



Research article

РАЗЛИЧИЯ В ЕМОЦИОНАЛНАТА ИНТЕЛИГЕНТНОСТ, СТИЛОВЕТЕ НА УЧЕНЕ И СПОСОБНОСТТА ЗА ФОРМИРАНЕ НА СЛОЖНИ АНАЛОГИИ СПОРЕД ПОЛА И ВЪЗРАСТТА ПРИ УЧЕНИЦИ (14 -17 Г.)

DIFFERENCES IN EMOTIONAL INTELLIGENCE, LEARNING STYLES AND ABILITY TO FORM COMPLEX ANALOGIES BY GENDER AND AGE IN STUDENTS (14 -17 YEARS)

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Резюме

Емоционалната интелигентност е важен фактор за възпитанието и образованието на децата и възможността сами да управляват своите чувства и емоции, като отделят внимание на чувствата и емоциите на другите. Тези умения могат да започнат да ги изучават на всяка възраст. Развиването на емоционалната интелигентност у учениците може да улесни работата на учителя, но и да даде необходимата предпоставка те да се развиват като ефективни, адаптивни личности.

Уменията за учене са важни, за представянето на учениците по всеки един предмет и за създаването на позитивна обучителна среда, но те също осигуряват на учениците средство за учене през целия живот, които помагат за успешното полагане на изпитите и решаването на възникналите задачи.

Чрез сложните аналогии учениците притежават абстрактно и логично мислене и придобиват способност да правят разлики между факти и мнения, оценки и заключения в процеса на възприемане на информация, да се прилагат познанията си.

В този контекст настоящата статия е посветена на половите и възрастовите различия в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии. Данните за изследването са събрани с помощта на въпросници за изследване на емоционалната интелигентност и въпросници за установяване стила на учене според Хъни и Мъмфорд и по REID и с Методика „сложни аналогии. Целта е да се изследват различията в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии при ученици според пола и възрастта им. Получените резултати показват, че се установяват значими полови различия в стиловете им на учене (тактилен и размишляващ), както и в емоционалната им интелигентност.

Ключови думи: емоционална интелигентност, стилове на учене, сложни аналогии

Summary

Emotional intelligence is an important factor in the upbringing and education of children and their ability to manage their own feelings and emotions by paying attention to the feelings and emotions of others. These skills can start learning them at any age. Developing emotional intelligence in students can not only make the teacher's job easier, but also provide the necessary prerequisite for them to develop as effective, adaptable individuals.

Study skills are important for students to perform in any subject and to create a positive learning environment, but they also provide students with a lifelong learning tool that helps them to pass exams and solve problems as they arise.

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Through complex analogies, students possess abstract and logical thinking skills and acquire the ability to distinguish between facts and opinions, make judgments and inferences in the process of perceiving information, and apply their knowledge.

In this context, the present paper focuses on gender and age differences in emotional intelligence, learning styles, and the ability to form complex analogies. Data for the study were collected using Emotional Intelligence Research Questionnaires and Learning Style Identification Questionnaires according to Haney and Mumford and REID and with Complex Analogies Methodology. The aim was to investigate differences in emotional intelligence, learning styles and the ability to form complex analogies in students according to their gender and age. The results showed that significant gender differences were found in their learning styles (tactile and reflective) as well as in their emotional intelligence.

Keywords: *emotional intelligence, learning styles, complex analogies*

Въведение

Емоциите са важен фактор за регулацията на познавателните процеси. Способността на детето за владеене на своите чувства се развива и усъвършенства от година на година. Емоционалната интелигентност е едно от условията, което определя непреднамереното внимание и запомняне. Емоционалната интелигентност като психичен конструкт е обект на изследване от 90-те години до днес. А психосоциологът Монсеф Гитуни разглежда емоционалната интелигентност като реално познание в контекста на човешката идентичност. Според него всички емоции са призиви за действие, еволюционно заложен в човека. В този контекст този тип интелигентност може да бъде разглеждана като стратегия за справяне.

Съвременният свят е свят на промяна, която като част от еволюционните процеси е неизбежна. В такива условия уменията за учене се формират у децата още преди раждането. Развитите умения за учене подобряват представянето на учениците по всеки един предмет и помагат за създаването на позитивна обучителна среда. Те осигуряват на учениците инструменти за учене през целия живот, които подпомагат за успешното полагане на всякакъв вид изпити и тестове. Тези умения са емпирично различни от общата интелигентност и могат да компенсират дефицит в общата грамотност или предварителни познания по дадена тема при решаване на проблеми.

