RESEARCH ARTICLE

The effect of perfectionism on chronic fatigue syndrome among international students; chronic Fatigue Syndrome among international students

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Abstract

This study explores the relationship between perfectionism and Chronic Fatigue Syndrome (CFS) among international students. CFS is a complex condition characterized by persistent fatigue lasting over six months, with various somatic and psychological symptoms. Despite the lack of definitive medical causes, treatments such as Cognitive Behavioral Therapy (CBT) and Graded Exercise Therapy have shown effectiveness in improving patient outcomes. This research examines how perfectionist tendencies may influence the manifestation and management of CFS in an international student population, considering the potential impact on their cognitive, somatic, and social functioning. The findings aim to contribute to a better understanding of psychological factors affecting CFS and to inform tailored interventions for this vulnerable group.

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1. Introduction

1.1. Chronic Fatigue Syndrome

Chronic fatigue syndrome (CFS), previously known as magic encephalomyelitis (ME), is a condition involving chronic fatigue lasting 6 months or more without any known cause or associated cognitive difficulties [1]. Between 0.2 % and 0.6 % of people in the world suffer from CFS, depending on the definition used [2]. Even though less is known about the epidemiology of CFS in the UK compared to elsewhere, recent findings suggest that 0.2% to 0.4% of the population suffer from it [3]. The majority of patients declare low capability in cognitive, somatic, psychological, and social functioning which tend to lead to issues in their professional lives [4-8]. CFS patients have been observed to experience various somatic issues, such as sleep problems, headaches or muscle pain, feeling giddy or sick, and rapid or erratic heartbeats [1]. Additionally, a study of CFS patients suggested that better outcomes may be achieved by ceasing efforts to manage pain, and, instead, focusing on accepting it [9]. Chronic fatigue may also be associated with an unusually prolonged disease, such

as respiratory tract infections, different types of pneumonia, chronic diarrhea, Epstein Barr virus etc. [10]. The possible causes of CFS are still medically undeclared [11]. Systematic reviews have suggested that Cognitive Behavior Therapy (CBT) is the most effective method for treating CFS. This is highly recommended in order to improve functioning and to decrease patients' fatigue [12]. Additionally, in order to improve "action-proneness" (behavioral and cognitive proneness to right action), Graded Exercise Therapy was also demonstrated to be a useful method of treatment [13].

1.2. Perfectionism

It has been demonstrated that CFS and perfectionism are psychologically associated with one another [26-28]. However, there has only been limited work investigating the relationship between perfectionism and CFS. Research has found reported evidence suggesting that there is a relationship between perfectionism and fatigue in non-clinical cases [29]. Moreover, studies have demonstrated that individuals with CFS reported higher levels of perfectionism compared to those without CFS [26, 30]. Additionally, another study showed that individuals tend to have higher levels of perfectionism even before the onset of the mental disorder (CFS) [27]. The study suggested that individuals who have CFS reported that they set high standards for themselves [28]. Perfectionism has been defined by two factors: 'personal standards' (struggling achieve highest standards) and 'evaluative fears' (self-doubt and critique) [31]. Perfectionism was defined by Flett and Hewit [32] as "the struggling for faultlessness and excessive perfectionist individuals who claim or desire to be impeccable in all fields of their life". Although some research has suggested that there is only negative perfectionism [33, 34], one study has claimed that there are two different types of perfectionism: negative and positive [35]. In 1998, Slade and Owens suggested a dual-process model of perfectionism incorporating "positive" and "negative" perfectionism, which was derived from Hamachek's (1978) neurotic and normal perfectionism model [36]. Positive perfectionism relates to the desire for positive consequences, while negative perfectionism is perfectionist performance driven by the aim to not have any failures. Following the establishment of a dual-process model, the effects of perfectionism on people's well-being and lifestyle have been explained better. Some recent studies investigate the different aspects of positive and negative perfectionism [37-38]. Unhealthy perfectionism (negative perfectionism) may lead to an increase in CFS patients' levels of stress and depression [39]. This idea is supported by a study which claims the positive correlation between negative perfectionism and CFS [40]. Additionally, it has been found that perfectionism also plays a role in causing eating disorders [18], depression [19], and anxiety [20] disorders. Consequently, it needs to be emphasized that perfectionism can have a negative impact on people's lives and well-being [41].

