Working with Students with Special Educational Needs and Predictors of Burnout. The Role of ICTs.

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Abstract—The purpose of this study was to examine the burnout dimensions of professionals working with students with special educational needs and the role played by their personal traits in the prevalence of the syndrome. To examine this objective a sample of Greek teachers was selected. The data was collected using the online form of Maslach Burnout Inventory. The results of this research showed that the main prognostic factors of the syndrome in each dimension are the total previous service with students with special educational needs, the specialty, as well as, the age of the sample.

Keywords—burnout, predictor`s factors, special education settings

1 Special education teachers' professional burnout

In recent decades, researchers examining special education teacher burnout have focused on the extent to which mainstream and special education teachers experience the syndrome [1–4]. Many special education teachers do not feel they are supported to the extent they desire, nor do they have sufficient resources to enhance their teaching, which leads to overload and burnout [5]. They devote part of their valuable time to bureaucratic procedures and secondary tasks and unwittingly neglect their teaching obligations [6].

Burnout has been found to be directly related to the stress people experience in both their professional and personal lives [7–10]. Nowadays, more and more researchers claim that the main source of S.E. teachers' stress is either the lack of material support for special education and training or their high expectations for equal and inclusive education as well the differences in intervention plans [11,12].

Furthermore, teachers are increasingly stressed when they realize the lack of homogeneity in a school class and the difficulties that arise in their attempt to respond to the learning and psychosocial needs of their students. Sometimes they become frustrated, especially when they realize that their initial expectations are not being met to the extent they desired [13–16]. In addition, younger special education teachers seem to have an increased risk of manifesting the syndrome, especially if they work in settings

attended by children with serious behavioral problems. Research has also shown that the teachers' demographics are related to some extent to the burnout syndrome in both mainstream and special education. The appearance and prevalence of the phenomenon are also affected by personal factors concerning mental endurance towards students who need help and the fulfillment or non-fulfillment of the goals and expectations initially set [17,18]. At the same time, the frustration experienced by special education teachers when they feel that a potential failure of their efforts in the S.E. classroom may create a wrong perception of their work in the society can also be a decisive factor for the syndrome to appear [19,20].

Finally, many researchers have found that reduced financial provision and the lack of appropriate curricula that could support their work play a key role in the prevalence of the burnout syndrome among S.E. teachers [21–24].

2 Method

The purpose of this study was to investigate the predictors of the three dimensions of burnout, emotional exhaustion, personal accomplishment, and depersonalization for professionals in special education settings. 200 professionals working with students with special educational needs took part in the survey. Participants were given the online form of the Maslach Burnout Inventory – Educators Survey (M.B.I. – E.S.) [25–27] to measure the three dimensions of burnout. Furthermore, they were given a questionnaire to collect their demographic data (Table 1).

Table 1. Demographic characteristics

	(N) 202	**(%)**
Gender		
men	32	15.8%
women	170	84.2%
Age		
22–29 years old	58	28.7%
30–35 years old	70	34.7%
36–40 years old	27	13.4%
41–50 years old	25	12.4%
51–60 years old	18	8.9%
61 years old and above	4	2%
Marital status		
Marrieds	98	48.5%
Singles	104	51.5%
Educational level		
Degree/Special education training	76	37.6%
Master Degree/Phd	126	62.3%

(Continued)

Table 1. Demographic characteristics *(Continued)*

	(N) 202	(%)
Specialty		
Primary Education		
Kindergarten teacher	17	8.41%
Main stream School Teacher	96	47.5%
Special Education Teacher	43	21.3%
Secondary education		
Language teacher	21	10.39%
Positive Science	14	6.9%
Other (physical education teacher/ foreign language teacher)	11	5.44%
School settings		
Special Education School	38	18.8%
Main Stream School	113	55.9%
Inclusion classes	10	5%
Parallel support	41	20.3%
Previous Educational service		
0–5 years	70	34.7%
6–10 years	51	25.2%
11–20 years	47	23.3%
21–30 years	26	12.9%
31 years and above	8	4%
Years of experience in Special Education Schools		
0–5 years	92	45.5%
6–10 years	48	23.8%
11–20 years	37	18.3%
21–30 years	20	9.9%
31 years and above	5	2.5%

3 Research results

3.1 Predictors of the three burnout dimensions

Multiple linear regression analysis was used to model the relationship between burnout factors and the independent variables. All independent variables were entered into the equation at the same time (enter method). The results are merely indicative, as the exploratory variables were highly correlated with each other suggesting that the multicollinearity assumption was violated (VIF > 4 and tolerance < 0.25 indicate a violation of this condition). It is worth noting that the ordinal variables (i.e. age, total years of service, years of service in special needs settings and school setting) were conventionally used as numerical continuous variables in order to avoid creating many dummy variables and making the results difficult to interpret, as well as to avoid reducing the model's statistical power.

