	197 (18.5%)
	1 to 3 years	41 (37.6%)	-	413 (13.4%)
	4-10 years	6 (5.5%)	-	52 (4.9%)
	10 years or above	-	-	43 (4%)
Student status	Home student		541 (100%)	717 (67.3%)
	International students	109 (100%)	-	349 (32.7%)
Number of degree(s)	First degree	83 (76.1%)	443 (81.9%)	799 (75%)
	More than one	26 (23.9%)	98 (18.1%)	267 (25%)
Level of study	Undergraduate	72 (66.1%)	460 (85%)	816 (76.5%)
	Masters	25 (22.9%)	31 (5.7)	118 (11.1%)
	PhD	12 (11%)	50 (9.2%)	132 (12.4%)

Data Analysis Plan

There were no missing data as participants were required to answer each item on the questionnaires in order to complete the study. All six variables were screened for skewness and kurtosis based on the combined data of the Chinese and White British samples (n= 650; see Appendix P). The results found that the skewness and kurtosis for all variables were all within ± 1, except for the skewness score for DASS-21 anxiety state (1.01). However, the skewness z-scores were high for ATSPPHS (-3.30), and depression (8.40) and anxiety (10.10) states, suggesting that they were not normally distributed; such observation was confirmed by the visual examination of the histograms of these variables. The data

distribution for sample sizes above 300 with an absolute skewness value lower than 2 should be considered as normal based on recommendations (Kim, 2013); all were under this threshold, so we carried out analyses without transformations.

All analyses were computed using SPSS v.24 (IBM Corporation., Armonk, NY, USA). Due to the skewed distribution of the scores of Attitudes Towards Seeking Professional Psychologist Help (ATSPPHS) and DASS-21 depression and anxiety states, the Spearman's rho correlation test was performed. This analysis was to test the hypothesis that people who scored high on the dimensions of perfectionism and depression and anxiety states would score low on help-seeking attitudes. Then, the bootstrapping method with 1000 bootstrap sample and 95% confidence interval of the parameter (Field, 2018) was carried out as a robust estimation (i.e. bias-corrected accelerated) method in the t-test for Chinese and White British samples.

Next, we split the dataset by ethnicity and performed a cluster analysis computing for the Chinese and White British sample based on five standardized variables: self-oriented, other-oriented and socially-prescribed perfectionism, and depression and anxiety states. Cluster analysis is a person-centred statistical analysis that identifies homogeneous subgroups of cases in a given population (Garson, 2014). Prior to analyzing the data, we did not know how many subgroups would be formed within the White British and Chinese groups. Cluster analysis in SPSS allowed us to identify these subgroups by minimizing the within-group variation and maximizing the between-group variation with respect to the variables examined. Once these subgroups were formed, they were then used in further ANOVA analysis as independent variables. In this study, we performed a two-step cluster analysis which is the preferred choice for handling a large dataset and when there are more than three variables (Garson, 2014). The first step involved addressing the scaling problem by forming

the pre-clusters. The second step then treated the pre-clusters as single cases via hierarchical clustering (using icicle plots and dendrograms).

We then tested the hypothesis that there would be ethnic variations in these homogeneous cluster groups with respect to the three dimensions of perfectionism and depression and anxiety states. We performed multiple two (White British/Chinese)-by-two (cluster groups) between-group ANOVA analyses using ethnicity (0=White British and 1=Chinese) and cluster groups as independent variables and each of the other five variables as dependent variables. This analysis was carried out to examine if there were any differences in each cluster group between the White British and Chinese students based on the five variables we clustered them on. Based on the literature, we were particularly interested to examine if: a) White British students presented with a higher degree of self-oriented perfectionism than the Chinese students, and b) Chinese students presented with a higher level of socially-prescribed perfectionism and depression than the White British students, in these cluster groups. Since both self-oriented and socially-prescribed perfectionism are associated with anxiety, we expected there would be no difference between White British and Chinese students in the anxiety state.

Finally, to test the ultimate hypothesis that people who clustered together on being high on perfectionism and psychological distress might have lower attitudes to seek help, we performed another two (White British/Chinese)-by-two (cluster groups) between-group ANOVA analyses with the same bootstrapping method to test if clusters and ethnicities differed in help-seeking attitudes.

Main Analyses

Table 2 shows the results of a descriptive analysis for the White British and Chinese students, and all participants. The Cronbach alpha coefficient values for all subscales in each

participant groups were over .70, suggesting that there was acceptable internal consistency for these subscales.

Table 2. Descriptive analysis

		Chinese *n*=109	White British *n*=541	All participants *n*=1066
SOP	**α**	.87	.92	.90
	Mean	64.39	74.03	72.79
	S.D	14.02	16.36	15.83
	Min	23	29	23
	Max	95	105	105
OOP	**α**	.72	.81	.97
	Mean	55.33	56.45	57.68
	S.D	10.19	12.09	12.02
	Min	26	22	22
	Max	87	100	102
SPP	**α**	.82	.89	.87
	Mean	55.57	60.82	59.72
	S.D	11.90	14.96	14.12
	Min	28	22	22
	Max	88	101	101
State of depression	**α**	.91	.92	.91
	Mean	11.49	14.26	13.56
	S.D	10.60	11.32	11.11
	Min	0	0	0
	Max	42	42	42
State of anxiety	**α**	.85	.83	.82
	Mean	11.63	11.18	11.17
	S.D	9.15	9.20	3.03
	Min	0	0	0
	Max	42	42	42
ATSPPHS	**α**	.77	.88	.87
	Mean	51.77	50.82	51.20
	S.D	9.93	13.54	12.94
	Min	20	5	5
	Max	71	82	83

SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; SPP = Socially-Prescribed Perfectionism; ATSPPHS = Attitudes Towards Seeking Professional Psychological Help Scale.

<u>Are perfectionism and states of depression and anxiety negatively correlated to help-seeking attitudes?</u>

To test the hypothesis that perfectionism and depression and anxiety states would be negatively correlated with help-seeking attitudes, Spearman's rho correlation analysis was

performed, including all participants with complete data (n=1066). Table 3 shows that there were significant associations between all six variables except for depression state and other-oriented perfectionism. The relationships between all other variables yielded a significance level of $p<0.01$ apart from other-oriented perfectionism and anxiety state. Help-seeking was negatively and significantly correlated with self-oriented, other-oriented and socially-prescribed perfectionism, and depression and anxiety states.

Table. 3 Spearman's rho correlation for all participants

	SOP	OOP	SPP	State of depression	State of anxiety	ATSPPHS
SOP	1					
OOP	.40**	1				
SPP	.49**	.25**	1			
State of depression	.17**	-.02	.45**	1		
State of anxiety	.28**	.07*	.43**	.61**	1	
ATSPPHS	-.11**	-.16**	-.25**	-.18**	-.18**	1

*p< 0.05 level, two-tailed. **. p< 0.01 level, two-tailed.
SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; SPP = Socially-Prescribed Perfectionism; ATSPPHS = Attitudes Towards Seeking Professional Psychological Help Scale.

The correlations for all six variables across the Chinese and White British groups are shown in Table 4. The associations among these variables were all statistically significant, except for other-oriented perfectionism and the depression and anxiety states in White British students. Help-seeking attitudes was again negatively and significantly correlated with self-oriented, other-oriented and socially-prescribed perfectionism in both Chinese and White British groups. This suggests that both White British and Chinese students who scored high on self-oriented, other-oriented and socially-prescribed perfectionism, depression and anxiety states reported less favourable attitudes toward help-seeking.

Table.4 Spearman's rho correlations for Chinese and White British students

	SOP	OOP	SPP	State of depression	State of anxiety	ATSPPHS
SOP	1	.43**	.38**	.35**	.36**	-.21*
OOP	.35**	1	.40**	.31**	.30**	-.34**
SPP	.56**	.22**	1	.62**	.49**	-.38**
State of depression	.16**	-.08	.43**	1	.75**	-.22*
State of anxiety	.31**	.01	.45**	.59**	1	-.33**
ATSPPHS	-.14**	-.17**	-.27**	-.15**	-.14**	1

*p< 0.05 level, two-tailed. **. p< 0.01 level, two-tailed.
Correlation above the diagonal are for Chinese students, n = 109, correlation below the diagonal are for British students, n = 541. SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; SPP = Socially-Prescribed Perfectionism; ATSPPHS = Attitudes Towards Seeking Professional Psychological Help Scale.

Do White British and Chinese students differ on perfectionism and the state of depression and anxiety?

We carried out an independent-samples t-test with bootstrapping bias-corrected accelerated method (1000 bootstrap sample and 95% CI) to compare the self-oriented, other-oriented and socially-prescribed perfectionism, and depression and anxiety states scores for Chinese and White British samples (Table 5). This analysis was to test the idea that: a) Chinese students would score higher in socially-prescribed perfectionism and depression than White British students, b) White British students would score higher in self-oriented perfectionism, and c) there would be no differences between both ethnic groups in relation to other-oriented perfectionism and depression. White British students scored significantly higher in self-oriented perfectionism (M=74.03, SD= 16.36) than Chinese students (M=64.39, SD=14.02; t(172.77)=6.36, p<.001, two-tailed). The magnitude of the differences in the means (mean difference=9.64, 95% CI: 6.65 to 12.64) was medium to large (Cohen's d=.64).

White British students also scored higher in socially-prescribed perfectionism (M=60.82, SD=14.96) than the Chinese students (M=55.57, SD=11.90; t(184.08)=4.01,

p<.001, two-tailed). The magnitude of the differences in the means (mean difference=5.25, 95% CI: 2.66 to 7.83) was small to medium (Cohen's d =.39). The findings highlighted that White British students were statistically higher in self-oriented and socially-prescribed perfectionism, but not in other-oriented perfectionism, than the Chinese students. The result of White British students scoring higher on self-oriented perfectionism was expected as the literature suggests that self-enhancement is more prevalent in the west. However, surprisingly, they also scored significantly higher on socially-prescribed perfectionism than the Chinese students, an ethnicity which is theorized to be more collective and interdependent.