1.3. Self-esteem

A recent study has suggested that a negative or maladaptive perfectionism has a negative correlation with self-esteem [40]. Our self-esteem is our opinion about ourselves, which may be healthy or unhealthy [42]. Furthermore, healthy self-esteem tends to trigger positive thoughts about people and about life in general, while people with reportedly lower self-esteem are more likely to have a negative outlook, to be critical, and to have low levels of motivation when facing challenges [39]. Additionally, regarding the role of self-esteem in perfectionism, research suggests that CFS patients have lower levels of self-esteem compared to healthy individuals [39]. Furthermore, some research has investigated the association between self-esteem and CFS and has found that depressed CFS patients tend to report lower levels of self-esteem than patients who do not suffer from depression [43-44]. There is evidence that from a theoretical perspective, negative perfectionism leads to feelings such as failure which can cause low self-esteem [45-46]. Additionally, CFS can also trigger a negative effect on self-esteem. In particular, CFS patients who are highly self-critical often experience high levels of incoherence about their premorbid and postmorbid capabilities [42]. Consequently, individuals who reported higher levels of negative perfectionism in CFS are more likely to have lower self-esteem.

1.4. International students

International students tend to experience information overload and they usually have more problems than home students which can affect their psychological well-being [14]. It is well known that international students are likely to demonstrate their highest education performance in their own country and home environment [15] and, therefore, they are expected to achieve the highest results during their time abroad [16]. Consequently, going through a period of adaptation, including adapting to a new environment, new academic materials, making new friends, and living away from family may have negative effects on international students [15]. Some studies have investigated how negative perfectionism is related to

various psychological and academic issues which may be reported by international and home students [16-22]. International students are more likely to suffer from higher levels of self-critical perfectionism which directly impacts their level of fatigue. Although some work has investigated negative perfectionism among international students, to our knowledge, the present research is the first to explore the association between CFS, perfectionism, and self-esteem.

1.5. Aims and hypotheses

The present research explores the link between perfectionism and CFS and considers the relationship between perfectionism and self-esteem using a large cohort the effect of perfectionism and level of self-esteem on fatigue and the risk level of CFS among international students. A further goal of this paper was to assess whether international students would report a higher level of fatigue compared to home students due to social factors such as culture shock, information overload, and lower levels of social support.

We hypothesized that:

1) The level of CFS which has been reported by international students will be significantly higher than that reported by home students;
2) The findings of the study will suggest there is a positive correlation between perfectionism and CFS among international students;
3) Perfectionism and self-esteem will be significantly strong predictors of CFS among both international and home students.

1. Main/Body part

1.1. Participants

Participants were both home and international students who participated voluntarily in the study. 110 students were asked to participate in the survey. Of the 110 participants, 10 (9.1 %) were removed from all analyses as they submitted incomplete questionnaires. The final sample consisted of 100 students. Most of the students were home students (59 %) and the rest were international students (41%). The participants had mean ages of 23.51 for the home students and 21.34 for the international students. Most of the participants categorized themselves as an undergraduate (61%), and only one participant was a PhD student. Of the 110 participants, 38% were postgraduate students. The research was approved by the Coventry University's ethical committee, and all participants gave informed consent. The students were provided a with hard copies of the questionnaire and were asked to return them to the researcher when they had completed it.

1.2. Measures

1.2.1. Chalder Fatigue Scale

The pack of questionnaires consisted of three scales. Participants were asked to complete the measures of fatigue, self-esteem, and perfectionism.

In order to evaluate the intensity of mental and physical fatigue, The Chalder Fatigue Questionnaire (CFQ) [47], also known as the Chalder Fatigue Scale, was used. This is a brief 11-item scale evaluating the severity of both mental and physical fatigue according to two different subscales. Of the eleven items, seven refer to physical fatigue (items1-7) and four to mental fatigue (items8-11). The items are scored on a scale of 0-3 (less than usual; no more than usual; more than usual; much more than usual). High scores indicate high levels of fatigue (range = 0-33). Research has shown that the CFQ has high reliability and validity among healthy persons and individuals with CFS [48].