Ученето е умствена дейност, чрез която човек разбира смисъла на това, което му се обяснява и запаметява нови асоциативни връзки. Но следва да се разбира, че учителят играе основна роля при формирането на уменията, необходими на учениците да се справят с предизвикателствата на живота. Той трябва да обучава в съвременната образователна система, прилагайки различни възпитателни методи и похвати. Чрез усвояването на способността за формиране на сложни аналогии учениците придобиват способност да правят разлики между факти и мнения, оценки и заключения в процеса на възприемане на информация, да се прилагат познания при решаването на нови и различни от обичайните проблеми.

През XXI век хората трябва да притежават развити умения за мислене, умения за учене, за да могат да решават проблемите в съвременния технологичен свят. Те трябва да знаят как да използват собствените знания и умения.

Методология

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Цел на изследването: Да се изследват различията в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии според пола и възрастта на изследваните ученици.

Задачи:

- Да се опишат социодемографските характеристики на изследваните лица;
- Да се анализират различията в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии според пола и възрастта на изследваните ученици.

Хипотеза: Допуска се, че ще се установят статистически значими полови и възрастови различия в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии според пола и възрастта при ученици (14-17 г.).

Изследвани лица

Извадката съставлява 140 ученици от български училища на възраст 14 – 17 г. Данните за изследването са събрани с помощта на въпросници за изследване на емоционалната интелигентност (проф. Стоянова) и въпросници за установяване стила на учене според Хъни и Мъмфорд и по REID и с Методика „сложни аналогии“.

Изчислената стойност на Алфа на Кронбах при настоящата извадка за всяка една от скалите на двата въпросници е над .7, което потвърждава надеждността на приложените инструменти.

Използвани статистически методи

Получените данни са обработени в SPSS – версия 19, като са използвани следните методи /анализи: описателна статистика, честотен анализ и t-test за независими извадки.

Резултати

Следва процентно разпределение на изследваните лица според класа, който учат.

Таблица 1. Разпределение на изследваните лица според класа им

Клас	Честота	Процент	Кумулативен процент
8	44	31.4	31.4
9	42	30.0	61.4
10	54	38.6	100.0
Общ брой лица	140	100.0	

Видно от представеното разпределение 31.4% от изследваните лица са от 8 клас, 30% са ученици от 9 клас, 38.6% - 10 клас

Таблица 2. Разпределение на изследваните лица според пола

Пол	Честота	Процент	Кумулативен процент
Момиче	82	58.6	58.6
Момче	58	41.4	100.0
Общ брой лица	140	100.0	

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Видно от таблица 2 по-голям е делът на изследваните момичета (58.6%), докато момчетата съставляват 41.4%.

Таблица 3. Описателни статистики на възрастта на изследваните лица

	М	SD	Аси метрия	Ек сцес	Ми нимална стойност	Ма ксимална стойност
Възраст (години)	15. 28	0.998	0.05 8	- 0.979	13. 00	17.0 0

Видно от таблица 3 представеното разпределение с данни приблизително съответства на гаусовото. Изследваните лица са на възраст между 13 – 17 год., средната възраст на изследваните лица е 15 год.

Таблица 4. Описателни статистики на резултатите на изследваните лица от психологичните въпросници (N= 140)

	М	SD	Аси метрия	Е ксцес	Ми нимална стойност	Ма ксимална стойност
Активен стил	10 .94	2.99	- 0.032	- 0.441	4.0 0	18.0 0
Размишляващ стил	13 .32	3.28	- 0.116	- 0.706	6.0 0	20.0 0
Теоретезиращ стил	11 .44	3.22	0.2 34	- 0.516	5.0 0	19.0 0
Прагматичен стил	12 .65	2.95	- 0.133	- 0.246	4.0 0	19.0 0
Споделяне на емоции и емпатия	22 .42	4.02	- 0.569	0 .336	10. 00	30.0 0
Мотивация за преодоляване на трудности и оптимизъм	31 .55	4.40	- 0.712	0 .370	18. 00	39.0 0
Разпознаване на невербалната експресия на емоциите у другите хора	17 .35	3.15	0.1 02	0 .309	8.0 0	25.0 0
Разпознаване на своите емоции и самоконтрол	14 .97	2.55	- 0.541	- 0.204	9.0 0	20.0 0
Емоционална интелигентност (общ бал)	12 2.26	13.45	- 0.573	0 .194	84. 00	152. 00
Сложни аналогии	5. 26	3.30 4	1.3 32	1 .549	0	16

Видно от Таблица 4 представените разпределения с данни приблизително съответстват на гаусовото. Прави впечатление, че стойностите на асиметрия и ексцес надвишават единица, но все пак са под две, както и извадката е с обем над 100 изследвани лица, което дава основание да се приложат параметрични методи за анализ на събраните данни.

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Следват резултати от t- test за две независими извадки.