Contrary to what we predicted, White British students also reported significantly higher depression scores (M=14.26, SD=11.32) than Chinese students (M=11.49, SD=10.59; t(648)=2.36, p=.02, two-tailed). The magnitude of the differences in the means (mean difference=2.77, 95% CI .46 to 5.08) was small to medium (Cohen's d=.25).

Using the DASS-21 cut-off points, White British students reported mean scores of a moderate level in depression state (mean=14.26, SD=11.32) and anxiety state (mean=11.18, SD=9.20) compared to mild depression (mean=11.49, SD=10.60) and moderate anxiety (mean=11.63, SD=9.15) in Chinese students.

Table. 5 T-test for Chinese and White British students

	White British (n=541)		**Chinese (n=109)**		**T-Test equality of means Sig. (two-tails)**	**Cohen's d**
	Mean	SD	Mean	SD		
SOP	74.03	16.36	64.39	14.02	00	0.64
OOP	56.45	12.09	55.33	10.19	.31	0.10
SPP	60.82	14.96	55.57	11.90	.00	0.39
State of Depression	14.26	11.32	11.49	10.60	.02	0.25
State of Anxiety	11.18	9.20	11.63	9.15	.64	-0.05

SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; SPP = Socially-Prescribed Perfectionism.

Can contrasting profiles of people who have higher and lower levels of perfectionism and psychological distress (i.e. depression and anxiety states) be found and will these profiles be different for White British and Chinese students?

Next, we split the dataset by ethnicity and carried out an exploratory analysis, which involved performing a cluster analysis for each ethnic group based their profiles on the clustered variables (e.g. self-oriented, other-oriented and socially-prescribed perfectionism, and depression and anxiety states). The two-steps cluster analysis formed two cluster groups (Table 6), which were then named as "higher perfectionism and psychological distress" and "lower perfectionism and psychological distress". Both clustered groups yielded a fair silhouette fit (0.5).

There were 250 White British (46.21%) and 41 Chinese (37.61%) students being clustered into the higher perfectionism and psychological distress group; 291 White British (53.79%) and 68 Chinese students (62.39%) being clustered into the lower perfectionism and

psychological distress group. We performed two (British/Chinese)-by-two (cluster groups) between-between-group ANOVA analyses with the same bootstrapping method using ethnicity and cluster as independent variables with each of the other five variables as dependent variable. These analyses allowed us to test the ethnic differences of self-oriented, other-oriented and socially-prescribed perfectionism, depression and anxiety states in each cluster. That is, these analyses were run with the variables by which we clustered the groups and whether they would differ in the profiles of clusters that resulted. Fig.1 shows the z-scores distribution of the five variables across both ethnicities in the higher perfectionism and psychological distress and lower perfectionism and psychological distress groups.

Fig.1 Z-scores for five variables in the higher and lower perfectionism and psychological distress groups for Chinese and White British students

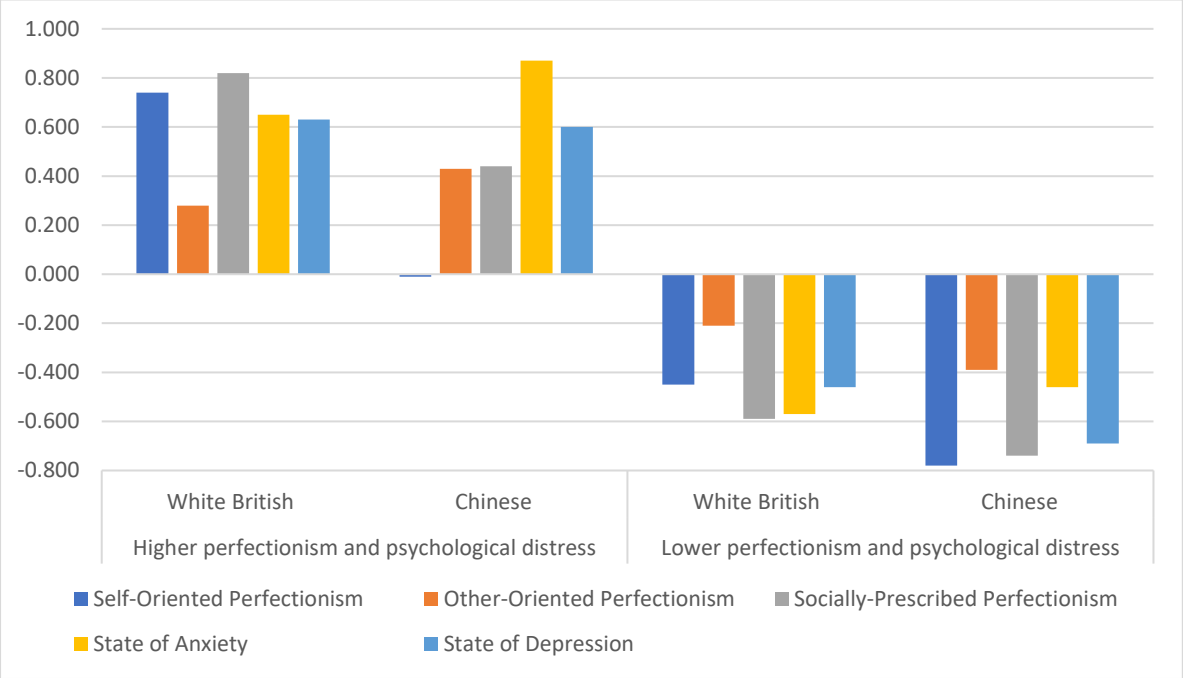


Table 6 shows the ethnic differences in each cluster based on the five variables. For self-oriented perfectionism, there was a statistically significant main effect for the clusters ($F(1,646)=129.81$, $p<.001$, Cohen's $d=.90$) and ethnicity ($F(1,646)=38.94$, $p<.001$, Cohen's $d=.49$) and in the interaction effect between the clusters and ethnicity ($F(1, 646)=5.76$, $p=.02$,

Cohen's d=.19). This showed that White British students were significantly higher on self-oriented perfectionism than Chinese students in the higher perfectionism and psychological distress groups (White British: mean=84.51, SD=12.48; Chinese: mean=72.31, SD=10.62) and lower perfectionism and psychological group (British: mean=65.04, SD=13.74; Chinese: 59.62, SD=13.71).

Since there was a significant interaction between ethnicity and the cluster in self-oriented perfectionism, a post-hoc t-test was performed to examine the ethnic differences in each cluster. The results showed that in the higher perfectionism and psychological distress cluster, White British students scored significantly higher in self-oriented perfectionism (M=84.51, SD=12.48) than the Chinese students (M=73.31, SD=10.62; t(59.69)=6.64, p=<.001, two-tailed). The magnitude of the differences in the means (mean difference= 12.19, 95% CI:2.06 to 8.13) was large (Cohen's d=1.06)**.** In the lower perfectionism and psychological distress group, White British students scored significantly higher in self-oriented perfectionism (M=65.04, SD=13.74) than the Chinese students (M=59.62, SD=13.71; t(100.85)=2.94, p<.001, two-tailed). The magnitude of the differences in the means (mean difference= 5.42, 95% CI:1.76 to 9.09) was small to medium (Cohen's d=.40).

In predicting other-oriented perfectionism, there was only a statistically significant main effect for the clusters (F(1,646)=39.97, p<.001, Cohen's d=.50). Ethnicity (F(1,646)=.01, p=.91, Cohen's d=.00) and the interaction effect between the clusters and ethnicity (F(1,646)=2.60, p=.11, Cohen's d=.13) were not statistically significant. Thus, regardless of ethnicity, the cluster higher on perfectionism and psychological distress was statistically higher on other-oriented perfectionism.

For socially-prescribed perfectionism, there were statistically significant main effects for the clusters (F(1,646)=279.87, p<.001, Cohen's d=1.32) and ethnicity (F(1,646)=11.74,

p=.00, Cohen's d=.27) but not in the interaction between clusters and ethnicity (F(1,646)=2.14, p=.14, Cohen's d=.11). The results suggested that White British students scored significantly higher (mean=60.82, SD=14.96) in socially-prescribed perfectionism than Chinese students (mean=55.57, SD=11.90). The higher perfectionism and psychological distress group also scored significantly higher in socially-prescribed perfectionism (mean=71.13, SD=13.21) than the lower perfectionism and psychological distress group (mean=50.86, SD=9.98).

For the depression state, there was a statistically significant main effect for the clusters (F(1,646)=178.81, p<.001, Cohen's d=1.05) but not in ethnicity (F(1,646)=2.02, p=.16, Cohen's d=.11) and the interaction between clusters and ethnicity (F(1,646)=1.40, p=.24, Cohen's d=.09). Thus, regardless of ethnicity, the cluster higher on perfectionism and psychological distress was statistically higher on depression.

Finally, in predicting the anxiety state, there were statistically significant main effects for the clusters (F(1,646)=221.92, p<.001, Cohen's d=1.17) and ethnicity (F(1,646)=3.82, p=.05 Cohen's d=.46) but not in the interaction between clusters and ethnicity (F(1,646)=.387, p=.53, Cohen's d=.06) The results suggested that Chinese students scored significantly higher (mean=11.63, SD=9.13) in the anxiety state than White British students (mean=11.18, SD=9.19).The higher perfectionism and psychological distress group also scored significantly higher in socially-prescribed perfectionism (mean=17.48, SD=9.30) than the lower perfectionism and psychological distress group (mean=6.21, SD=5.07). The clusters also differed similarly between British and Chinese students with one cluster being higher.

Table 6. Clusters for higher and lower perfectionism and psychological distress groups for Chinese and White British students.

