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Resilience, Mental Flourishing, Character Strengths and Job Satisfaction of Adults with Dyslexia Compared to a Control Group

Aglaia Stampoltzis* 

Harokopio University of Athens, GREECE

Anastasia E. Paradisi 

Panteion University, GREECE

Dimitrios Theodosakis 

Panteion University, GREECE

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Abstract: Dyslexia is traditionally regarded as a disability which has an impact on the learning process of reading, spelling and writing. This study attempts to explore the character strengths, flourishing, resilience, and perceptions of professional success and satisfaction of 477 Greek adults. The sample consisted of 30 adults with an official diagnosis of dyslexia, 103 adults who scored above the threshold limit in the Dyslexia Checklist, and 344 adults who did not report any leaning difficulty. The following instruments were employed in the study: the Brief Resilience Scale, the Flourishing Scale, and subscales of the Values in Action Inventory of Strengths 120 (creativity, perseverance, social intelligence and teamwork). The results show that the dyslexic group scored higher in creativity and teamwork in comparison to the control group. No statistical differences were observed in professional success and satisfaction between the groups. Level of education seems to correlate with creativity. The prediction models showed a negative correlation of social intelligence with suspected dyslexia and a very low prediction of flourishing and resilience on the basis of dyslexia status. Positive traits of dyslexia are worth further study. Identifying strengths among people with dyslexia might be helpful for implementing new educational interventions and strategies.

Keywords: *Dyslexia, flourishing, job satisfaction, positive dyslexia, resilience.*

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Introduction

Traditionally, dyslexia is considered to be a life-long learning disability that encompassed a number of reading, writing and other difficulties which hinder school success and require a lot of effort and persistence from the part of the students. Co-occurring difficulties may be found in motor co-ordination, mental calculation, memory, concentration and organization (Rose, 2009). The official definition of dyslexia provided by American Psychiatric Association (2013) focuses on low word reading accuracy, fluency and reading comprehension skills and it is framed in terms of incapacity instead of compensatory characteristics (Kannangara, 2015).

Dyslexia mainly manifests its effects throughout childhood, but it still remains well into adult years. It is a heterogeneous 'syndrome', with a variety of symptoms apart from the core problem of reading and overlaps with other developmental disorders such as Attention Deficit Hyperactivity Disorder, dyscalculia and dyspraxia (Nicolson, 2015; Willcutt & Pennington, 2000). In terms of the prevalence, dyslexia has been estimated to affect 4%–5% of the population severely in Western societies, with males four times more likely to have the condition than females (Reid & Kirk, 2001). According to Diagnostic and Statistical Manual-V (APA, 2013), the estimate of Specific Learning Difficulties among adults is 4%. In adult populations prevalence rates have not been adequately documented (Horowitz et al., 2017) and the majority of research findings come from self-reports and the population of tertiary or non-tertiary students (Gerber, 2012). In a Greek study by Bampalou et al. (2020) the prevalence of the main types of dyslexia and their comorbidity agrees with international data.

Positive psychology focuses on positive characteristics and virtues and deals, among other things, with the study of processes and conditions that contribute to optimal functioning and flourishing of individuals (Chao, 2015). In other

* **Corresponding author:**

Aglaia Stampoltzis, Harokopio University of Athens, Greece. ✉ Istamp@hua.gr



words, it is the scientific and applied approach to highlight the abilities and positive characteristics as well as to strengthen the positive functioning. Researchers and authors have begun recently to find areas where people with dyslexia excel, grow, and even perform better than typical readers. By recognizing the positive characteristics that accompany dyslexia, individuals with dyslexia regain their confidence and their self-belief that have been damaged during the school years (Everatt et al., 2008; Kannangara, 2015).

Literature Review

Cognitive Strengths

Research studies have identified several strengths associated with dyslexia. The following are a few of the skills that adults with dyslexia possess: good visual and spatial skills in creative areas such as engineering and the physical sciences (Reid & Kirk, 2001; West, 1997), aptitudes for spotting informational patterns and representing three-dimensional images when working with computers (Geschwind, 1982), a special ability to rearrange designs and information which would contribute to innovative and creative design and a more holistic way of viewing the world and finding solutions to problems (Osmond, 1993).

Davis and Braum (2010) in their pioneer book proposed eight core abilities associated with dyslexia which form the gift of dyslexia: the primary ability to shape and create perceptions, as well as environmental sensitivity, curiosity, visual thinking, intuition, and insight. Other skills include the ability to think and perceive in multiple dimensions, the capacity to experience thought as reality, and strong imagination.

Professionals that work with dyslexic people have long been aware of Gardner's (2006) theory of multiple intelligences. Gardner (2006) asserts that many dyslexic people exhibit great spatial or visual abilities. These skills can be used to support students in achieving success in careers and other activities that need these abilities.