Таблица 5. Различия в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии според пола на изследваните лица

	Пол	N	M	SD	t	df	p
Активен стил	Момиче	82	11.32	2.689	1.771	138	.079
	Момче	58	10.41	3.335			
Размишляващ стил	Момиче	82	13.80	3.187	2.064	138	.041
	Момче	58	12.66	3.327			
Теоретезиращ стил	Момиче	82	11.26	3.026	0.815	138	.417
	Момче	58	11.71	3.489			
Прагматичен стил	Момиче	82	12.65	2.852	0.017	138	.986
	Момче	58	12.66	3.126			
Споделяне на емоции и емпатия	Момиче	82	23.51	3.422	3.989	138	.000
	Момче	58	20.90	4.327			
Мотивация за преодоляване на трудности и оптимизъм	Момиче	82	32.35	3.976	2.597	138	.010
	Момче	58	30.43	4.754			
Разпознаване на невербалната експресия на емоциите у другите хора	Момиче	82	17.82	2.864	2.107	138	.037
	Момче	58	16.69	3.450			
Разпознаване на своите емоции и самоконтрол	Момиче	82	14.80	2.603	0.956	138	.341
	Момче	58	15.22	2.485			
Емоционална интелигентност (общ бал)	Момиче	82	124.96	11.847	2.895	138	.004
	Момче	58	118.45	14.731			
Сложни аналогии	Момиче	82	5.61	3.442	1.477	138	.142
	Момче	58	4.78	3.061			
Групово учене	Момиче	82	14.82	4.730	0.297	138	.767
	Момче	58	14.57	5.079			
Индивидуално учене	Момиче	82	17.44	4.134	0.211	138	.833
	Момче	58	17.28	4.976			
Визуален стил на учене	Момиче	82	14.82	4.670	0.400	138	.690
	Момче	58	14.50	4.543			

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Слухов стил на учене	Момиче	82	17.83	4.160	0.710	138	.479
	Момче	58	17.31	4.394			
Тактилен стил на учене	Момиче	82	16.43	4.603	2.542	138	.012
	Момче	58	14.52	4.036			
Кинестетичен стил на учене	Момиче	82	18.56	4.122	1.632	138	.105
	Момче	58	17.43	3.907			

Видно от представената таблицата по-горе се установяват статистически значими различия ($t_{(138)}=2.064$, $p=.041$) между изследваните момчета и момичета по отношение на прилагането на *размишляващ стил на учене*. По-конкретно момчетата ($M=13.80$, $SD=3.187$) имат по-изразени предпочитания към *размишляващия стил на учене* в сравнение с момчетата ($M=12.66$, $SD=3.327$). Резултатът означава, че момчетата на възраст 14-17 г. предпочитат в по-голяма степен сравнение с момчетата да събират информация, да проучват нещата из детайли, да правят преглед на това, което са научили.

По отношение на останалите (*активен, теоретизиращ и прагматичен*) *стилове за учене по Мъмфорд* не се установяват статистически значими полови различия при изследваните лица.

Видно от представената таблица по-горе се установяват статистически значими различия ($t_{(138)}=3.989$, $p<.001$) между изследваните момчета и момичета по отношение способността им за *споделяне на емоции и емпатия*. Изследваните момичета ($M=23.51$, $SD=3.422$) в по-голяма степен са *способни да споделят емоции и емпатия* в сравнение с момчетата ($M=20.90$, $SD=4.327$).

Установяват се и статистически значими различия ($t=2.597$, $p=.010$) между изследваните момчета и момичета по отношение *мотивацията им за преодоляване на трудности и оптимизъм*. Изследваните момичета са ($M=32.35$, $SD=3.976$) в по-голяма степен са *мотивирани за преодоляване на трудности и оптимизъм* в сравнение с момчетата ($M=30.43$, $SD=4.754$).

От представената таблицата по-горе се установяват статистически значими различия ($t_{(138)}=2.107$, $p=.037$) между изследваните момчета и момичета по отношение способността им за *разпознаване на невербалната експресия на емоциите у другите хора*. Изследваните момичета ($M=17.82$, $SD=2.864$) в по-голяма степен са *способни да разпознават невербалната експресия на емоциите у другите хора* в сравнение с момчетата ($M=16.69$, $SD=3.450$).

Установяват се и статистически значими различия ($t_{(138)}=2.895$, $p<.004$) между изследваните момчета и момичета по отношение *емоционална интелигентност (общ бал)*. Изследваните момичета са ($M=124.96$, $SD=11.847$) в по-голяма степен притежават *емоционална интелигентност (общ бал)* в сравнение с момчетата ($M=118.45$, $SD=14.731$).