1.2.2. Multidimensional perfectionism scales

The Multidimensional Perfectionism Scale (MPS-F) [49] assesses six various components of perfectionism on 5-point Likert scales. This is a 35-item scale and scores for each component range as follows: doubts about action (DA) 4–20;

concern over mistakes (CM) 9–45; organization (ORG) 30; parental expectations (PE) 5–25; parental criticism (PC) 4–20; and personal standards (PS) 7–35. İn particular, CM and DA assess maladaptive perfectionism [50-53]. The likelihood of being anxious about making mistakes is defined by the CM subscale, while the likelihood of doubting the quality of someone's efficiency is determined by the DA subscale. The sum of both the DA and CM subscales demonstrates a total score of maladaptive perfectionism (MAL). Higher scores indicate higher levels of maladaptive perfectionism. The scale demonstrates high reliability and validity [54].

1.2.3. Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSE) assesses levels of self-esteem [55]. This is a commonly used tool to evaluate global self-esteem. It has ten items, which use a four-point scale (1 = strongly disagree to 4 = strongly agree). Half of the items are worded negatively (items 3, 5, and 8-10) while the other items are worded positively (1, 2, 4, 6, and 7) (e.g. " I feel that I am a person of worth, at least on an equal plane with others"; " I wish I could have more respect for myself"). During data analysis, the negative items were reverse-coded and. A higher level of self-esteem is defined by higher scores. The RSE has high validity and reliability [56].

2.3. Statistical analysis

SPSS version 15.0 was used to analyse the data. Of the 110 questionnaires returned, ten were excluded as over 25% of the questions were left blank.

Descriptive statistics, bivariate correlations, and multiple regression analysis were conducted. The correlation between predictor variables (maladaptive perfectionism and self-esteem) and outcome (chronic fatigue syndrome) was examined. Based on the results of the correlation, a multiple regression analysis was conducted. An independent sample t-test was used to examine the level of CFS among both home and international students. The correct number of targeted participants was analyzed by Power Analysis and taking into consideration 0.5 correlation the minimum targeted number is 28 for each group of students [57].

3. Results

The multiple regression results demonstrate that self-esteem and perfectionism are not significant predictors of CFS. However, the study shows no significant difference between the level of CFS reported by international and home students, which was suggested in previous studies.

3.1.1. Demographics

Of the 110 students (both home and international) recruited, 100 (90.9 %) fully completed the questionnaires. International students reported slightly higher results than home students only on the CFS scale (international students - 26.95; home students - 23.61). Conversely, home students (Mean: 136.00) showed slightly higher levels of perfectionism than international students (Mean: 131.68). However, both groups of students reported almost the same level of self-esteem.

3.3. Independent t-test

An independent sample t-test was conducted to determine whether there was a significant difference between reports of CFS for international and home students. Given that Levene's test of homogeneity was non-significant, equal variances can be assumed. The results of the t-test showed that there was no significant difference between the two groups: t (98) = 1.708, p=0.091. Therefore, international students did not report significantly higher levels of CFS than home students, although the international students did report slightly higher levels of CFS than home students.

3.4. Correlation analyses

A correlation analysis was conducted to analyse any significant relationships between CFS, perfectionism, and self-esteem. This was done both with the data, as well as within groups (international vs. home students). The CFS levels were not found to be correlated with any of the subscales (neither perfectionism nor self-esteem). There was, however, a significant negative correlation between self-esteem and perfectionism when considering the data as a whole: (r=-0.198, p=0.048).

Moreover, a significant negative correlation was found between self-esteem and perfectionism amongst international students. However, this correlation was not significant (r=-0.465, p=0.002) for home students.

3.4 Multiple regression analyses

Based on the results of the correlations, the relationship between perfectionism, self-–esteem, and fatigue was explored. Given that the data fit the assumptions for multiple regression, a forced-entry multiple regression was conducted. However, the variance accounted for by the model was low, and the regression model was non-significant which means that the outcome variable (CFS) cannot be predicted by the two predictor variables (self-esteem and perfectionism):

F (2, 97) =1.885, p=0.157. In order to verify the lack of a relationship a scatter graph was plotted, and the result confirmed.