Creativity

Research found an association between dyslexia, visuo-spatial awareness and creativity. The latter is connected with careers of dyslexic persons in professions such as photography, acting, engineering, graphic design etc. After speaking with many successful dyslexic adults for her book "Creative, Successful, Dyslexic", Rouke (2016) notes that people with dyslexia seem to be more creative because of the focused activity in the right hemisphere of the brain. Additionally, it is asserted that choosing a professional path that encourages creative expression can improve a person's sense of self and level of happiness in life.

Everatt et al. (1999) found higher levels of creativity in test assessing figural skills of children with dyslexia. Later studies employing a drawing task to test this hypothesis found that people with dyslexia performed more quickly and with greater levels of detail. According to Everatt et al. (2008) adults with dyslexia perceive themselves as creative in comparison to non-dyslexics. Additionally, Pachalska et al. (2009) reported greater overall creativity in adults with dyslexia. Given the complicated nature of creativity, which is challenging to quantify in studies, some research has not found a significant difference in creativity between those with and without dyslexia (Alves & Nakano, 2014).

Interpersonal and Social Skills

In addition to cognitive strengths and creativity, adults with dyslexia are found to have virtues and character strengths such as empathy, understanding, patience, curiosity, imagination and energy (Sanderson-Mann & McCandless, 2006). Riddick (2003) suggests that teachers who are dyslexic themselves believe that their condition gives them an edge since it makes it easier for them to relate to and comprehend the difficulties that students with dyslexia have in the classroom. This is explained by the fact that they had unpleasant experiences as students themselves and wanted to provide their students with a better education than they had received.

In addition, dyslexic adults show an inclination towards 'person-oriented' careers such as nursing (Dale & Aiken, 2007). According to Sanderson-Mann and McCandless (2006), 3 to 10% of nurses struggle with dyslexia. In addition, it has been argued that while people with dyslexia experience academic and psychological challenges due to their condition, their levels of resilience are unaffected and sometimes greater than their non-dyslexic counterparts, particularly in adulthood (Ghisi et al., 2016).

Factors that act protectively towards the lower levels of resilience are early diagnosis (Ingesson, 2007), support within the family and at school (Hellendoorn & Ruijsenaars, 2000; Stampoltzis & Polychronopoulou, 2009), awareness of the individual's reading difficulties shown by parents, teachers, and the individuals with dyslexia themselves (Cosden et al., 1999) and fostering positive self-concept as early as possible from the primary school years (Riddick, 2003).

Glazzard and Dale (2013), gathering data through qualitative study, underline that trainee teachers with dyslexia were consistent and effective in their pursuit of teaching, working hard to achieve their goals and eventually succeeding as professionals. In a study by McNulty (2003) it was found that persistence and stubbornness were two key character strengths of people with dyslexia that predicted their future success.

In a large scale study examining the differences in character strengths for people with disabilities, the top five character strengths scores for people with specific learning disabilities (dyslexia) (n=565) were love for learning, honesty, fairness, judgement, and appreciation of beauty and excellence (Umucu et al., 2022). This study emphasizes the heterogeneity in character strengths across people with different conditions as well as the areas that these people might thrive and invest for their future.

The concept of interpersonal intelligence or the social skills triad are introduced and investigated in depth by Nicolson (2015) in his pioneer book 'Positive dyslexia'. It has been argued that high achieving dyslexics display interpersonal social skills such as teamwork, communication skills, understanding and coping strategies to compensate for the deficits caused by dyslexia. Positive dyslexia, primarily aims to "allow dyslexic people to find their strengths, craft their lives according to these strengths and thus exploit the possibilities that these can bring to their own lives (p. 19)".

Work success and Satisfaction

One important aspect of the literature in adults focuses on the career choice and success in dyslexic people. In an old study by Gottfredson et al. (1984), boys who received a dyslexia diagnosis during adolescence were later tracked down in adulthood. The occupations of these men were compared to those of a control group. While the dyslexic men had higher-level employment than the typical men, they also had much lower chances of becoming professionals than the controls. They hardly ever chose careers requiring advanced degrees, such as that of a doctor, lawyer, or college professor, opting instead to work as managers or salesmen, which placed more of an emphasis on non-academic skills.

Logan (2009) and Franks and Frederick (2013) explores the reasons why dyslexics may be overrepresented in entrepreneurial positions and demonstrates how some characteristics of both dyslexia and entrepreneurship may overlap. The ability to think "conceptually" and to be an effective verbal communicator are highlighted as traits that are typical of entrepreneurs. The fact that entrepreneurship is frequently associated with dyslexia is noteworthy, largely because of the large number of well-known people who have achieved success in business, who have credited their achievements to their flair for "innovation" and the "big-picture approach," two of the several conclusions drawn from earlier research regarding the benefits of dyslexia (Agahi, 2015; Alexander-Passe, 2015).

Fink (1995) interviewed 60 highly successful men and women with dyslexia to study their alternate routes to challenging careers as well as gender issues. Her first observation is that the 60 persons were successful readers and professionals because they followed their own interests and passions. For 40 persons, persistence was a core personality trait essential to an enduring self-concept. Males overall had twice as many mentors as females. Mentors included people who guided and supported them inside or outside their family. Additionally, women who were interested in science were also encouraged to pursue more traditionally feminine professions. The results of this research suggest that dyslexic people should consider occupations that appeal to their own interests and recognize the value of joy and excitement.