A multiple regression was run to predict emotional exhaustion from age, total years of service, years of service in S.E. settings and school setting, for which 3 dummy variables were created (reference group: special school). The analysis showed that only "years of service" in special education settings was a positive significant predictor of the probability of teachers' exhibiting emotional exhaustion, $F(6,195) = 3.43$, $p < 0.01$, $R^2 = 0.1$, Adjusted $R^2 = 0.07$. The model indicated that any increase in "years of service" in special education settings would lead to higher levels of emotional exhaustion,

B = 3.86, 95% CI = 1.01 – 6.7 increasing the probability of teachers' showing higher emotional exhaustion by 10% (Table 2).

Table 2. Predictor factors for emotional exhaustion

Variable	B [95%CI]	B	T
Age	0.23 [–2.26 – 2.73]	0.03	0.18^{NS}
Mainstream School Inclusion Classes Parallel Support	2.88 [–1.48 – 7.32] –3.46 [–11.34 – 4.42] –2.82 [–7.92 – 2.29]	0.12 –0.07 –0.1	1.3^{NS} $–0.87^{NS}$ $–1.09^{NS}$
Total Service	–2.42 [–6.05 – 1.22]	–0.23	$–1.32^{NS}$
Special Education Service	3.86 [1.01 – 6.7]	0.36	2.67*

Note: *Statistical significant result $p < 0.01$, in the working setting, reference group special education school.

Regarding Depersonalization, the predictor variables of the model were age, total years of service, years of service in special needs settings, school setting, for which 3 dummy variables were created (reference group: special school), and specialty for which 5 dummy variables were created (reference group: special education teacher). The analysis showed that the model was a statistically significant predictor of depersonalization: $F(11,188) = 3.62$, $p < 0.01$ and explained 17.5% of its variability ($R^2 = 0.175$, Adjusted $R^2 = 0.13$). The predictor variable "other" specialization was found to have a statistically significant correlation with depersonalization: $\beta = –0.2$, $t = –2.44$, $p < 0.05$, with teachers' belonging to this category having lower levels of depersonalization than S.E. teachers: B = –5.68, 95%CI = –10.28 – 1.08. It is worth noting that "years of experience in special needs settings" and "working in a mainstream school" were marginally found to have a statistically non-significant correlation with depersonalization: $\beta = 0.24$, $t = 1.79$, $p = 0.076$ for "years of experience in special needs settings" and $\beta = 0.21$, $t = 1.73$, $p = 0.086$ for "years of experience in a mainstream school". Longer length of time working with S.E.N. students was found to lead to greater levels of depersonalization: B = 1.44, 95%CI = –0.15 – 3.02, while those teachers employed in mainstream schools were found to have higher depersonalization than those employed in special needs settings: B = 2.7, 95%CI = –0.39 – 5.85 (Table 3).

Table 3. Predictor factors for depersonalization

Variable	B [95%CI]	B	t
Age	0.6	0.12	0.79
Mainstream School Inclusion classes Parallel Support	2.73 –3.26 –0.59	0.21 –0.11 –0.04	1.73 –1.37 –0.37
Teacher Kindergarten Teacher Language Teacher Positive Science Other	0.6 0.03 1.78 –0.16 5.68	0.05 0.001 0.09 –0.01 –0.2	0.41 0.01 0.9 –0.07 2.43*
Total Service	–1.26	–0.22	–1.21
Special Education Service	1.44	0.24	1.79

Note: *Statistical significant result $p < 0.05$, in working settings reference group special education school, while in specialty special education teacher.