		Higher Perfectionism and Psychological Distress		**Lower Perfectionism and Psychological Distress**	
		White British *n*=250	Chinese *n*=41	White British *n*=291	Chinese *n*=68
SOP	Means	84.51	72.32	65.04	59.62
	SD	12.48	10.62	13.74	13.71
	SE	.80	1.72	.81	1.64
	Z score	.74	-.01	-.45	-.78
OOP	Means	59.55	61.39	53.78	51.68
	SD	13.33	8.36	10.21	9.47
	SE	0.84	1.47	0.60	1.16
	Z score	.28	.43	-.21	-.39
SPP	Means	70.91	66.37	51.29	49.06
	SD	11.55	8.39	10.26	8.48
	SE	.74	1.27	0.62	1.03
	Z score	.82	.44	-.59	-.74
State of depression	Means	20.82	20.59	8.61	6.00
	SD	11.73	10.57	7.15	5.73
	SE	.73	1.63	.40	0.69
	Z score	.63	.60	-.46	-.69
State of anxiety	Means	17.20 (S)	19.22	6.01	7.06
	SD	9.32	9.13	4.98	5.37
	SE	.60	1.43	.30	.65
	Z score	.65	.87	-.57	-.46

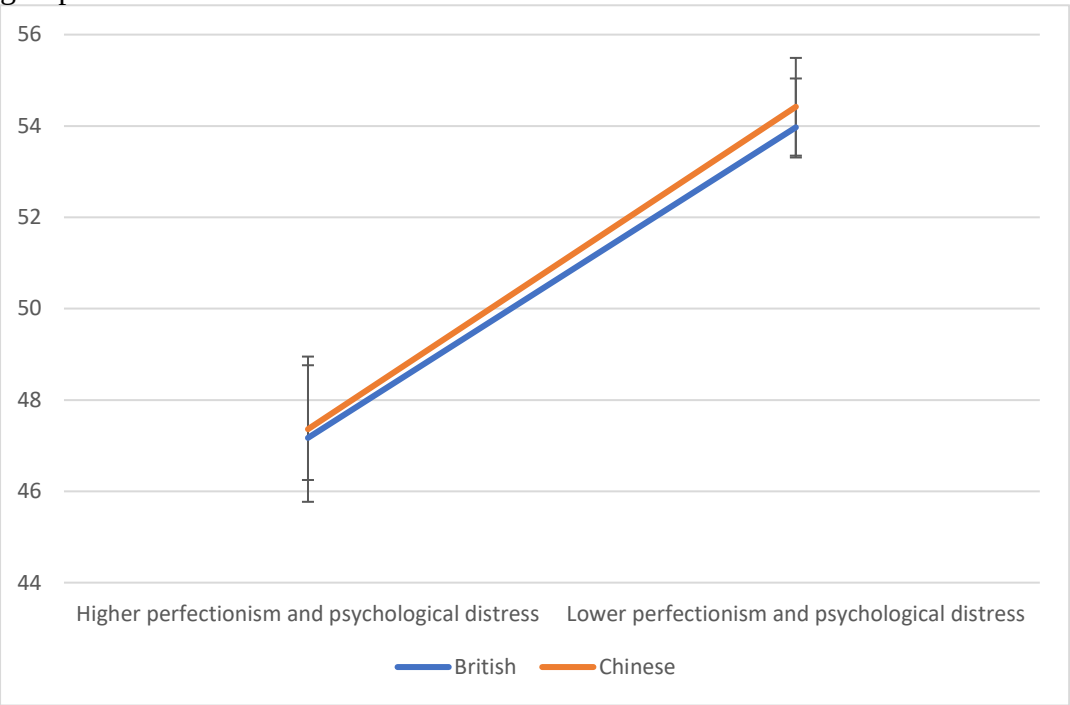
SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; SPP = Socially-Prescribed Perfectionism.

Are Chinese and British students with different profiles of perfectionism and psychological distress likely to seek help?

Finally, to test if there was any ethnic differences in each cluster in terms of help-seeking attitudes, we performed another two (British/Chinese)-by-two (cluster groups) between-between-group ANOVA analyses with help-seeking attitudes being the dependent variable. The results suggested that there was a statistically significant main effect for the clusters ($F(1,646)=26.08$, $p<.001$, Cohen's $d=.40$) but not in ethnicity ($F(1,646)=.06$, $p=.81$, Cohen's $d=.00$) or the interaction effect between the clusters and ethnicity ($F(1,646)=.01$ $p=.92$, Cohen's $d=.00$). Thus, regardless of ethnicity, the cluster higher on perfectionism and psychological distress was statistically lower on help-seeking attitudes. Those who reported a

lower level of perfectionism and psychological distress reported significantly higher attitudes to seeking help (represented by lower values in Figure 2).

Fig.2 Help-seeking attitudes in higher and lower perfectionism and psychological distress groups for Chinese and White British students



Discussion

To our knowledge, this is the first study examining ethnic differences of perfectionism and psychological help-seeking attitudes. We expected that Chinese students would score significantly higher in socially-prescribed perfectionism, and that White British students would report significantly higher in self-oriented perfectionism. However, results from this study reveal that White British students reported higher levels of self-oriented and socially-prescribed perfectionism than Chinese students. We also predicted that White British students to report statistically higher in help-seeking attitudes than Chinese students. However, there was no ethnic difference with respect to help-seeking attitudes, regardless of which cluster group they were in. Those who were clustered into the higher perfectionism and psychological distress group had less favourable attitudes to seeking help; others who

were clustered into the lower perfectionism and psychological distress group had more favourable attitudes to seeking help, and ethnicity did not moderate this effect.

White British and Chinese students differed on some dimensions of perfectionism, which suggests that these dimensions should be examined. White British students reported significantly higher self-oriented perfectionism scores than the Chinese students. This was in keeping with the literature of collectiveness and individualism of different ethnic groups; westerners are more likely to place higher standards on themselves to achieve as self-enhancement is more prevalent in the west (Heine, Takata, & Lehman, 2000; McCreary, Joiner, Schmidt, & Ialongo, 2004). This finding provides evidence for White British students being more likely to place higher standards on themselves to achieve perfection than Chinese students.

On the contrary, research suggests that easterners, such as the Chinese, are more collective, and that they reported higher socially-prescribed perfectionism due to their perception of others placing high standards on them (e.g. Smith, Saklofske, Yan, & Sherry, 2017). However, White British students in this study also scored significantly higher in socially-prescribed perfectionism than Chinese students. This suggests that White British students experienced a greater level of perceived pressure from others to achieve perfection than the Chinese international students. Given that neoliberalism is prevalent in the UK (Curran & Hill, 2017), the result of White British students scoring significantly higher in socially-prescribed perfectionism may be explained by the challenges young people face nowadays. For instance, it is likely that they are pre-occupied with the need to be successful, increasing their levels of competitiveness, anxiety, preoccupation with social comparison and materialism as they adapt to perfecting their lives in relation to others (De Botton, 2004; Marmot, 2004). Their disproportionate need for approval from others can increase their social disconnection and psychological problems (Hewitt, Flett, & Mikail, 2017).

In the higher perfectionism and psychological distress group, White British students also scored significantly higher in self-oriented and socially-prescribed perfectionism than Chinese students. Since self-oriented and socially-prescribed perfectionism are associated with clinical depression, suicidal ideation and early death, (e.g. Enns & Cox, 2005; Fry & Debats, 2009; Hewitt, Flett and Webber, 1994), these results highlighted the need for services to target this student population specifically and promote their access to mental health services.

We expected Chinese students to score significantly higher in socially-prescribed perfectionism than a western sample (i.e. White British students) based on a previous study (Smith et al., 2017). However, the results of the White British students scoring statistically higher in both self-oriented and socially-prescribed perfectionism in this study may challenge existing theories of ethnic variations of individualism and collectiveness. This result may be explained by British students being required to pay full university tuition fees; it is likely that they may place high standards on themselves to achieve (i.e. higher self-oriented perfectionism) and/or perceive their others (e.g. family) having high expectations on themselves to perform well in university and to secure decent employment when they finish their degree (i.e. higher socially-prescribed perfectionism). Indeed, a recent meta-analysis has found that younger generation in the UK, US and Canada are now reporting higher levels of self-oriented, other-oriented and socially prescribed perfectionism (Curran & Hill, 2017). The authors argue that the prevalence of neoliberalism in these countries has increased younger peoples' competitiveness, anxiety levels, preoccupation with social comparison and materialism as they adapt to perfecting their lives in relation to others (De Botton, 2004; Marmot, 2004). Neoliberalism affects how younger people construct their own identity and sense of self, making them believe that their irrational internalized beliefs of being the perfect self are desirable and achievable (Curran & Hill, 2017). Neoliberalism is closely related to

meritocracy, in that those who achieve higher social status (e.g. education and profession) are viewed as more deserving and have better personal abilities (e.g. intelligence; (Hayes, 2013). The combination of neoliberalism and meritocracy imposes a great pressure on young people to compete and strive in securing their personal values in the society (Verhaeghe, 2014). Their disproportionate needs for approval from others can increase their social disconnection and psychological problems (Hewitt, Flett, & Mikail, 2017).

On the contrary, China was once considered as a communist country by the west is now viewed by many scholars that it is on the path to neoliberalism (Zhou, Lin & Zhang, 2018). Also, China had a One-Child policy between 1979 and 2015; being the only child in the family may come with exceeding familial expectations to achieve, resulting in them being more competitive (Frűndt, 2007). In theory, compared to the British students, Chinese students are equally as likely to be exposed to social media, increasing their chances of having higher levels of self-oriented and socially-prescribed perfectionism. Thus, the Chinese students in this study, who were all born in this era, should show comparable levels of self-oriented and socially-prescribed perfectionism compared to the White British students. The explanation for the absence of such observation in the Chinese group remains unknown.