Shaywitz et al. (2020), in the Yale outcome study, found that dyslexic college graduates did not differ from typical graduates in college and the workplace. The former was able to achieve high levels of job satisfaction comparable to the latter, and they devised successful strategies for managing their weaknesses. Accepting and positively reframing one's dyslexia appears to be a key to success and adjustment.

Coping with Dyslexia

The advantage of positive dyslexia literature is that it offers a starting point to build upon. If adults with dyslexia realize early their character strengths, they can build upon to optimize the use of their talents, which in turn, will enhance their psychological well-being. (Bell, 2009). The approaches to learning and studying by students with and without dyslexia differ significantly (Riddick et al., 1997). Additionally, individuals with dyslexia have thrived in occupations that utilize their skills, allowing them to exhibit their ability in creative fields (Kannangara et al., 2018). These who adjust better than others seem to discover and employ a number of personalized strategies to cope with dyslexia in different levels (Stampoltzis & Polychronopoulou, 2009).

However, it might be challenging to tell whether a dyslexic person's skills are genuinely brought on by their dyslexia or whether they are an added ability or coping mechanism unique to the individual. For some adults with dyslexia, their school and other experiences have taught them valuable lessons and have helped them to improve progressively their coping strategies (Stampoltzis & Polychronopoulou, 2009). However, because of the negative experiences dyslexic children have had with standard education teaching and because of how dyslexia is perceived in society, there is a community of dyslexic people who have low self-esteem, anxiety, sadness, and little faith in their own abilities (Kannangara et al., 2018).

Context of the Study

The present study aims to investigate the character strengths and positive traits of individuals with dyslexia in comparison to non-dyslexic individuals or individuals who suspect that they have dyslexia-type difficulties in a Greek sample of adults. As far as we know, it is the first Greek research on adults with and without dyslexia adopting theoretical

concepts of positive psychology and positive dyslexia. The study attempted to shed light on the following research questions:

- a) Which are the character strengths and level of resilience and flourishing in individuals with dyslexia in comparison to a control group and a group of people suspected of dyslexia?
- b) Is dyslexia associated with higher levels of work satisfaction and professional success?
- c) How do the demographic characteristics (sex, age, level of education and work position) affect the character strengths (creativity, perseverance, social intelligence, teamwork) as well as the resilience and flourishing levels of the participants?
- d) Is learning ability (status) a positive and significant predictor of character strengths, resilience and mental flourishing?

Methodology

Participants

A total of 477 adults, aged above 18 years old, from all over Greece, participated in the survey with no other restrictions or criteria. Of these, 30 participants had an official diagnosis of dyslexia from a state certified diagnostic center, 103 were suspected of having dyslexia as they scored above the threshold limit in the Revised Adult Dyslexia Checklist, and the remaining 344 did not declare any learning problem or dyslexia. It should be mentioned that the estimation of dyslexia in the whole sample (30 out of 477 persons) was 6%, which is an acceptable prevalence rate for an adult sample given that, according to the Diagnostic and Statistical Manual-V (APA, 2013), the estimate of Specific Learning Difficulties among adults is 4% (Bampalou et al., 2020). Table 1 presents the basic demographic characteristics of the participants.

Table 1. Basic Demographic Characteristics of the Participants

| | N | % |
|--|-----|------|
| Sex | | |
| Men | 122 | 25.6 |
| Women | 355 | 74.4 |
| Age | | |
| 18-31 | 257 | 54 |
| 32-44 | 146 | 30.6 |
| 44+ | 73 | 15.3 |
| Missing data | 1 | 0.1 |
| Diagnosis of dyslexia | | |
| Yes | 30 | 6.3 |
| No | 344 | 72.1 |
| Suspected dyslexia | 103 | 21.6 |
| Level of education | | |
| Secondary education graduate | 101 | 21.2 |
| Tertiary education graduate | 257 | 53.8 |
| Post-graduate studies (Master or Ph.D) | 119 | 25 |
| Work position | | |
| Employee | 278 | 58.2 |
| Chief position | 35 | 7.3 |
| Freelance | 95 | 20 |
| Other | 69 | 14.5 |

A Pearson chi-square test (χ^2) was performed to test the relationship of learning status (dyslexia, no dyslexia, suspected dyslexia) with the demographic characteristics. No statistically significant results are obtained. Dyslexics seem to appear in greater proportion at the younger age group (76.7%) in comparison to non-dyslexics (52.2%) and those suspected of dyslexia (53.4%)

Research Instruments

Four questionnaires were employed as research instruments in the present study.