Overall, the percentage accounted for international and home students are 2% and 4% respectively. Perfectionism and self-esteem are not significant predictors of CFS; however, self- esteem is close to be a significant predictor of CFS (p=0.056).

4. Discussion

The present research is the first, to our knowledge, to explore the differences between the levels of CFS among international and home students. Furthermore, it is also the first to demonstrate an association between perfectionism, self- esteem, and CFS in a student cohort (N=100). We assessed whether self-esteem and perfectionism were significant predictors of fatigue among both international and home students, which is a new and useful finding in the field of CFS. It is particularly intriguing that the international students are not more likely to have CFS. Additionally, self-esteem and perfectionism were not seen to be predictors of CFS among students, which may be a useful finding as it is a common assumption that chronic illnesses such as CFS may have psychological causes [58]. Although it was expected that zero-order correlation would show a positive relationship between perfectionism and CFS among international students, the findings of the research did not confirm our first hypothesis. The results demonstrate that international students who reported slightly higher CFS scores compared to home students also reported lower self-esteem. In fact, for international students, only a lack of self-esteem was related to the outcome (CFS). For home students, there was no relationship between perfectionism, self-esteem, and CFS. One of our hypotheses was that the level of CFS reported by international students would be significantly higher than that reported by home students.

However, the results of the study did not confirm the second hypothesis, as there was significant difference between the levels of fatigue reported by the two groups of students . International

students reported only slightly higher levels of fatigue than home students (26.95 and 23.61, respectively). Furthermore, the results suggested that international students do not suffer from maladaptive perfectionism and this may affect their fatigue levels. Furthermore, cultural differences, adapting to a new education system or academic environment, homesickness and living on their own do not seem to affect international students' psychological well-–being as they were expected to, and these challenges do not lead to CFS. However, further study could investigate these findings further by considering factors such as how well the students have adapted to the new environment and their previous life experiences. The present study has not focused on whether they international students had had similar previous experiences before, such as studying abroad or living far away from home for over a year. Additionally, some of the participants have been living in the UK for over a year and during this time they are likely to have adapted to their new academic environment. Furthermore, both international and home students showed notably high levels of fatigue. These were almost the same CFS patients' self-reported levels of fatigue [40]. The fact that data was collected during the exam period may have led students in both groups to report high levels of fatigue, thus affecting the results. Our findings,

therefore, may have implications for students' well-being during exam periods. In particular, high level of CFS may affect students' productivity and by taking into consideration the finding of the present study, academic staff could develop possible relaxation techniques for students during the exam period. These are all factors which could be incorporated into future studies.

The present study has several limitations. To our knowledge, this study is the first research investigating the level of CFS and the impact of perfectionism on CFS in a student cohort. There are, therefore, some factors which remained beyond the scope of this work, and which should be addressed in future research. Although international students did not report a high level of CFS, these findings are not necessarily generalisable and applicable to all students in the UK. This is particularly the case given the fact that most of the participants were from Coventry University. Thus, further research is needed to recruit participants from different universities in order to extend our findings. Longitudinal studies which investigate the level of fatigue and the effect of perfectionism and self-esteem on CFS are needed. Furthermore, data for this study was collected over two months (May-June), and the results of this research may have been different had the study been conducted earlier in the academic year. For instance, international students who participated in this study may have already gone through an adaptation period which may have influenced our results. In future research, data collection could happen at two intervals in the year at the start of the academic year and at the end) to allow comparison of the results. Additionally, during the data collection, it was observed that the majority of the participants were fasting for religious reasons. This may have affected the results as fasting for more than twenty hours can lead to fatigue and tiredness.

Despite these limitations, our findings offer an important contribution to the field of CFS by adding to our understanding of students' experiences of CFS. Although international students did not report significantly higher levels of CFS, for the students, perfectionism was not correlated with CFS, and neither self-esteem nor perfectionism were significant predictors of CFS for international and home students. We found that all students who participated in the study reported considerably high levels of CFS. As this is, to our knowledge, the first study which investigated the CFS field among both student cohorts, further research is needed and necessary to confirm the findings of the present study and to extend them by addressing the aforementioned limitations.

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Conflict of Interest

The authors declare no conflict of interest related to this study. The research was conducted independently, and there are no financial or personal relationships that could have influenced the results or interpretations.

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