Regarding Personal accomplishment, the predictor variables of the model were age, total years of service, years of service in special needs settings, school setting, for which 3 dummy variables were created (reference group: special school), and specialty for which 5 dummy variables were created (reference group: special education teacher). The multiple regression analysis showed that this model statistically significantly predicted personal accomplishment, $F(11,188) = 3.14$, $p < 0.01$, $R^2 = 0.155$, Adjusted $R^2 = 0.11$ and explained 15.5% of the variability. Of the predictor variables, age, length of total service and length of service in special needs settings were found to maintain a statistically significant association with personal accomplishment: $\beta = -0.22$, $t = -2.07$, $p < 0.05$ for age, $\beta = 0.47$, $t = 2.6$, $p < 0.05$ for length of total service and $\beta = -0.38$, $t = -2.83$, $p < 0.01$ for length of service in special needs settings. In particular, any increase in age leads to a decrease in personal accomplishment: B = –1.6, 95% CI = –3.12 – –0.08, as does length of service in special needs settings: B = –2.34, 95% CI = –3.98 – –0.71. Conversely, any increase in overall length of service leads to higher levels of personal accomplishment: B = 2.8, 95%CI = –0.68 – 4.93 (Table 4).

Table 4. Predictor factors for personal accomplishment

Variable	B [95%CI]	B	t
Age	–1.6 [–3.12 – –0.07]	–0.32	–2.07*
Mainstream school	–2.09 [–5.3 – 1.13]	–0.16	–1.28
Inclusion classee	–0.89 [–5.71 – 3.93]	–0.03	–0.37
Parallel Support	–0.63 [–3.91 – 2.65]	–0.04	–0.38
Teacher	–1.6 [–4.61 – 1.41]	–0.12	–1.05
Kindergarten teacher	–1.65 [–5.87 – 2.58]	–0.07	–0.77
Language Teacher	–1.08 [–5.11 – 2.96]	–0.05	–0.53
Positive Science	–2.6 [–7.27 – 2.07]	–0.1	–1.1
Other	2.08 [–2.67 – 6.82]	0.07	0.86
Total Service	2.8 [0.68 – 4.93]	0.47	2.6*
Special Education Service	–2.34 [–3.98 – –0.71]	–0.38	–2.83**

Note: *Statistical significant result $p < 0.05$, **statistical significant result $p < 0.01$, in the working setting group references special education school, while in specialty special education teacher.

4 Conclusion

Concluding we underline the importance of the digital technologies in the special education domain and anti-burnout effects, which are very productive and successful, facilitates and improves the assessment, the intervention and the antistress educational procedures via Mobiles which brings educational activities everywhere [34–39], various ICTs applications which are the core supporters of education [40–68], AI, STEM & ROBOTICS which raise educational procedures into new levers of performance [69–77], and games which transforms the education in a very antistress, friendly and enjoyable interaction [78–82]. Additionally, the enhancement and combination of ICTs with theories and models of metacognition, mindfulness, meditation, and emotional intelligence cultivation [83–109] as well as with environmental factors and nutrition [30–33], accelerates and improves more over the educational practices and results,

especially in special education domain and its practices like assessment and intervention for burnout prediction and prevention.

In this research, we examined the predictors of the three dimensions of burnout in professionals working with students with special educational needs. Investigating the predictors of each dimension, it emerged that the length of experience with special education needs students was the only predictor of burnout, with the "veteran" teachers being more prone to burnout. Regarding depersonalization, physical education teacher and foreign language teachers were found to have lower levels of depersonalization than special education teachers. In addition, no statistically significant correlation was found between depersonalization and school setting as well as years of work with special education needs students. Finally, the multiple regression analysis showed that age and previous experience with special education needs students were predictors of low personal accomplishment. It seems that younger teachers are more motivated and enthusiastic as compared to older teachers. Furthermore, previous experience in special education settings seems to negatively impact their personal accomplishment as compared to overall experience in the profession.

In conclusion, teachers were found to experience emotional exhaustion at a high rate, a finding that makes it imperative for teachers and other educational stakeholders to deal with the syndrome. Special education teachers and especially those who have been working in this field for a long time are a priority group for planning and implementing appropriate interventions. Combined interventions, adopting both individual and organizational strategies should be preferred, as they appear to have the greatest effectiveness over time [28,29]. The socio-demographic characteristics of the participants appear to have been of minor importance in the present study. However, the role of age in special education. teachers' burnout requires the researchers' attention in future studies.

5 References

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