От представената таблицата по-горе се установяват и статистически значими различия ($t_{(138)}=2.542$, $p=.012$) между изследваните момчета и момичета по отношение *тактилен стил на учене*. Изследваните момичета ($M=16.43$, $SD=4.603$) в по-голяма степен притежават *тактилен стил на учене* в сравнение с момчетата ($M=14.52$, $SD=4.036$). Резултатът означава, че момчетата на възраст 14-17 г. предпочитат в по-голяма степен сравнение с момчетата да съставят паметни записки, да използват материални макети, да подготвят опити и експерименти в лабораторни условия.

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От проведен анализ на влиянието на възрастта върху изследваните характеристики, не се установява статистически значими възрастови различия по отношение на стиловете на учене и емоционалната интелигентност при изследваните ученици ($p > .05$).

Дискусия

Настоящата статия е посветена на половите и възрастовите различия в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии.

Получените резултати показват, че се установяват значими полови различия в стиловете на учене (тактилен и размишляващ), както и в емоционалната интелигентност.

Ограничения на изследването

Основно ограничение в проведеното изследване е фактът, че в извадката влизат ученици между 14 - 17 години, които учат в училища разположени в страната ни.

Заклучение

Настоящото изследване може да бъде от полза за психолозите, работещи с юноши на възраст 14 – 17 год., доколкото показва, че ще се установят статистически значими полови и възрастови различия в емоционалната интелигентност, стиловете на учене и способността за формиране на сложни аналогии според пола и възрастта на учениците, а от своя страна стиловете на учене са от съществено значение при прогнозирането на емоционалната интелигентност, а по този начин и на професионалната и личната реализация на учениците в обществото ни.

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Research article

FINANCIAL (IL)LITERACY OF GREEK TEENAGERS WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

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Abstract:

This study investigates the financial literacy of teenagers diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). While financial literacy among the general population has garnered significant attention in recent years, little research has focused on understanding the financial knowledge, skills, and behaviors of teenagers with ADHD. Drawing on existing literature in psychology, education, and finance, this study examines how ADHD may impact teenagers's financial literacy development and their ability to manage money effectively. Factors such as impulsivity, inattention, and executive functioning deficits associated with ADHD influence financial decision-making skills reducing financial knowledge, the abilities for planning, information retrieval and evaluation, numerical solving skills, etc. Additionally, the role of educational interventions in promoting financial literacy in this population is considered. By shedding light on the unique challenges and needs of teenagers with ADHD in the realm of financial literacy, this research aims to inform educators, parents, and policymakers about strategies to enhance financial education and support for this vulnerable group.

Keywords: Attention Deficit Hyperactivity Disorder (ADHD), education, financial (il)literacy, teenagers

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder affecting approximately 5.6% of teenagers worldwide, characterized by symptoms of impulsivity, hyperactivity, and inattention (Salari et al., 2023).

While ADHD has been extensively studied in relation to poorer academic performance (Henning et al., 2022; Polanczyk et al., 2012), social functioning (Shaw et al., 2012), quality of life (Danckaerts et al., 2010), and mental health outcomes (Polanczyk et al., 2012), relatively little attention has been given to its implications for financial literacy. Financial literacy, encompassing knowledge, skills, and attitudes related to managing money effectively, is increasingly recognized as a critical aspect of lifelong success and well-being (Badiggam, 2023). However, teenagers with ADHD may face unique challenges that impact their financial literacy development and financial decision-making abilities.

Understanding the intersection of ADHD and financial literacy is crucial for several reasons. First, individuals with ADHD often exhibit difficulties with impulse control, planning, and organization, which are essential components of effective financial management. These challenges may manifest in impulsive spending, difficulty budgeting, and a lack of foresight in financial decision-making. Second, the prevalence of ADHD suggests that a significant portion of the population may be at risk of experiencing financial difficulties due to underlying

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neurodevelopmental factors. Third, early interventions targeting financial literacy in teenagers with ADHD have the potential to mitigate adverse financial outcomes later in life and improve overall financial well-being.

Despite the potential significance of this issue, research on the financial literacy of teenagers with ADHD remains limited. Existing studies primarily focus on academic achievement and behavioral interventions (Henning et al., 2022; Polanczyk et al., 2012), overlooking the specific needs and challenges related to financial skills development in this population. Therefore, there is a critical gap in the literature that warrants further exploration.

This study aims to address this gap by examining the financial literacy of teenagers with ADHD. By investigating how ADHD symptoms influence financial knowledge, attitudes, and behaviors, this research seeks to identify potential areas of difficulty and inform the development of targeted interventions to improve financial outcomes for this vulnerable population. Through a comprehensive understanding of the relationship between ADHD and financial literacy, educators, parents, and policymakers can work together to implement effective strategies that promote financial competence and resilience in teenagers with ADHD.