In general, both White British and Chinese students met the DASS-21 cut-off point for mild to moderate levels of depression and anxiety. However, after cluster analysis, White British students in the higher perfectionism and psychological distress group met the DSS-21's cut-off points for severe level of depression and anxiety states. The same levels of depression and anxiety states were observed in Chinese students in the higher perfectionism and psychological distress group, despite them reporting significantly lower scores on self-oriented and socially-prescribed perfectionism than White British students. This appears to suggest that self-oriented and socially-prescribed perfectionism had higher associations with the depression and anxiety states in White British students. Such relationships were not

observed in Chinese students; they presented with a severe level of depression and anxiety states, and they scored significantly lower on self-oriented and socially-prescribed perfectionism than the White British students.

Finally, we found that compared to the lower perfectionism and psychological distress group, those who were clustered into the higher perfectionism and psychological distress group had less favourable attitudes towards help-seeking. There were no effects of ethnicity or help-seeking attitudes. This suggests that both ethnic groups reporting higher levels of perfectionism, as well as depression and anxiety states, had less favourable attitudes to seeking help; both ethnic groups who scored lower on perfectionism and psychological distress had more favourable attitudes to seeking help. UK establishments, such as the Universities, should pay careful consideration to both White British and Chinese students' psychological needs and promote their access to mental health services.

Limitations and future directions

This study employed a cross-sectional design; observations of any causation effects between the variables cannot be made. There were uneven sample sizes between the White British and the Chinese student groups, as well as female and male participants. Participants were required to complete a set of self-report online questionnaires in this study. There was a potential risk of them over or underreporting their levels of perfectionism and psychological difficulties. Those who voluntarily participated in this study could be more likely to be compliant, altruistic and keen to share their personal experiences than those who refused to participate. These factors could potentially pose a risk to the external validity of this study.

Future researchers will benefit from recruiting other ethnic populations (e.g. UK-born Asian and/or Black) and comparing the differences between their levels of perfectionism and help-seeking attitudes to a comparable UK-born White British sample. The results of these

studies will provide further evidence for mental health services to target their services according to the needs of students from diverse ethnic backgrounds. The results of this study indicate that future researchers should consider carrying out qualitative research in order to explore the increase in social-prescribed perfectionism in young White British students. This may involve exploration of the personal (e.g. the self-construct) and external (e.g. their perception of the source of pressure) factors in relation to perfectionism, and how they may play a role in their attitudes in seeking help.

Clinical Implications

The results of this study indicated that local services, especially the University establishments, should pay careful attention to the psychological needs of the UK-born White British home students (i.e. self-oriented and socially-prescribed perfectionism). The relational nature of distress (i.e. how they see themselves and their views of how others see them) can have a significant impact on their self-construct, increasing their risk of developing mental health difficulties. This population may require longer-term and intense psychological interventions, as opposed to short-term and symptoms-focused treatments (Blatt, Quinlan, Pilkonis, & Shea, 1995). The various dimensions of perfectionism should be addressed explicitly in psychological interventions to prevent relapse, increase therapeutic alliance and maximize treatment benefits (Blatt & Zuroff, 2002). These students may warrant specific relational-based psychological interventions, such as Cognitive Analytical Therapy or Psychodynamic Psychotherapy. Clinicians should explore and challenge these students' potential catastrophic and strongly held beliefs about the need for themselves, and how they interpret others having higher expectations of them, to achieve perfection.

In contrast, China-born Chinese international students' profiles which had high depression and anxiety states were less clearly marked by high levels of self-oriented and socially-prescribed perfectionism. In clinical practice, this may indicate that clinicians should pay less attention to these dimensions of perfectionism. Interventions, such as Cognitive-Behavioral Therapy involves techniques, such as cognitive restructuring, behavior activation and exposure experiments may be more appropriate for this student group (Neenan, 2018, Wells, 1997). This suggestion is also in keeping with the current UK NICE guidelines for psychological interventions for depression and anxiety in adults (NICE, 2009, 2013).

Services should provide specific psycho-education to the UK-born White British home students about the association between perfectionism and psychological difficulties. For China-born Chinese students, psycho-education should emphasis depression and anxiety identification and management. Since both student groups reported similar (i.e. less favourable) help-seeking attitudes in the higher perfectionism and psychological distress group, services should be proactive in promoting their access to mental health services. This may involve delivering psycho-education sessions separately in both languages to ensure inclusivity of both populations.

Conclusion

This study has identified that UK-born White British home students reported significantly higher levels of self-oriented and socially-prescribed perfectionism and depression than China-born Chinese students. Using cluster analysis, similar observations were found; UK-born White British home students in the higher perfectionism and psychological distress group reported significantly higher self-oriented and socially-prescribed perfectionism than China-born Chinese international students. However, both

ethnic groups reported similar levels of (moderate) depression and (severe) anxiety states. These findings provide evidence for services to approach these two ethnic groups differently (i.e. psychological intervention and psycho-education). Future research should build on this study and further examine the ethnic differences in perfectionism, and how they differ with respect to psychological distress and help-seeking attitudes.

References:

Andrews, G., Issakidis, C., & Carter, G. (2001). Shortfall in mental health service utilisation. *The British Journal of Psychiatry*, 179(5), 417-425. http://dx.doi.org/10.1192/bjp.179.5.417

Blankstein, K. R., Flett, G. L., Hewitt, P. L., & Eng, A. (1993). Dimensions of perfectionism and irrational fears: An examination with the fear survey schedule. *Personality and Individual Differences*, 15(3), 323-328. http://dx.doi.org/ 10.1016/0191-8869(93)90223-P

Blatt, S. J., Quinlan, D. M., Pilkonis, P. A., & Shea, M. T. (1995). Impact of perfectionism and need for approval on the brief treatment of depression: the National Institute of Mental Health Treatment of Depression Collaborative Research Program revisited. *Journal of Consulting and Clinical Psychology*, *63*(1), 125-132. http://dx.doi.org/10.1037/0022-006X.63.1.125

Blatt, S. J., & Zuroff, D. C. (2002). Perfectionism in the therapeutic process. In G. L. Flett & P. L. Hewitt (Eds.). *Perfectionism: Theory, research, and treatment*, (pp.393-406). *Washington, DC: American Psychological Association*. http://dx.doi.org/ 10.1037/10458-016

Biddle. L., Donovan. J., Sharp. D. & Gunnell D. (2007). Explaining non-help-seeking amongst young adults with mental distress: a dynamic interpretive model of illness behaviour. *Sociology of Health & Illness*, 29(7): 983–1002. http://dx.doi.org/ 10.1111/j.1467-9566.2007.01030.x

Cash, T. E., Kehr, J., & Salzbach, R. R. (1978). Help-seeking attitudes and perceptions of counselor behavior. *Journal of Counseling Psychology*, 4, 264-269.

Castro, J. R., & Rice, K. G. (2003). Perfectionism and ethnicity: Implications for depressive symptoms and self-reported academic achievement. *Cultural Diversity and Ethnic Minority Psychology*, 9(1), 64. http://dx.doi.org/10.1037/1099-9809.9.1.64

Campbell, D. & Doward, J. (2016). Care for children with mental health problems is woeful, say GPs. *The Guardian*. Retrieved from http://www.theguardian.com/society/2016/may/14/children-mental-health-care-woeful-gps?

Chang, E. C. (1998). Cultural differences, perfectionism, and suicidal risk in a college population: Does social problem solving still matter? *Cognitive Therapy and Research*, 22(3), 237-254. http://dx.doi.org/10.1023/A:1018792709351

Cheng, S. K. (2001). Life stress, problem solving, perfectionism, and depressive symptoms in Chinese. *Cognitive Therapy and Research*, 25(3), 303-310. http://dx.doi.org/10.1023/A:1010788513083

Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment*, 14(3), 365. http://dx.doi.org/10.1037/1040-3590.14.3.365

Curran, T., & Hill, A. P. (2017). Perfectionism Is Increasing Over Time: A Meta-Analysis of Birth Cohort Differences From 1989 to 2016. *Psychological Bulletin*. http://dx.doi.org/10.1037/bul0000138

De Botton, A. (2004). *Status anxiety*. New York, NY: Pantheon

DiBartolo, P. M., & Rendón, M. J. (2012). A critical examination of the construct of perfectionism and its relationship to mental health in Asian and African Americans using a cross-cultural framework. *Clinical Psychology Review*, 32(3), 139-152. http://dx.doi.org/10.1016/j.cpr.2011.09.007

Dolnicar, S. (2002). A review of unquestioned standards in using cluster analysis for data-driven market segmentation. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.475.2288&rep=rep1&type=pdf

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review*, 31(2), 203-212. http://dx.doi.org/10.1016/j.cpr.2010.04.009

Enns, M. W., Cox, B. J., & Clara, I. P. (2005). Perfectionism and neuroticism: A longitudinal study of specific vulnerability and diathesis-stress models. *Cognitive Therapy and Research*, 29(4), 463-478. http://dx.doi.org/10.1007/s10608-005-2843-04

Feinstein, B. A., Hershenberg, R., Bhatia, V., Latack, J. A., Meuwly, N., & Davila, J. (2013). Negative social comparison on Facebook and depressive symptoms: Rumination as a mechanism. *Psychology of Popular Media Culture*, 2(3), 161. http://dx.doi.org/10.1037/a0033111

Formann, A. K. (1984). *Die latent-class-analyse: Einführung in Theorie und Anwendung*. Weinheim: Beltz.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive therapy and research*, 14(5), 449-468. http://dx.doi.org/10.1007/BF01172967

Frost, R. O., Trepanier, K. L., Brown, E. J., Heimberg, R. G., Juster, H. R., Makris, G. S., & Leung, A. W. (1997). Self-monitoring of mistakes among subjects high and low in perfectionistic concern over mistakes. *Cognitive Therapy and Research*, 21(2), 209-222. http://dx.doi.org/10.1023/A:1021884713550

Fründt, C. (2007). Where individualism grows and hierarchies crumble- A case study on the One-Child Policy's influence on the workplace. (*Master's thesis*). Retrieved from http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=1320670&fileOId=1320671

Fry, P. S., & Debats, D. L. (2009). Perfectionism and the five-factor personality traits as predictors of mortality in older adults. *Journal of Health Psychology*, 14(4), 513-524. http://dx.doi.org/10.1177/1359105309103571

Garson, G. (2014). Cluster analysis: 2014 edition (Statistical Associates Blue Book Series 24). *Asheboro, NC: Statistical Associates Publishing*.