The Revised Adult Dyslexia Organisation Screening was developed by Professor Tim Miles, in collaboration with the Adult Dyslexia Organisation and the London South Bank University. The checklist is organized around some of the main reading, spelling, memory, organization, and sequencing challenges faced by people with dyslexia. A substantially large sample, with a wide variety of educational experience, was included for the pilot study of the checklist. Results were compared with 140 people who had a formal dyslexia diagnosis. The Revised ADO comprises of 12 questions and a total

score is counted for each subject. The highest score is 30. Persons who obtain a score greater than 18 are above average likely to be dyslexic (1 in 3 chance). The Cronbach α reliability coefficient of the scale in our study was 0.709 which is quite satisfactory.

Brief Resilience Scale (BRS) is developed by Smith et al. (2008). It is a 6-item measure of resilience, test that emphasizes the capacity to overcome anxiety and hardship. Responses are scored on a 5-point Likert scale, scored from strongly disagree (1) to strongly agree (5). BRS has only one factor. The higher the mean BRS score the more resilient the respondent is. To prevent social desirability response bias, half of the items had their scores inverted. Kyriazos et al. (2018) used the translation/back-translation process to translate BRS into Greek. The Cronbach α reliability coefficient of the scale in our study was 0.796.

The Flourishing Scale (FS) is a brief 8-item summary measure of the respondent's self-perceived success in areas such as relationships, self-esteem, purpose in life, emotions of competence, and optimism (Diener et al., 2010). It is based on recent theories of psychological and social well-being. A single psychological well-being score is provided by the scale. The higher one's score in the set of questions, the higher his/her levels of flourishing. The scale was translated and back translated in Greek by two experienced psychologists for the purpose of the present study. It proved to have a very good reliability coefficient of 0.859.

The Values in Action Inventory of Strengths 120 (VIA-IS) is the abbreviated version of the VIA classification developed by Peterson and Seligman (2004). It includes 24 strengths (with 5 items each), related to one of six broader virtues. Items are completed on a 5-point scale from *very much like me* to *very much unlike me*. It gives a dimensional representation of each character strength (Littman-Ovadia et al., 2014). The VIA-IS scales revealed good psychometric properties for all 24 character strengths, with Cronbach's alpha often higher than .70 (Littman-Ovadia & Lavy, 2012; Park et al., 2004). The VIA-IS 120 has been validated in the Greek cultural context through three studies with Greek samples by Pezirkianidis et al. (2020), The internal consistency of the total VIA-IS was found to be $\alpha=.96$. Based on the positive dyslexia literature and for time reasons, only four strengths from the VIA-IS 120 were used in the present study: Creativity, perseverance, social intelligence and teamwork. The Cronbach α for the total score of the four subscales is 0.892 (creativity $\alpha =0.901$, perseverance $\alpha =0.885$, social intelligence $\alpha =0.727$ and teamwork $\alpha =0.756$).

Procedure

The survey was first approved by the ethical committee of the university. An online questionnaire was created and distributed through social media. The only eligibility criterion to take part in the survey was to be an adult. The research was conducted from January 2020 to July 2020. Participants were assured that their answers would be kept anonymous and confidential and that they might abandon the survey at any time. Additionally, they can also access the study's findings. The research was conducted online due to the COVID-19 pandemic restrictions. When the survey closed, the questionnaires were collected and analyzed statistically through the SPSS.

Findings / Results

Descriptive and Inferential Statistics-Correlations

This part refers to descriptive statistics and correlations and additionally, it tests the first three hypotheses of the study. Mean values, standard deviations, and Spearman's rho correlations for the variables of the study are presented in Table 2. The highest positive correlations are observed between creativity and flourishing [$\rho(442) = .504, p < .001$], and resilience and flourishing [$\rho(442) = .496, p < .001$]. Also, the character strength subscales (creativity, perseverance, social intelligence and teamwork) show moderate to low positive correlations.

Table 2. Mean scores, Standard Deviations, and Spearman's rho Correlations for all Variables

| Variables | Creativity | Perseverance | Social Intelligence | Teamwork | Resilience | Mean | S. D |
|---------------------|------------|--------------|---------------------|----------|------------|------|------|
| Creativity | | | | | | 2.73 | 0.8 |
| Perseverance | 0.388** | | | | | 3.05 | 0.8 |
| Social intelligence | 0.487** | 0.403** | | | | 3.20 | 0.6 |
| Teamwork | 0.355** | 0.404** | 0.411** | | | 3.07 | 0.6 |
| Resilience | 0.335** | 0.367** | 0.357** | 0.224** | | 2.45 | 0.7 |
| Flourishing | 0.504** | 0.473** | 0.482** | 0.340** | 0.496** | 5.45 | 0.9 |

* $p < .05$

Table 3 presents the relationship of learning status with the scales of character strengths, resilience and flourishing. Mean scores are compared with Kruskal Wallis test for more than two independent samples. No statistically significant differences are found, but we can observe that in the scales of creativity and teamwork there is a higher mean score for dyslexics compared to non-dyslexics (Table 3).