ADHD (Attention Deficit Hyperactivity Disorder)

ADHD (Attention Deficit Hyperactivity Disorder) is a developmental disorder rooted in organic causes, profoundly impacting various facets of child's functioning and posing persistent challenges for the child, their family, and broader social circles (Kakouros & Maniadaki, 2006). Individuals with ADHD exhibit deviations from the norm in attention focus, impulse control, and sometimes motor activity, presenting difficulties across diverse contexts that can profoundly affect academic performance, professional endeavors, and socio-emotional development over time (Papageorgiou, 2005).

In the United States, a national parental survey conducted in 2016 revealed that six out of ten children diagnosed with ADHD also grappled with at least one additional mental, emotional, or behavioral disorder, such as anxiety, depression, autism spectrum disorder, or Tourette syndrome (Danielson et al., 2018). Despite its well-documented symptoms of attention deficit, impulsivity, and hyperactivity, ADHD often goes undiagnosed or misattributed to other coexisting conditions, resulting in inadequate treatment that fails to address the disorder comprehensively (Panhellenic Association of People with ADHD, 2020).

ADHD manifests in three primary subtypes: predominantly inattentive, predominantly hyperactive-impulsive, and combined type, each presenting distinct patterns of symptomatology (Epstein & Loren, 2013; Wilens & Spencer, 2010). The etiology of ADHD is complex and multifactorial, involving genetic predispositions, heritability, and environmental influences (American Psychiatric Association, 2013; Kakouros & Maniadaki, 2006; Papageorgiou, 2005).

Notably, there is a significant familial component to ADHD, with a child bearing a 25% likelihood of inheriting the disorder from a parent who also has ADHD, and siblings also facing heightened susceptibility (American Academy of Pediatrics, 2019).

Financial illiteracy

Financial illiteracy encompasses a range of definitions. According to the OECD, financial literacy entails consumers', investors', and businesses' grasp of financial concepts and products, along with their capacity to evaluate financial risks and opportunities to make informed decisions, seek relevant assistance, and take effective actions to enhance their economic well-being (OECD, 2005). Another perspective defines financial literacy as

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individuals' capability to comprehend, analyze, manage, and communicate about personal or business economic conditions affecting material well-being (Vitt, n.d). It also involves making economic choices, discussing economic issues, and planning for the future concerning economic decisions and events in the national or global economy (Lusardi & Mitchell, 2013; PRI - Policy Research Initiative, 2005).

The significance of financial literacy cannot be overstated, as it has the potential to elevate the standard of living (Lindsey-Taliefero et al., 2011). However, many individuals may fail to recognize or acknowledge their own financial illiteracy (Nofsinger, 2018). It is imperative for citizens and entrepreneurs to understand the necessity of comprehending financial matters, seeking financial education, and consulting accredited institutions for advice. Moreover, consumers should be cognizant of the ramifications of their actions and the contractual agreements they enter, enabling them to make informed and responsible decisions (Nofsinger, 2018).

Financial education should be practical rather than purely theoretical, especially for older consumers. Educational systems should tailor financial education to meet the diverse needs of consumers, which may vary based on factors such as age, income level, education level, family situation, attitudes, personal needs, interests, occupation, and more (Nofsinger, 2018). Consumers with lower incomes, in particular, often have limited access to information due to infrequent use of financial products, underscoring the critical need for financial education among this demographic.

Additionally, children and students require financial education, as proficiency in financial management and basic economic concepts is essential. A student's financial situation can impact their ability to complete their education and academic performance (Lyons, 2007).

Previous research conducted in Greece among adults with cognitive impairments revealed a negative influence of financial illiteracy on financial capacity (Giannouli & Tsolaki, 2021). Similarly, a study conducted in the Netherlands highlighted poor financial literacy among adults with ADHD, manifesting in various aspects of everyday financial knowledge and skills compared to adults without ADHD (Koerts et al., 2023). Another study in the USA found that adults diagnosed with ADHD during childhood had lower monthly incomes compared to their non-diagnosed peers, even if they no longer exhibited ADHD symptoms (Pelham et al., 2020).

Research methodology

The research carried out concerned high school students with ADHD and aimed to investigate the degree of illiteracy of the teenagers with ADHD.

The hypothesis of this study was that adolescents diagnosed with ADHD may have deficits in fundamental financial understanding. Financial literacy is critical to making wise monetary choices and achieving self-reliance. Therefore, the research aimed to ascertain whether teenagers had sufficient financial literacy to cope independently with finances. This study seeks to enhance the current understanding of the intersection between ADHD and financial literacy by providing valuable insights into the potential challenges facing this demographic group. Ultimately, it seeks to contribute valuable data that will enhance the existing body of knowledge about financial literacy and ADHD.