Gulliver, A., Griffiths, K. M., Christensen, H., & Brewer, J. L. (2012). A systematic review of help-seeking interventions for depression, anxiety and general psychological distress. *BMC Psychiatry*, 12(1), 81. http://dx.doi.org/10.1186/1471-244X-12-81

Hamamura, T., & Laird, P. G. (2014). The effect of perfectionism and acculturative stress on levels of depression experienced by East Asian international students. *Journal of Multicultural Counseling and Development*, 42(4), 205-217. http://dx.doi.org/10.1002/j.2161-1912.2014.00055.x

Heine, S. J., Takata, T., & Lehman, D. R. (2000). Beyond self-presentation: Evidence for self-criticism among Japanese. *Personality and Social Psychology Bulletin*, 26(1), 71-78. http://dx.doi.org/10.1177/0146167200261007

Hewitt, P. L., & Flett, G. L. (2004). *Multidimensional perfectionism scale (MPS): Technical manual*. MHS. http://dx.doi.org/10.1037/1040-3590.3.3.464

Hewitt, P. L., Flett, G. L., & Weber, C. (1994). Dimensions of perfectionism and suicide ideation. *Cognitive Therapy and Research*, 18(5), 439-460. http://dx.doi.org/10.1007/BF02357753

Hewitt, P. L., & Flett, G. L. (1990). Perfectionism and depression: A multidimensional analysis. *Journal of Social Behavior and Personality*, 5(5), 423. http://dx.doi.org/10.1037/1040-3590.3.3.464

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, 60(3), 456. http://dx.doi.org/10.1037/0022-3514.60.3.456

Hewitt, P. L., Flett, G. L., & Mikail, S. F. (2017). *Perfectionism: a relational approach to conceptualization, assessment, and treatment*: Guilford Publications.

Jubert, T. J. (2009). Who Seeks Help? A Global Perspective on Attitudes Toward Seeking Professional Psychological Help: Vietnam, Hong Kong, and the United States. *Journal of Undergraduate Research*, 12, 1-6. Retrieved from https://www.uwlax.edu/urc/jur-online/PDF/2009/jubert-thomasPHI.pdf

Kane, E (2014) Prevalence, patterns and possibilities: The experience of people from black and ethnic minorities with mental health problems in the criminal justice system, *NACRO*. Retrieved from www.nacro.org.uk/data/files/prevalence-patterns-and-possibilities-1051.pdf

Kawamura, K. Y., & Frost, R. O. (2004). Self-concealment as a mediator in the relationship between perfectionism and psychological distress. *Cognitive Therapy and Research*, 28(2), 183-191. http://dx.doi.org/10.1023/B:COTR.0000021539.48926.c1

Kim, H.-Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics*, 38(1), 52-54. http://dx.doi.org/10.5395/rde.2013.38.1.52

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. http://dx.doi.org/10.1037/0033-295X.98.2.224

Marmot, M. (2004). Status syndrome. *Significance*, 1(4), 150-154. http://dx.doi.org/10.1111/j.1740-9713.2004.00058.x

McCreary, B. T., Joiner, T. E., Schmidt, N. B., & Ialongo, N. S. (2004). The Structure and Correlates of Perfectionism in African American Children. *Journal of Clinical Child and Adolescent Psychology*, 33(2), 313-324. http://dx.doi.org/10.1207/s15374424jccp3302_13

National Institute for Clinical Excellence (NICE). (2011). Common mental health problems: identification and pathways to care. *NICE guidelines [CG123]*. Retrieve from https://www.nice.org.uk/guidance/cg123

National Institute for Clinical Excellence (NICE). (2009). Depression in adults: recognition and management. *NICE guidelines [CG90]*. Retrieve from https://www.nice.org.uk/guidance/CG90?UNLID=

Neenan, M. (2018). *Cognitive Behavioural Coaching: Distinctive Features*. Routledge.

Onwuegbuzie, A. J., & Daley, C. E. (1999). Perfectionism and statistics anxiety. *Personality and Individual Differences*, 26(6), 1089-1102. http://dx.doi.org/10.1016/S0191-8869(98)00214-1

Raspopovic, M. M. (2015). The connection between perfectionism and anxiety in university students. *Sanamed*, 10(3), 199-204. http://dx.doi.org/10.24125/sanamed.v10i3.54

Rehman, H., & Owen, D. (2013). Mental Health Survey of ethnic minorities. *Ethnos Research and Consultancy*. http://dx.doi.org/10.1186/1471-244X-8-1

Rutter, T. (2015). How to help a perfectionist student. *The Guardian*. Retrieved from: http://www.theguardian.com/education/2015/may/19/how-to-help-a-perfectionist-student

Saboonchi, F., & Lundh, L.-G. (1997). Perfectionism, self-consciousness and anxiety. *Personality and Individual Differences*, 22(6), 921-928. http://dx.doi.org/10.1016/S0191-8869(96)00274-7

Slaney, R. B., Rice, K. G., Mobley, M., Trippi, J., & Ashby, J. S. (2001). The revised almost perfect scale. *Measurement and Evaluation in Counseling and Development*, 34(3), 130.

Smaje, C., & Le Grand, J. (1997). Ethnicity, equity and the use of health services in the British NHS. *Social Science & Medicine*, 45(3), 485-496. http://dx.doi.org/10.1016/S0277-9536(96)00380-2

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2016). Cultural Similarities in Perfectionism: Perfectionistic Strivings and Concerns Generalize Across Chinese and Canadian Groups. *Measurement and Evaluation in Counseling and Development*, 49(1), 63-76. http://dx.doi.org/10.1177/0748175615596785

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2017). Does Perfectionism Predict Depression, Anxiety, Stress, and Life Satisfaction After Controlling for Neuroticism? *Journal of Individual Differences*. http://dx.doi.org/10.1027/1614-0001/a000223

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2017). Does perfectionism predict depression, anxiety, stress, and life satisfaction after controlling for neuroticism? A study of Canadian and Chinese undergraduates. *Journal of Individual Differences*, 38(2), 63-70. http://dx.doi.org/10.1027/1614-0001/a000223

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality*, 30(2), 201-212. http://dx.doi.org/10.1002/per.2053

Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, 45(4), 249-257. http://dx.doi.org/10.1080/00050067.2010.482109

Stoeber, J., Kobori, O., & Tanno, Y. (2013). Perfectionism and self-conscious emotions in British and Japanese students: Predicting pride and embarrassment after success and failure. *European Journal of Personality*, 27(1), 59-70. http://dx.doi.org/10.1027/1614-0001/a000130

Tran, L. (2009). Evaluation of a Chinese mental health advocacy and support project. *UK: Chinese National Healthy Living Centre*. Retrieved from https://www.kingsfund.org.uk/sites/default/files/field/field_document/evaluation-chinese-mental-health-project-partner-health-nov09.pdf, assessed on 11/04/2018

Turning Point. (2015). Mental health and BME groups. Retrieved from http://www.turning-point.co.uk/media/1096788/mh_bme.pdf

Vidourek, R. A., King, K. A., Nabors, L. A., & Merianos, A. L. (2014). Students' benefits and barriers to mental health help-seeking. *Health Psychology and Behavioral Medicine: an Open Access Journal*, 2(1), 1009-1022. http://dx.doi.org/10.1080/21642850.2014.963586

Wells, A. (1997). *Cognitive therapy of anxiety disorders: A practice manual and conceptual guide*. John Wiley & Sons.

Wheaton, M. G., Sternberg, L., McFarlane, K., & Sarda, A. (2016). Self-concealment in obsessive-compulsive disorder: Associations with symptom dimensions, help seeking attitudes, and treatment expectancy. *Journal of Obsessive-Compulsive and Related Disorders*, 11, 43-48. http://dx.doi.org/10.1016/j.jocrd.2016.08.002

Yoon, J., & Lau, A. S. (2008). Maladaptive perfectionism and depressive symptoms among Asian American college students: Contributions of interdependence and parental relations. *Cultural Diversity and Ethnic Minority Psychology*, 14(2), 92-101. http://dx.doi.org/10.1037/1099-9809.14.2.92

Yu, H. (2011). *Investigation into the Mental Health Support needs of International Students with particular reference to Chinese and Malaysian students*. Retrieved from https://www.nottingham.ac.uk/studentservices/documents/investigation-into-the-mental-health-support--needs-of-international-students-with-particular-reference-to-chinese-and-malaysian-students.pdf

Zeifman, R. J., Atkey, S. K., Young, R. E., Flett, G. L., Hewitt, P. L., & Goldberg, J. O. (2015). When ideals get in the way of self-care: Perfectionism and self-stigma for seeking psychological help among high school students. *Canadian Journal of School Psychology*, 30(4), 273-287. http://dx.doi.org/10.1177/0033294117713495

Zhou, Y., Lin, G., & Zhang, J. (2018). Urban China through the lens of neoliberalism: Is a conceptual twist enough. Urban Studies, pp.111. 0(00). http://dx.doi.org/10.1177/0042098018775367

Appendix A- emails to authors for further papers

Dear xxx,

We are currently doing a systematic review concerning with the relationship between depression and perfectionism in different ethnic groups. During our literature search we came across your paper:

xxxx (year xxx). xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx. *xxxxxxxxxxxxxxxx, xx*(x), xx-xx. doi:xxxxxxxxxxxxxxxxxxxx

We are planning to include this paper in our review. I wonder if you have undertaken any further published or unpublished work, which meets the criteria below:

1) Using quantitative measures of depression and perfectionism.
2) The association between perfectionism and depression data is analysed and then compared across two or more ethnic groups.