Table 3. Relationships of Character Strengths, Resilience, and Flourishing Scales with Learning Status (Ability)

| Learning Status | Character strengths | | | | | |
|-------------------------------|-------------------------|---------------------------|----------------------------------|-----------------------|-------------------------|--------------------------|
| | Creativity Mean (SD) | Perseverance Mean (SD) | Social Intelligence Mean (SD) | Teamwork Mean (SD) | Resilience Mean (SD) | Flourishing Mean (SD) |
| No dyslexia (N=344) | 2.70 (0.8) | 3.07±0.8 | 3.24±0.6 | 3.07±0.6 | 2.48±0.7 | 5.51±0.8 |
| Dyslexia (N=30) | 2.92 (0.9) | 2.95±0.8 | 3.22±0.6 | 3.15±0.5 | 2.42±0.7 | 5.34±1.1 |
| Suspected Dyslexia (N=103) | 2.75 (0.9) | 3.02±0.8 | 3.14±0.6 | 3.04±0.7 | 2.37±0.8 | 5.27±1.1 |
| p-value | 0.272 | 0.602 | 0.226 | 0.769 | 0.202 | 0.340 |

*p<.05

Regarding the relationship between learning status and creativity with reference to the demographic characteristic of level of education, the following result is obtained: Dyslexic people with the highest educational level (postgraduate qualifications) (U=156.5, p=0.026) show a higher mean score of creativity (3.54) in comparison to non-dyslexics (2.92) according to the Mann-Whitney test (U=156.5, p=0.026) (Figure 1).

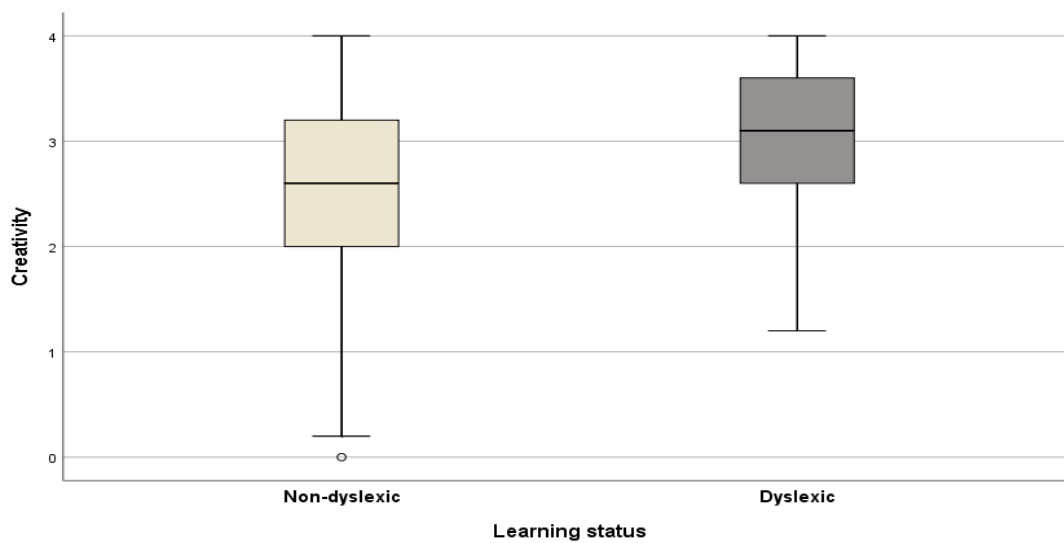


Figure 1. The Relationship between Learning Status (Ability) and Creativity for Participants with the Highest Educational Level.

Similarly, regarding the relationship between learning status and creativity with reference to the work position, freelancers with dyslexia tend to show higher average creativity (4.00) in comparison to non-dyslexic freelancers (3.00) (U=1318.5, p=0.050) (Figure 2).