Research tool

The research methodology used a survey as the main instrument, which was administered to adolescents with ADHD who participated in the study. Particular attention was

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paid to the design and organization of the questionnaire structure, following established criteria for questionnaire design. This approach ensured that the research tool aligned with the findings from the literature review, while effectively addressing the research questions and objectives.

Based on the scientific literature, the domains tested for financial literacy were:

- **Planning:** Examined participants' propensity for budgeting and making deliberate spending decisions (Amagir et al., 2018; Taylor & Wagland, 2011; Totenhagen et al., 2015; Vieira, 2012) – measured with the questions «I plan what I spend my money on rather than spending somewhat spontaneously» (Prevett et al., 2020), “It is important to pay attention to the security of a website before making a transaction online (e.g. https sites, safety logo or certificate)” (OECD, 2022), “I set aside money for my goals” (Rojas-Vargas & Vega-Mendez, 2020);
- **Savings:** Evaluated individuals' habits regarding setting aside money for future needs (Amagir et al., 2018; Chen & Volpe, 2002; Furtuna, 2008; Lindsey-Taliefero et al., 2011; Lusardi, 2006; Refera et al., 2016; Taylor & Wagland, 2011; Totenhagen et al., 2015; Vieira, 2012) – measured with the question “I save some money I receive each month for a future need” (Vieira et al., 2020),
- **Lending and Credit:** Assessed understanding of interest rates and borrowing concepts (Chen & Volpe, 2002; Furtuna, 2008; Lindsey-Taliefero et al., 2011; Refera et al., 2016), credit (Amagir et al., 2018; Totenhagen et al., 2015) – measured with the question “You lend 25 euro to a friend one evening and he gives you 25 euro back the next day. How much interest has he paid on this loan?” (OECD, 2022)
- **Information Retrieval and Evaluation:** Investigated skills related to researching, utilizing, and scrutinizing financial information (Krechovská, 2015) – measured with the questions “Have you received education in subjects related to business, economics or finance as part of your school or university education?” (OECD, 2020), “Do you make day-to-day decisions about your own money?” (OECD, 2022), “I think that it is safe to shop online using public Wi-Fi networks (e.g., in cafés, airports, shopping malls)” (OECD, 2022), “When the inflation rate increases, the cost of living rises” (Vieira et al., 2020), “I compare prices when making a purchase” (Vieira et al., 2020), “I discuss with my family about how I spend our money” (Vieira et al., 2020),
- **Numerical Proficiency:** Tested ability to solve basic mathematical tasks related to financial scenarios (Krechovská, 2015) – measured with the question “Imagine that five friends are given a gift of 1,000E in total. If the friends have to share the money equally how much does each one get?” (OECD, 2022),
- **Legal Awareness:** Explored awareness of legal considerations when engaging in financial transactions (Krechovská, 2015) – measured with the question “I think it is important to read the terms and conditions when buying something online” (OECD, 2022).

Each domain was measured using specific questions tailored to assess corresponding skills and knowledge, as outlined in the literature.

Sample description

The sample consisted of 121 Greek teenagers with ADHD. Male teenagers predominated slightly (N = 80, 54.8%) compared to girls (N = 41, 36.9%).

Analyzing research data

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The statistical program SPSS 29.0 for Windows (Statistical Package for Social Sciences) was used in order to do the necessary processing and analysis of the research data obtained from the questionnaire (Halikias, Manolessou & Lalou, 2015). Descriptive statistics and chi-square analysis were applied.

Results

Application of chi-square analysis established that the differences between the number of participants who chose each different option of answer to each question were statistically significant for all questions in the study ($p < .001$).

Regarding lending, in the question "You lend 25 euros to a friend in the evening and he gives you 25 euros the next day. How much interest has he paid on this loan?" only 4 (3.3%) answered correctly, 11 (9.1%) gave a wrong answer while 106 (87%) answered "I don't know". These results indicated insufficient financial literacy of 96.7% of the studied teenagers with ADHD in the area of lending.

About finding, using and evaluating information, to the question "Have you received training in business, finance or economics as part of your schooling?" only 18 (14.9%) answered positively while 103 (85.1%) answered negatively; to the question "Do you make daily decisions about your own money?" 14 (11.6%) answered positively, 101 (83.5%) answered negatively and 6 (5%) answered "I don't know". Regarding the statement "When inflation rises, so does the cost of living", 4 (3.3%) answered that it was correct, 83 (68.6%) answered that it was incorrect, and 34 (28.1%) did not know what to answer. The majority of the studied Greek teenagers with ADHD consider safe to make online purchases using public Wi-Fi networks (70.3%). Only 12.4% of the studied Greek teenagers with ADHD compared prices when making a purchase. Only 9.9% of the studied Greek teenagers with ADHD discussed with their families about how they spend their money. These results indicated insufficient financial literacy of more than 80% of the studied teenagers with ADHD in the area of finding, using and evaluating information regarding finances (information retrieval and evaluation).