If so, can you please send us any articles or reports relating to this work for consideration for inclusion in our review. Thank you so much for reading this email and I look forward to hearing from you.

Best Regards,

Ho Yin Chan
Trainee Clinical Psychologist

Doctorate in Clinical Psychology
University of Liverpool
Whelan Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB

Appendix B—emails to authors for further information for stats

Dear xxxx,

I hope you are well. I am currently doing a systematic review on depression and perfectionism between different ethnic groups. I came across your paper:

xxxx (year xxx). xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx. *xxxxxxxxxxxxxxxx, xx*(x), xx-xx. doi:xxxxxxxxxxxxxxxxxxxx

I could not find any statistical analysis on the direct relationship between perfectionism and depression (i.e. correlation between those two variables) across the ethnic groups in your paper. I wonder if you have this information as it may help me to include your paper in my review? Thank you so much and I look forward to hearing from you.

Best Regards,

Ho-Yin Chan
Trainee Clinical Psychologist

Doctorate in Clinical Psychology
University of Liverpool
Whelan Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB

Appendix C— Agency for Health Research and Quality risk of assessment checklist

General instructions: Grade each criterion as “Yes,” “No,” “Partially,” or “Unsure.” Factors to consider when making an assessment are listed under each criterion. Where appropriate (particularly when assigning a “No,” “Partially,” or “Unsure” score), please provide a brief rationale for your decision (in parentheses) in the evidence table. Criteria marked italics are considered the most essential quality indicators for our purposes.

1. Unbiased selection of the cohort? Factors that help reduce selection bias:

a. Inclusion/exclusion criteria

1. Clearly described

2. Assessed using valid and reliable measures

b. Recruitment strategy

1. Clearly described

2. Relatively free from bias--sample is representative of the population of interest: How representative of the general population is the study sample

2. Sample size calculated (for controlled studies and where studies test for predictors/correlates of social anxiety/attachment style)? Factors to consider:

a. Did the authors report conducting a power analysis or describe some other basis for determining the adequacy of study group sizes for the primary outcome(s) of interest to us?

b. Did the eventual sample size deviate by < 10% of the sample size suggested by the power calculation?

3. Adequate description of the cohort?

Consider whether the cohort is well-characterised in terms of baseline demographics?

a. Consider key demographic information such as age, gender, education and ethnicity.

4. Validated assessment of perfectionism? Factors to consider:

a. Were these measures implemented consistently across all study participants

b. Was perfectionism assessed using valid and reliable measures? Note that measures that consist of subscales taken from larger measures, or scales intended for use in conjunction with other scales may lack content validity and reliability.

5. Validated method for assessing depression? Factors to consider:

a. Were these measures implemented consistently across all study participants?

b. Was depression assessed using valid and reliable measures? Note that measures that consist of subscales taken from larger measures, or scales intended for use in conjunction with other scales may lack content validity and reliability.

6. Outcome assessment blind to exposure?

a. Were the study investigators who assessed outcomes blind to the perfectionism and depressive status of participants? (Note that even in single-arm studies so degree of blinding is possible, for example using external interviewers with no knowledge of participants clinical status).

7. Adequate follow-up period (longitudinal studies only)? Factors to consider:

a. Minimum adequate follow-up period is 2 years for AD and 1 year for cognitive decline.

- Follow-up period should be the same for all groups in cohort studies, length of follow-up should be the same across all groups.

8. Missing data Factors to consider:

a. Did missing data from any group exceed 20%?

b. In longitudinal studies consider attrition over time as a form of missing data. Note that the criteria of < 20% missing data may be unrealistic over longer follow-up periods.

c. If missing data is present and substantial, were steps taken to minimize bias (e.g., sensitivity analysis or imputation).

9. Analysis controls for confounding (where studies test for predictors/correlates of perfectionism or depression)? Factors to consider for controlled studies:

a. Did the analysis control for any baseline differences between groups?

b. Does the study identify and control for important confounding variables and effect modifiers? Confounding variables are risk factors that are correlated with perfectionism and depression and may therefore bias the estimation of the effect of perfectionism on depression if unmeasured. These may include demographic and clinical variables (e.g., co-morbidity).

10. Analytic methods appropriate (Controlled studies and where studies test for predictors/correlates of attachment style and social anxiety)? Factors to consider:

a. Was the kind of analysis done appropriate for the kind of outcome data>

Categorical (mixed model for categorical outcomes)

Continuous (ANCOVA, mixed model)

b. Was the number of variables used in the analysis appropriate for the sample size? (The statistical techniques used must be appropriate to the data and take into account issues such as controlling for small sample size, clustering, rare outcomes, multiple comparison, and number of covariates for a given sample size)

Appendix D—Demographic questionnaire

It is important that you answer every item

DEMONGRAPHIC INFORMATION

Please answer the following questions

What is your Gender: Male/ Female

How old are you?

- 18 to 25
- -26 to 30
- -30 to 35
- -36 or above

How would you describe your ethnicity?

White
- British
- Irish
- Any other White background. Please specify_____

Mixed
- White and Black Caribbean
- White and Black African
- White and Asian
- Any other mixed background. Please specify_____

Asian or Asian British
- Indian
- Pakistani
- Bangladeshi
- Any other Asian background. Please specify_____

Black or Black British
- Caribbean
- African
- Any other Black background. Please specify_____

Other Ethnic Groups
- Chinese
- Any other ethnic group, Please specify_____

Which country were you born in? *choose from drop list*

What is the level of your course?

- Undergraduate

- Masters

- PhD

Which year are you studying in?

1st / 2nd / 3rd / 4th / 5th / 6th or above

What is your student status: Home student/ International student

Are you currently studying your first degree? Yes / No

What is your department/ school? *choose from drop list*

How long have you lived in the UK?

- Since birth

- Less than a year

- Between 1 and 3 years

- Between 4 to 10 years

- 10 years or above

Appendix E---Participants information sheet

School of Psychology, Doctorate in Clinical Psychology
Participant Information Sheet

TRAINEE: Ho Yin Chan
PROJECT TITLE: The relationships between attitudes towards seeking professional psychological help and perfectionism, depression and anxiety in different ethnic groups
SUPERVISORS: Professor Christopher Dowrick (Primary Research Methods Supervisor)
Dr Luna Centifanti (Second Clinical Supervisor)

Dear Potential Participant,

You are being invited to participate in an online research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to contact us if you would like more information or if there is anything that you do not understand. Please also do not hesitate to discuss this with your friends, relatives and GP if you wish. We would like to stress that you do not have to accept this invitation and should only agree to take part if you want to.

1. What is the purpose of the study?
This study aims to identify groups of university students who may experience states of anxiety and/or depression, and/or perfectionism, and how these groups may differ in their attitudes towards seeking professional psychological help. It also aims to explore how students' ethnicity backgrounds may contribute to a higher or lower attitude towards seeking professional psychological help when distress is experienced.

2. Why have I been chosen to take part?
All students studying at the University of Liverpool are invited to participate in this study, regardless of their ethnicity or student status (home student or international student). We aim to recruit at least 128 participants for this study.

3. Do I have to take part?
Your participation is completely voluntary. If you agree to take part, you are free to withdraw (i.e. leave the study) at any time without giving any explanation and without incurring any disadvantage. Any uncompleted measure will be removed.

4. What will happen if I take part?

You are welcome to keep a copy of the participant information sheet (i.e. printing this page) before clicking on the appropriate link that connects you to the consent form. You will then be asked to complete the consent form, a demographic questionnaire, and another 3 questionnaires. The whole study should take between 25 and 30 minutes to complete. Please note that since your participation will be totally anonymised, it will be impossible to withdraw your completed questionnaires responses from our database once you have submitted them. On completion of the study, you will be asked for your university email address should you wish to enter a prize draw for one of five Amazon voucher worth £30 each.

5. Expenses and/ or payments

Participants will not receive any expense or payment for participating in this study. However, you will be offered the opportunity to enter a prize draw for one of five Amazon voucher worth £30 each.

6. Are there any risks in taking part?

There are no risks involved in taking part in this study. However, should you become distressed due to taking part in this study, you should inform us, your GP or contact the following support services found on the University's Student Support Service website: (https://www.liverpool.ac.uk/studentsupport/):

- University Counselling Service
  Telephone: 0151-794 3304

- Mental Health Advisory Service
  Telephone: 0151- 7942320

7. Are there any benefits in taking part?

There will be no direct benefit to you taking part in this study. However, the outcome of this study may help services develop better mental health support for future service users.

8. What if I am unhappy or if there is a problem?

If you are unhappy, or if there is a problem, please do not hesitate to contact Professor Dowrick (Telephone number: 0151-7945599) and we will try to help. If the issue is still unresolved and you would like to make a complaint as you feel you cannot come to us with then you should contact the Research Governance Officer on 0151-7948290 (ethics@liv.ac.uk). When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researcher(s) involved, and the details of the complaint you wish to make.

9. Will my participation be kept confidential?

Absolutely. All responses will be kept confidential on a secure University's server with anti-virus software protection. The results of the questionnaires will be downloaded into a database, which is password protected and will only be assessed by the researcher and his supervisors. The data will not be stored on any personal and University computers.

10. What will happen to the result of the study?

This study will be submitted in partial fulfilment of the degree of the Doctorate in Clinical Psychology by June, 2018. A copy of this thesis will be available at the Division of Clinical Psychology library. The results of this study may be published in an appropriate scientific journal. If you would like to be sent a copy of the results, you are required to send us your email address. You will not be given feedback on your own answers to the questionnaires. Your information will be kept in a secured and password protected computer file and destroyed after letters are posted. Your personal details or information will not be published.