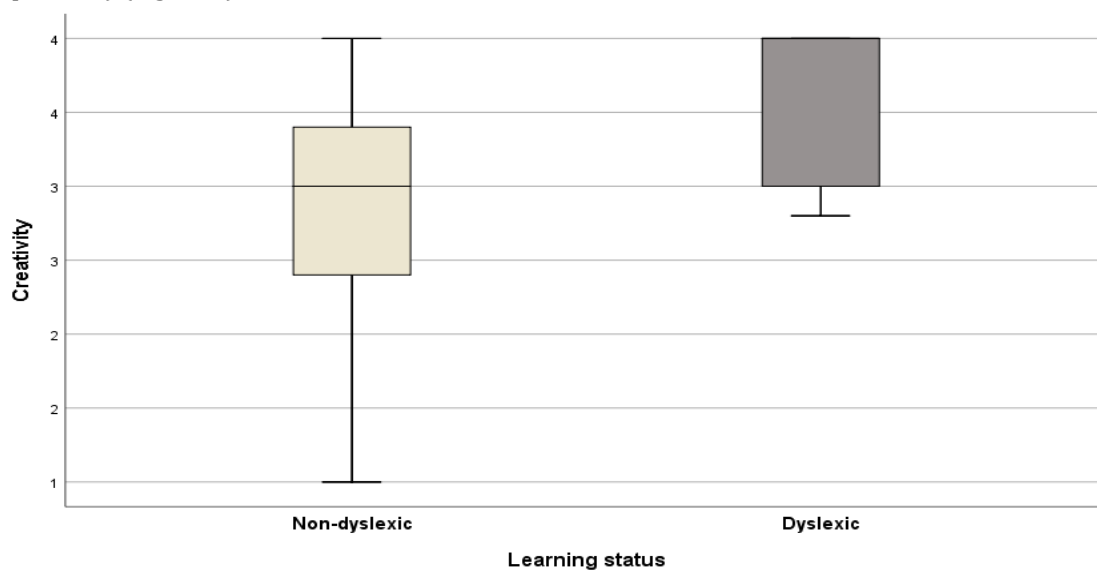


Figure 2. The Relationship of Learning Status (Ability) with the Creativity Scale for Freelancers.

The next results refer to the questions of professional satisfaction and professional success in relation to the learning status of the participants (How satisfied do you feel with your profession? How successful are you considered to be in your career?). Table 4 presents percentages of answers by category and comparison of categories according to a Pearson chi-square test (χ^2). Although no statistical differences are observed between dyslexics, non-dyslexics and suspected dyslexics, one can observe that people with dyslexia show higher rates of satisfaction (66.7%) and perception of success (56.7%) than those without dyslexia (61.4% and 49.6% respectively).

Table 4. The Relationship of Professional Flourishing (Satisfaction and Success) to Learning Status (Ability) variable

| Variables | Learning Status | | | p-value |
|---|------------------------|--------------------|-------------------------------|---------|
| | No dyslexia (n=344) | Dyslexia (n=30) | Suspected Dyslexia (n=103) | |
| | N (%) | N (%) | N (%) | |
| Professional satisfaction | | | | 0.429 |
| Not at all-Little | 38 (11.2) | 3 (10.0) | 17 (16.5) | |
| Moderate | 93 (27.4) | 7 (23.3) | 32 (31.1) | |
| Enough-Much | 208 (61.4) | 20 (66.7) | 54 (52.4) | |
| Perception of professional success | | | | 0.380 |
| Not at all-Little | 61 (18.0) | 3 (10.0) | 25 (24.3) | |
| Moderate | 110 (32.4) | 10 (33.3) | 34 (33.0) | |
| Enough-Much | 168 (49.6) | 17 (56.7) | 44 (42.7) | |

Linear Regression Analysis

Before applying a regression model analysis, we took into account the following assumptions: The independent variables have low correlations with each other and have statistically significant correlations with the dependent variables. Also, outliers have been removed from the analysis and sample size assumptions have been met (Tabachnick & Fidell, 2019).

The next part of the results presents the linear regression analyses to determine the predictive value of learning status with reference to character strengths. A multivariate regression model was applied and according to the coefficient of variability (R^2), which varies in very low percentages (from 1.7% to 5.3%), around 5.3% of the variation of the model explains the scale of creativity. All models are adjusted for age, gender, education level and job position. Thus, the only statistically significant relationship is with the social intelligence scale. In particular, the average scale of social intelligence decreases by 0.13 points ($\beta = -0.13$, 95% CI= -0.3, -0.01) in people who suspect they have dyslexia (Table 5).

Table 5. Multivariate Linear Model for the Strengths of Character Scales

| Learning status | Character strengths | | | |
|----------------------|---------------------|-------------------|----------------------|-------------------|
| | Creativity | Perseverance | Social Intelligence | Teamwork |
| | β (95%CI) | β (95%CI) | β (95%CI) | β (95%CI) |
| No dyslexia | Reference level | Reference level | Reference level | Reference level |
| Dyslexia | 0.23 (-0.07, 0.5) | -0.10 (-0.4, 0.2) | 0.004 (-0.2, 0.2) | 0.12 (-0.1, 0.3) |
| Suspected Dyslexia | 0.02 (-0.2, 0.2) | -0.05 (-0.2, 0.1) | -0.13 (-0.3, -0.01)* | -0.04 (-0.2, 0.1) |
| R² | 0.053 | 0.017 | 0.029 | 0.023 |

Abbreviations: β = coefficient of linear regression, CI= confidence interval

Statistically significant relationship at $\alpha=5\%$ level of significance

Table 6 shows the predictive model of resilience and flourishing scales with reference to the learning status variable. The coefficients of variability (R^2) of the two models vary in very low percentages, 4.9% for resilience and 3.2% for mental flourishing. The models are adjusted for age, gender, education level and job position. In addition, the only statistically significant relationship shown is with the flourishing scale. The average scale of mental flourishing decreases by 0.28 points in people suspected of having dyslexia ($\beta = -0.28$, 95% CI= -0.5, -0.1).