Regarding solving numerical problems as an aspect of financial literacy, to the question "Imagine that five friends are given a gift of 1,000 E in total. If the friends have to share the money equally, how much does each one get?", only 6 (5%) answered correctly, 11 (9%) answered incorrectly, while 104 (86%) answered "I don't know". This finding indicates that 95% of the studied Greek adolescents with ADHD should further develop their numeracy proficiency as an aspect of financial literacy.

Regarding saving, only 14 Greek adolescents with ADHD (11.6%) saved money every month suggesting saving as an underdeveloped aspect of financial literacy in Greek adolescents with ADHD.

Regarding planning, the majority of the studied Greek ADHD adolescents did not plan what they spent their money on ($N = 101$, 83.5%). Regarding whether it is considered important to pay attention to the security of a website before making an online transaction, only 28.9% answered positively ($N = 35$). Besides, 94.2% ($N = 114$) did not set aside money for their goals. These findings indicate that more than 80% of Greek teenagers with ADHD should develop further their planning as an aspect of financial literacy.

Regarding orientation in the legal system, the majority of the studied Greek teenagers with ADHD considered not important to read the terms and conditions when buying something online ($N = 91$, 75.2%), that signaled a need for further development of this aspect of their financial literacy.

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The results suggest that Greek adolescents with ADHD would benefit from additional emphasis on enhancing their knowledge about lending (96.7% out of them), developing their numeracy proficiency (95% out of them), planning within the realm of financial literacy, finding, using and evaluating information regarding finances (80% out of them), orientation in the legal system (75% out of them).

Discussion

The research findings support the hypothesis that adolescents with ADHD show deficits in fundamental financial knowledge. In the sample of Greek adolescents with ADHD, a notable majority demonstrated insufficient skills in evaluating information about the prices and safety of online shopping, seeking spending guidance from family members, and having a rudimentary understanding of the legal framework surrounding financial issues.

Greek adolescents with ADHD should undergo additional development in various aspects of financial literacy, including gaining knowledge in business, economics, or finance, exercising autonomy in money management decisions, understanding specific financial terminology like inflation or lending, and improving proficiency in solving numerical problems related to finances.

Greek adolescents diagnosed with ADHD stand to benefit from comprehensive improvements in their financial literacy skills. This entails not only acquiring foundational knowledge in subjects such as business, economics, and finance but also actively engaging in decision-making processes concerning their finances. Strengthening their autonomy in managing money will empower them to navigate financial situations effectively. Moreover, a deepened understanding of specific financial terms like inflation and lending will equip them with the necessary vocabulary to comprehend and discuss financial matters confidently. Additionally, enhancing their proficiency in solving numerical problems related to finances will enable them to analyze and address financial challenges with greater ease and efficiency. Overall, investing in the holistic development of these various aspects of financial literacy will equip Greek adolescents with ADHD with essential skills for navigating the complexities of the financial world and achieving greater financial independence and stability.

Conclusions

In conclusion, this study sheds light on the financial literacy of teenagers with Attention Deficit Hyperactivity Disorder (ADHD) and underscores the importance of addressing this critical aspect of their development. The findings reveal that teenagers with ADHD may face unique challenges in acquiring and applying financial knowledge, with implications for their long-term financial well-being. Specifically, deficits in planning, impulse control, and attention regulation associated with ADHD may hinder their ability to make informed financial decisions and manage money effectively.

Teenagers with ADHD encounter some obstacles in learning about financial concepts and principles. This could be due to factors such as reduced attention span, difficulty focusing on complex tasks, or challenges with memory retention.

Even if teenagers with ADHD are able to acquire financial knowledge, they may struggle with applying it effectively in real-world situations. Impulsivity and difficulties with executive functioning can make it challenging for them to plan and make sound financial decisions.

The challenges faced by teenagers with ADHD in acquiring and applying financial knowledge can have significant implications for their long-term financial well-being. Poor

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financial decision-making in childhood and adolescence may lead to difficulties managing finances as adults, potentially resulting in financial instability, debt, and other adverse outcomes.

Overall, this analysis underscores the importance of recognizing and addressing the unique challenges that teenagers with ADHD face in developing financial literacy skills. By understanding these challenges, educators, parents, and policymakers can implement targeted interventions to support the financial well-being of this population and mitigate potential long-term consequences. By incorporating strategies that accommodate their specific learning needs and provide structured support, educators, parents, and policymakers can help empower teenagers with ADHD to develop essential financial skills and foster greater independence in managing their finances.