11. What will happen if I want to stop taking part?

You can stop taking part in this study at any time by closing the web browser. Since all responses are fully anonymised in this study, you will not be able to access your partially submitted data. Your data will then be removed and not accounted for in the analysis. Also, you will not be able to enter the prize draw.

12. Who can I contact for further questions?

Should you require further information, please do not hesitate to contact me at email h.y.chan@liv.ac.uk or contact my research supervisors:

Professor Dowrick, Professor of Primary Medical Care, B121 Waterhouse Buildings, University of Liverpool, Liverpool, L69 3GL. Tel 0151-794 5599

Dr Luna Centifanti, Senior Lecturer and Research Tutor for the Doctorate in Clinical Psychology, The University of Liverpool, The Whelan Building, Brownlow Hill, Liverpool, L69 3GB
Tel: 0151-794 5530

Appendix F—Participant consent form

UNIVERSITY OF LIVERPOOL

INFORMED CONSENT FORM

PARTICIPANT CONSENT FORM

Title of Research Project: The relationships between attitudes towards seeking professional psychological help and perfectionism, and states of depression and anxiety in different ethnic groups

Researcher(s): Professor Christopher Dowick, Dr Luna Centifanti, Ho-Yin Chan

1. I confirm that I have read and have understood the information sheet dated on the 2nd December 2016 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.
3. I understand that confidentiality and anonymity will be maintained, and it will not be possible to identify me in any publications.

4. I agree to take part in the above study.

Next **Cancel**

I agree with all the above points and consent to participate in this study

---Please select--- (drop down with “Yes” and “No”)

Principal Investigator:

Professor Christopher Dowrick Institute of Psychology Health and Society, B121 Waterhouse Buildings
University of Liverpool,
Liverpool L69 3GL
0151-7945599
email: cfd@liverpool.ac.uk

Student Investigator
Ho-Yin Chan
Trainee Clinical Psychologist
Doctorate in Clinical Psychology
Whelan Building
University of Liverpool
Liverpool L69 3GB
0151-7945530
email: h.y.chan@liverpool.ac.uk

Appendix G—Ethics Committee approval letter

UNIVERSITY OF LIVERPOOL

Health and Life Sciences Committee on Research Ethics (Psychology, Health and Society)

21 February 2017

Dear Prof Dowrick,

I am pleased to inform you that your application for research ethics approval has been approved. Details and conditions of the approval can be found below:

Reference:	1356
Project Title:	The relationships between attitudes towards seeking professional psychological help and perfectionism, and states of depression and anxiety in different ethnic groups
Principal Investigator/Supervisor:	Prof Chris Dowrick
Co-Investigator(s):	Mr Ho-Yin Chan, Dr Luna Centifanti
Lead Student Investigator:	-
Department:	Psychological Sciences
Reviewers:	Prof Graham Wagstaff, Dr Sara Waring
Approval Date:	21/02/2017
Approval Expiry Date:	Five years from the approval date listed above

The application was **APPROVED** subject to the following conditions:

Conditions

- All serious adverse events must be reported via the Research Integrity and Ethics Team (ethics@liverpool.ac.uk) within 24 hours of their occurrence.
- If you wish to extend the duration of the study beyond the research ethics approval expiry date listed above, a new application should be submitted.
- If you wish to make an amendment to the research, please create and submit an amendment form using the research ethics system.
- If the named Principal Investigator or Supervisor leaves the employment of the University during the course of this approval, the approval will lapse. Therefore it will be necessary to create and submit an amendment form using the research ethics system.
- It is the responsibility of the Principal Investigator/Supervisor to inform all the investigators of the terms of the approval.

Kind regards,

Health and Life Sciences Committee on Research Ethics (Psychology, Health and Society)

iphsrec@liverpool.ac.uk

Page 1 of 2

Appendix H—D.Clin Research Committee approval letter

UNIVERSITY OF LIVERPOOL

D.Clin.Psychology Programme
Division of Clinical Psychology
Whelan Building, Quadrangle
Brownlow Hill
LIVERPOOL
L69 3GB

Tel: 0151 794 5530/5534/5877
Fax: 0151 794 5537
www.liv.ac.uk/dclinpsychol

31/01/17

Ho-Yin Chan
Clinical Psychology Trainee
Doctorate of Clinical Psychology Doctorate Programme
University of Liverpool
L69 3GB

RE: The relationships between attitudes towards seeking professional psychological help and perfectionism, and states of depression and anxiety in different ethnic groups
Trainee: Ho-Yin Chan
Supervisors: Chris Dowrick, Luna Centifanti

Dear Ho-Yin,

Thank you for your response to the reviewers' comments of your research proposal submitted to the D.Clin.Psychol. Research Review Committee (letter dated 10/01/17).

I can now confirm that your amended proposal (version 3, dated 10/01/17) and revised budget (no version number, dated 05/08/16) meet the requirements of the committee and have been approved by the Committee Chair.

Please take this Chairs Action decision as ***final*** approval from the committee.

You may now progress to the next stages of your research.

I wish you well with your research project.

Dr Catrin Eames
Vice-Chair D.Clin.Psychol. Research Review Committee.

Appendix H---Emails to university's departmental heads and administrative staff

Dear Sir/ Madame,

I would like to take this opportunity to thank those of you who have circulated my research recruitment email below to your departmental students. I am aware that some of you have been very busy and may not have had a chance to read my previous email. I will be so grateful if you can forward my email below to your students, if this ok. For those who have already circulated my previous recruitment email to your students, is it ok if you send them the email below again? Recruitment in research can be a very challenging process and your support in this will be greatly appreciated. Thank you so much for your help again.

Dear student,

I'm a second-year Trainee Clinical Psychologist, and I am running an online research project. My study aims to examine the relationships between perfectionism, depression, anxiety and attitudes towards seeking psychological help in a student population.

Students from diverse ethnic backgrounds, regardless of their student status (home student or internationally student) are welcome to participate in this study! This study aims to examine how attitudes of help-seeking can differ among different ethnic groups.

We hope that the results of this study will promote students' access to mental health services and support when required.

This study has been approved by both the research and ethics committees of the Univeristy of Liverpool. **Those participants who completed the study can enter a prize draw for one of five Amazon voucher worth £30 each.**

This is the link to my study: https://livpsych.az1.qualtrics.com/jfe/form/SV_eCzp1bUumesAGLr

Thank you so much for your participation.

Best Regards,

Ho Yin Chan
Trainee Clinical Psychologist

Doctorate in Clinical Psychology
University of Liverpool
Whelan Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB

Appendix I—list of university's societies

-Afro-Caribbean Society

-Arab Society

-Business Management Society

-Catholic Society

-Christian Union

-Dental Students

-East African

-Egyptian Society

-Emirati Society

-General Practice Society

-German Society

-Hellenic & Cypriot Society

-Hong Kong Society

-Indonesian Society

-Japan Society

-Jewish Society

-Liverpool Chinese Student Scholars Association

- Liverpool Malaysian

-Liverpool Sikh Society

-Liverpool Tamil Society

-Liverpool Thai Society

-Management School Society

-Mental Health Society

-National Hindu Society

-Nursing Society

-Omani Student Society

-Pharmacology Society

-Physician Society

- Polish Society

-Roscoc (Romanian) Society

-Saudi Society

-Somali Society

-South Asian Society

-XJTLU Chinese Society

Appendix J—emails to presidents of university's societies

Hello xxx,

I hope you are well. I am a trainee clinical psychologist and am I currently running an online research project about students' mental health. I met you last Friday at your society stall in the Freshers' week, asking if you could help me to circulate my recruitment email to your members. You kindly agreed to do this and I would be so grateful if you can forward the email below to all your members. Recruitment in research can be difficult so I would like to tell you how much I appreciate your help in this. Thank you so much!

Best Regards,

Ho Yin Chan
Trainee Clinical Psychologist

Doctorate in Clinical Psychology
University of Liverpool
Whelan Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB

Dear Students,

I'm a final year Trainee Clinical Psychologist, and I am running an online research project. My study aims to examine the relationships between perfectionism, states of depression and anxiety, and attitudes towards seeking psychological help in the student population. This is a cross-cultural study, so I need students from **all ethnic backgrounds** to participate.

We hope that the results of this study will help us promote better students' access to mental health services and support in the future.

This study has been approved by both the research and ethics committees of the University of Liverpool. Those participants who completed the study can enter a prize draw for **one of five Amazon voucher worth £30 each**. To enter the prize draw, everyone is required to enter their university email on the completion of the online study.

This is the link to my study:

https://livpsych.az1.qualtrics.com/jfe/form/SV_eCzp1bUumesAGLr

Or
http://goo.gl/7ohXZ9

Thank you so much for your help, and I look forward to hearing from you.