Table 6. Multivariate Linear Model for the Resilience and Flourishing scales

| Learning status | Flourishing | Resilience |
|----------------------|---------------------|--------------------|
| | β (95%CI) | β (95%CI) |
| No dyslexia | Level of reference | Level of reference |
| Dyslexia | -0.15 (-0.5, -0.2) | -0.05 (-0.3, 0.2) |
| Suspected Dyslexia | -0.28 (-0.5, -0.1)* | -0.15 (-0.3, 0.01) |
| R² | 0.032 | 0.049 |

Abbreviations: β = coefficient of linear regression, CI= confidence interval
 Statistically significant relationship at $\alpha=5\%$ level of significance

Discussion

The present study is the first Greek research on adults with dyslexia adopting the theories of positive psychology and positive dyslexia, in an attempt to avoid the 'incapacity' construct of dyslexia. A novel aspect of the research is that it includes a group of individuals scoring high in a dyslexia traits checklist apart from the group of diagnosed dyslexics and the typical adults.

Dyslexic adults may have compensated for some of their difficulties, but the core task for them is adapting and succeeding at work. McLoughlin et al. (2002) combine views on how dyslexic persons might modify their work environment in order to minimize their weaknesses and focus on their strengths. According to Hoffmann et al. (1987), adults with dyslexia are always under pressure to meet standards set by a number of people, especially when it comes to finding and keeping employment. An optimistic view is supported by Shaywitz et al. (2020) in the Yale outcome study, who found dyslexic graduates achieving high levels of job satisfaction and being able to devise successful strategies for managing their 'difficulties'.

In relation to the first research question which focuses on character strengths and positive individual traits of the participants, the dyslexic group scored higher in creativity and teamwork in comparison to the control group. In addition, the group of suspected dyslexics scored higher than the control group in the creativity variable. The above differences, although they did not reach statistical significance, they supported the view of Everatt et al. (2008) that adults with dyslexia are more likely than controls to consider themselves creative. According to Wolff (2011), there is some evidence suggesting that persons with exceptional creative ability make up a segment of the dyslexic population, albeit not all dyslexic populations possess high levels of creativity. However, the data is mixed. Other studies suggest that the association between creativity and dyslexia appears only in adulthood as a result of negative life experiences (Cancer et al., 2016). Teamwork as an interpersonal social skill has been mentioned as a coping strategy of dyslexic people by Nicolson (2015) who claims that high achieving dyslexics display interpersonal social skills to compensate for the deficits caused by dyslexia. The results of our study conclude that creativity and teamwork are difficult constructs to be measured and compared and they should be developed within the educational system, before adulthood.

In addition, resilience and flourishing have not been found as personal traits of the dyslexic sample in our study. It seems that the academic and psychological barriers dyslexic people faced in the Greek educational system due to their condition had an impact on their levels of resilience, even in their adult life. A number of factors that act protectively towards the lower levels of self-esteem and resilience are well documented in the literature but they are not investigated in our study (Hellendoorn & Ruijsenaars, 2000; Ingesson, 2007; Stampoltzis & Polychronopoulou, 2009). The only recent study in Greece focusing on adults with specific learning disabilities (Bampalou et al., 2020) looked at the socio-cultural context of Greece, the epidemiology, and gender differences, and discovered that adults with SLD frequently favor practical-oriented fields of study over academic-oriented ones. The authors conclude that SLD adults should be assisted in learning about the nature of SLD in adulthood in order to be able to have successful personal adjustment.

Our results so far may not fully reflect participants' perceived character strengths and virtues because only four subscales from the VIA-IS 120 inventory were used. In a large scale study by Umucu et al. (2022) which examined the top five and the bottom five character strengths of people with specific learning disabilities (dyslexia), the top five character scores were love for learning, honesty, fairness, judgement, and appreciation of beauty and excellence. Finally, a heterogeneity in character strengths across adults with different types or severity of dyslexia must be suggested as well as the need to examine the top five and the bottom five character strengths for dyslexic people with various personal and demographical characteristics.

Other interesting point to study was the dyslexic people's employment choice and success. In our study, we asked the participants how satisfied they are with their profession and how successful they are in their career (research question 2). Although no statistical differences were observed between dyslexics, non-dyslexics and suspected dyslexics, there was a tendency for people with dyslexia to show higher rates of satisfaction and perception of success in comparison to the other two groups. This finding suggests that within the dyslexic population, there are some individuals who overcome the negative educational and social experiences that accompany dyslexia overtime and they feel professional competence and satisfaction. A possible reason is that they develop successful compensated strategies for their difficulties, they

choose careers that appeal to their own interests and motivation or they are able to accept and positively reframe their dyslexia (Fink, 1995; Shaywitz et al., 2020).

The present study aimed to explore how demographic characteristics such as sex, education level etc. affect the positive traits and character strengths of the dyslexic individuals (research question 3). Comparisons were made between dyslexic and non-dyslexic participants. The statistically significant results are limited and concern the variable of creativity. More specifically, level of education seems to correlate with creativity, because dyslexic people with postgraduate qualifications report greater levels of creativity compared to non-dyslexic counterparts. This finding is not unexpected because adults who have achieved high academic skills have many opportunities for creative work and they also show independence, motivation and intellectual challenges. Similarly, regarding the type of job chosen by dyslexic adults, freelancers with dyslexia have been found to report higher levels of creativity in comparison to freelancers of typical development. The trends of our study partially support the idea that there is a prevalence of dyslexics in creative arts and entrepreneurship (Alexander-Passe, 2015; Logan, 2009).

Finally, an attempt was made to see if learning status can predict and to what extent character strengths, flourishing and resilience (according to the 4th research question). Two models were formed which explain a small percentage of the dependent variables, a percentage not more than 5. In addition, only social intelligence had a statistically significant contribution to the first model, showing a negative correlation with suspected dyslexia. Furthermore, flourishing and resilience are predicted to a very low extent by the learning status of the participants. The only statistically significant contribution to the second model was mental flourishing which correlated negatively with the suspicion of dyslexia. This finding underlines the need for researching in depth the subgroup of population who shows several signs of dyslexia but are not formally diagnosed as dyslexic. Moreover, adults who may have dyslexia, but have never received a diagnosis, form their identity on the basis of their unexplained difficulties feeling negative and frustrated. Receiving a diagnosis may be a positive experience in helping them to understand why they were struggling (Bampalou et al., 2020; Ingesson, 2007; Knight & Krick, 2021).

The current study attempted to shed light on a diversity of strengths in dyslexia, although the associations found didn't lead us to conclusive evidence. Looking back to the results, we have managed to make a small contribution to the understanding of the beneficial traits of dyslexia in a Greek sample. In addition, this research tries to merge positive dyslexia with positive psychology for the benefit of people with dyslexia and their well-being, supporting up to a point the conceptual model of Kannangara (2015) 'How to move from Languishing Dyslexia to Thriving Dyslexia'.

Conclusion

The advantage of having literature that attempts to highlight the virtues of dyslexia is that it offers a basis upon which to develop. Although the present research doesn't come to robust differences in strengths, resilience and flourishing of dyslexic adults in comparison to the other groups, this may be explained as a result of the Greek educational system and society which have a narrowly viewing and stereotypic perception of dyslexia as a disability and they do not recognize the dyslexic talents. However, the present study highlights the heterogeneity of individual characteristics of dyslexics, suspected dyslexics and typical adults suggesting that the recognition of the positive characteristics will allow adults with dyslexia to maximize the utilization of their skill-set, and enhance their life and job satisfaction. Adults in our sample, who have signs of dyslexia but they lack a formal diagnosis, may be faced with more challenges to address in order to form their self-image and develop coping strategies.

Recommendations

The changing world of education and work requires a transformative shift for dyslexia from 'disorder' to 'advantage'. Therefore, for dyslexic people of any age, discovering skills and pursuing occupations where these strengths are appreciated will show to be an effective adaptive strategy (Kannangara, 2015). Focusing on strengths, but not ignoring the challenges and creating a more inclusive environment can greatly contribute to building dyslexic confidence and enable dyslexic individuals to reach their full potential in both education and employment (Ernst & Young, 2018, p. 38). Our findings provide significant implications for the use of strengths-based interventions in the fields of education and career counselling. It would be interesting to look more carefully into the relations of personal and professional characteristics of successful or highly achieving adults with dyslexia through well-designed quantitative and qualitative studies. There is a need for more research in Greek adult population with dyslexia and other specific learning difficulties. Further studies using the well-validated full version of the VIA-IS inventory with adults and graduates with dyslexia will show the signature strengths of people with dyslexia and how to build upon them to cope with their life and career.

Limitations

The study is subject to few inherent limitations. The first is the fact that the sample of dyslexic participants was quite small in comparison to the other two samples (suspected dyslexics and non-dyslexics). This poses questions about the generalizability and relevance of the results obtained. A larger sample of adults with dyslexia may give the chance to obtain statistically significant results with reference to the second and third research questions.

The second limitation concerned the research tool which was a relatively short self-report questionnaire completed on line because of the COVID-19 restricted conditions. Semi-structured interviews together with the questionnaire would further explore the profiles of the participants and gain detailed descriptions and sense-making of work success and personalized coping strategies.

The third limitation was that the screening tool *The Revised ADO Checklist* was not standardized in a Greek sample, which should make up cautious about the formation of the group of adults suspected of dyslexia. Unfortunately, there was no such tool in Greek to use instead of the former.

To sum up, the adoption of variables of positive psychology and positive dyslexia in the present study gives the chance to move from the dominant 'lack' approach to dyslexia and recognize the diversity of skills that characterize it. People with specific learning difficulties may be able to successfully manage their academic and job opportunities with the help of effective early screening procedures and suitable intervention programs.

Authorship Contribution Statement

Stampoltzis: Conceptualization, data analysis/interpretation, writing, editing/reviewing. Paradisi: Design, data acquisition, data analysis/interpretation, drafting manuscript. Theodosakis: Conceptualisation, design, critical revision of manuscript, supervision.

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