Best Regards,

Ho Yin Chan
Trainee Clinical Psychologist
Doctorate in Clinical Psychology
University of Liverpool
Whelan Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB

Appendix K---DASS-21

REMOVED DUE TO COPYRIGHT REASONS

Appendix L---Multidimensional Perfectionism Scale

REMOVED DUE TO COPYRIGHT REASONS

Appendix M--- Attitudes towards seeking professional psychological help scale

REMOVED DUE TO COPYRIGHT REASONS

Appendix N—National Health Service (NHS) ethnic category system

White	**-British**
	-Irish
	- Other White
Mixed	**- White and Black Caribbean**
	- White and Black African
	- White and Asian
	- Other mixed background
Asian	**- Indian**
	- Pakistani
	- Bangladeshi
	- Other Asian background
Black	**- Caribbean**
	- African
	- Other Black background
Other	**- Chinese**
	- Other ethnic group

Appendix O—Participants' country of birth

There were 652 students born in the UK (60.82%), 1 in Afghanistan (0.09%), 1 in Albania (0.09%), 1 in Angloa (0.09%), 3 in Australia (0.28%), 1 in Bahamas (0.09%), 2 in Bahrain (0.19%), 1 in Bangladesh (0.09%), 1 in Barbados (0.09%), 1 in Bermuda (0.09%), 7 in Brazil (0.65%), 7 in Bulgaria, 3 in Canada (0.28%), 113 in China (10.54%), 1 in Colombia (0.09%), 1 in Croatia (0.09%), 6 in Cyprus (0.56%), 1 in Czechoslovakia (0.09%) 1 in Demark (0.09%), 1 in Dominica (0.09%), 1 in Ecuador (0.09%), 1 in Estonia (0.09%), 2 in Finland (0.19%), 7 in France (0.65%), 11 in Germany (1.03%), 2 in Gibraltar (0.19%), 8 in Greece (0.75%), 2 in Guernsey (0.19%), 11 in Hong Kong (1.03%), 1 in Hungry (0.09%), 7 in India (0.65%), 3 in Indonesia (0.28%), 3 in Iran (0.28%), 1 in Iraq (0.09%), 11 in Ireland (1.03%), 3 in Isle of Man (0.28%), 12 in Italy (1.12%), 1 in Japan (0.09%), 1 in Jordan (0.09%), 1 in Kazakhstan (0.09%), 3 in Kenya (0.28%), 1 in Korea (0.09%), 2 in Kuwait (0.19%), 1 in Latvia (0.09%), 1 in Libya (0.19%), 3 in Lithuania (0.28%), 37 in Malaysia (3.45%), 7 in Mexico (0.65%), 4 in Netherlands (0.37%), 1 in New Zealand (0.09%), 14 in Nigeria (1.31%), 3 in Norway (0.28%), 9 in Pakistan (0.84%), 1 in Papua New Guinea (0.09%), 1 in Philippines (0.09%), 8 in Poland (0.75%), 5 in Portugal (0.47%), 1 in Qatar (0.09%), 10 in Romania (0.93%), 5 in Russia (0.47%), 5 in Saudi Arabia (0.47%), 8 in Singapore (0.75%), 2 in Slovenia (0.19%), 1 in Somalia (0.09%), 3 in South Africa (0.28%), 8 in Spain (0.75%), 1 in Sudan (0.09%), 1 in Sweden (0.09%), 2 in Switzerland (0.19%), 4 in Taiwan (0.09%), 3 in Thailand (0.28%), 2 in Turkey (0.19%), 1 in Ukraine (0.09%), 3 in United Arab Emirate (0.28%), 11 in USA (1.03%), 2 in Venezuela (0.19%) and 2 in Zambia (0.19%).

Appendix P---Skewness and kurtosis

	N	Mean	Skewness		Kurtosis		Skewness	Kurtosis
	Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error	Z score	Z score
SOP	650	.64	-.21	.10	-.43	.19	-2.10	-2.26
OOP	650	.46	.15	.10	.48	.19	1.50	2.53
SPP	650	.57	.22	.10	-.43	.19	2.20	-2.26
State of depression	650	.44	.84	.10	-.25	.19	8.40	-1.32
State of anxiety	650	.36	1.01	.10	.60	.19	10.10	3.16
ATSPHHS	650	.51	-0.33	.10	-.06	.19	-3.30	-0.32

Appendix Q—Author instruction for the the Cultural Diversity & Ethnic Minority Psychology Journal

Appendix

Single study reports

Single study reports of quantitative and qualitative research are between 4,000 and 6,000 words of text (including abstract). The word limit does not include reference pages, tables, and figures. Theoretical, conceptual, and integrative review manuscripts also must adhere to this word limit.

Style of Manuscripts

When providing racial or ethnic designations, please use initial capital letters. *Webster's New World Dictionary of American English, 3rd College Edition*, is the accepted source for spelling. Define unusual abbreviations at the first mention in the text.

The text should be written in a uniform style, and its contents as submitted for consideration should be deemed by the author to be final and suitable for publication.

Title Page

The title page should contain the complete title of the manuscript, names and affiliations of all authors, institution(s) at which the work was performed, and name, address, telephone and fax numbers of the author responsible for correspondence.

Please include the word count of the text and abstract.

Authors should also provide a short title of not more than 45 characters (including spaces), and up to 5 key words, that will highlight the subject matter of the article.

Abstract and Keywords

All manuscripts must include an abstract containing a maximum of 250 words typed on a separate page. For commentaries and special section/issue introductions, the abstract is limited to 150 words. For research and review articles, the abstract is limited to 250 words and the following headings are required:

Objectives: Study aims or hypotheses. The abstract must begin with this heading (i.e., no sentences should precede the Objectives heading)

Methods: Sample description (including size, race or ethnicity, gender, average age) and research design

Results: Results that pertain to study aims or hypotheses

Conclusions: Implication of findings

After the abstract, please supply up to five keywords or brief phrases. Phrases are limited to three words maximum.

Participants: Description and Informed Consent

The Method section of each empirical report must contain a detailed description of the study participants, including (but not limited to) the following:

age

gender

ethnicity

nativity or immigration history

SES

clinical diagnoses and comorbidities (as appropriate)

any other relevant demographics (e.g., sexual orientation)

In the Discussion section of the manuscript, authors should discuss the diversity of their study samples and the generalizability of their findings.

The Method section also must include a statement describing how informed consent was obtained from the participants (or their parents/guardians) and indicate that the study was conducted in compliance with an appropriate Internal Review Board.

Manuscripts that report on clinical trials using randomized controlled trial designs must include as a figure the CONSORT flow diagram which displays the progress of all participants through the trial. Additionally, authors should follow the 25-item CONSORT checklist when writing the study methods and results. The CONSORT flow diagram and checklist are located on the CONSORT website.

Measures, Study Design, and Data Analysis

The Method section of empirical reports must contain a sufficiently detailed description of the measures used so that the reader understands the item content, scoring procedures, and total scores or subscales. Evidence of reliability and validity with similar populations should be provided.

The policy of *Cultural Diversity & Ethnic Minority Psychology* is to publish papers where authors follow standards for disclosing key aspects of the research design and data analysis. Authors are encouraged to review the standards available for many research applications from http://www.equator-network.org/ and use those that are relevant for the reported research applications.

Statistical Reporting of Effect Size and Confidence Intervals

We now require that authors report means and standard deviations for all continuous study variables and the effect sizes for the primary study findings. Note that the *Publication Manual of the American Psychological Association* (APA, 2001, pp. 25–26) emphasizes the importance of reporting effect sizes in addition to the usual tests of statistical significance.

Effect sizes, or similar statistics such as "goodness-of-fit" indicators for structural equation modeling, can be generated by most statistical packages that are used in the behavioral

sciences. If effect sizes are not available for a particular test, then authors should convey this in their cover letter at the time of submission.

Citations in the Text

In the text, references should be cited by the name and date system. Both names are cited for a work with two authors. When a work has fewer than six authors, cite all names the first time the reference in the text appears; subsequent citations should only cite the first author's name, followed by "et al." When a work has six or more authors, cite only the first author's surname, followed by "et al." Refer to the following citation examples.

In a similar case study, Haley (1973) utilized…

One authority (Green, 1991) suggested…

Data Citation

All data, program code and other methods should be appropriately cited. Such materials should be recognized as original intellectual contributions and afforded recognition through citation.

All data sets and program code used in a publication should be cited in the text and listed in the reference section.

References for data sets and program code should include a persistent identifier, such as a Digital Object Identifier (DOI). Persistent identifiers ensure future access to unique published digital objects, such as a text or data set. Persistent identifiers are assigned to data sets by digital archives, such as institutional repositories and partners in the Data Preservation Alliance for the Social Sciences (Data-PASS).

Data set citation example: Alegria, Margarita, James S. Jackson, Ronald C. Kessler, and David Takeuchi. Collaborative Psychiatric Epidemiology Surveys (CPES), 2001–2003 [United States]. ICPSR20240-v8. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2015-12-09. http://doi.org/10.3886/ICPSR20240.v8

Reference List

References should be arranged in alphabetical order of the author's names. Multiple entries by one author are arranged chronologically, with the earliest publication appearing first. When more than one publication by the same author is cited for a year, arrange the citations alphabetically by title and distinguish the citation by lowercase letter: 1991a, 1991b, etc.

Publications by two or more authors should come after all publications by senior author alone. They are arranged alphabetically, after the first author's name, by the names of the second authors, and so on. Multiple books by the same pair or the same group of authors should be arranged chronologically.

The first line of the reference should be indented; subsequent lines should be flush left. Please adhere to stylistic guidelines set forth in the *Publication Manual* when preparing your reference list. Please note that the page numbers should be inclusive and journal or monograph series titles should not be abbreviated.

Note the punctuation in the following examples:

Journal Article:
Hughes, G., Desantis, A., & Waszak, F. (2013). Mechanisms of intentional binding and sensory attenuation: The role of temporal prediction, temporal control, identity prediction, and motor prediction. *Psychological Bulletin, 139,* 133–151. http://dx.doi.org/10.1037/a0028566

Authored Book:
Rogers, T. T., & McClelland, J. L. (2004). *Semantic cognition: A parallel distributed processing approach.*Cambridge, MA: MIT Press.

Chapter in an Edited Book:
Gill, M. J., & Sypher, B. D. (2009). Workplace incivility and organizational trust. In P. Lutgen-Sandvik & B. D. Sypher (Eds.), *Destructive organizational communication: Processes, consequences, and constructive ways of organizing* (pp. 53–73). New York, NY: Taylor & Francis.

Tables

Each table must have a title and should be self-explanatory. Avoid duplicating information in the text. Number tables with Arabic numerals in order of appearance in the text. Indicate in the text where tables should be inserted.