Furthermore, the study underscores the importance of collaboration between various stakeholders, including healthcare professionals, educators, and financial literacy experts, in addressing the intersection of ADHD and financial literacy. By working together to identify and implement evidence-based interventions, we can better support the financial well-being of teenagers with ADHD and equip them with the skills they need to navigate the complexities of the modern financial landscape.

Overall, this research contributes to a deeper understanding of the challenges and opportunities related to financial literacy among teenagers with ADHD, laying the groundwork for future research and interventions aimed at promoting their financial competence and resilience.

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Research article

FINANCIAL LITERACY AMONG GREEK TEENAGERS

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Abstract:

Financial literacy is a mixture of knowledge, skills, abilities and experience that is acquired in the process of socialization, and it is necessary for coping with everyday situations in human life and as a part of specific occupations. A study among 136 Greek teenagers investigated their financial literacy by means of a survey including questions from the scientific literature regarding planning, savings, lending, information finding, using and evaluating, solving numerical tasks, and orientation in the legal system as some aspects of financial literacy. It was found that the studied Greek teenagers should develop mainly such components of financial literacy as savings, knowledge about some financial terms as interest, inflation, etc., independent decision-making regarding money, and solving numerical tasks that could be facilitated by further school training in the financial area.

Keywords: *education, financial (il)literacy, teenagers.*

Introduction

Financial illiteracy refers to the lack of understanding and skills about financial issues. Adolescents, as an age group in transition from childhood to adulthood, can be significantly affected by financial illiteracy. Adolescents often have not yet gained experience in financial activities and have not yet completed their education in financial matters. Moreover, education on financial issues may be neglected in schools. This can lead to a lack of awareness on topics such as managing a personal budget, understanding tax obligations, using credit cards, investing and other important financial issues.

To address financial illiteracy among adolescents, it is important to integrate financial education into educational programs. Schools and other educational institutions can provide information and resources to teach the basics of finance and build skills that will help adolescents in their daily lives and future financial well-being.

Theoretical framework

In recent years, the issue of financial literacy has gained prominence on the agendas of various entities, including businesses, government agencies, educators, community groups, organizations, and policymakers. Recognizing the importance of financial literacy extends beyond individual households and families; it also holds significance for entire communities. This is because individuals who are well-informed and financially literate tend to make more informed decisions for their families, thereby enhancing their financial security and overall

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well-being. Strong and secure families, in turn, play a crucial role in promoting local community economic development.

The concern regarding financial (il)literacy first surfaced during the stock market opening in 1999 in the USA and it was further highlighted after the subprime mortgage crisis in 2008 (Ackert & Deaves, 2010). Financial illiteracy is a concept that has been defined in various ways. According to the OECD, it involves the amalgamation of consumers', investors', and businesses' understanding of financial concepts and products, along with their ability to assess financial risks and opportunities. This enables them to make informed decisions, know where to seek relevant assistance, and take effective actions to improve their economic well-being (OECD, 2005).

Financial illiteracy, the lack of understanding and familiarity with financial matters can have serious consequences for individuals and society as a whole. People who are not financially literate may receive fewer opportunities for financial success. A lack of understanding of the basic principles of financial management can lead to debt problems, lost investment opportunities and generally lower levels of financial well-being.

Financial illiteracy leads to waste of financial information and misuse of private savings (Ackert & Deaves, 2010). People who do not understand the management of their personal budget and their financial obligations are more exposed to the risk of bankruptcy. Other people may not choose the right product that best meets their needs because they find it difficult to compare products (Lin, 2002). Lack of financial literacy can be a barrier to participation in the economy. People may not be able to understand and take advantage of economic opportunities or engage in economic activities that could benefit them.

People may not realize or admit their financial illiteracy (Nofsinger, 2018). Citizens and entrepreneurs should know that they need to understand financial issues, that they need financial education and that they need to seek advice from accredited institutions. At the same time, consumers should be aware of the consequences of their actions and the contractual agreements they sign in order to make informed responsible decisions (Nofsinger, 2018). Education in financial management and basic financial concepts is especially important. Students' economic status can affect their ability to complete an education degree and their academic performance (Lyons, 2007).

Addressing economic illiteracy is therefore important to promoting economic prosperity and stability at the individual and societal level.

Research methodology

The research carried out concerned high school students and aimed to investigate the degree of illiteracy of the teenagers.

The main assumption of the research was that teenagers did not have basic financial knowledge. Financial literacy leads to correct financial decision making and independence (Charitha, 2018). It is therefore important to investigate whether adolescents are financially literate and can stand independently in the financial domain and it was the objective of the study. The present research is hoped to contribute to the collection of important information, which will enrich the existing literature on financial illiteracy.

Research tool

A survey was chosen as the research tool, which was distributed to the adolescents. The design and organization of the structure took into account the basic criteria for questionnaire

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design, so that the questions would reflect the literature review on the one hand, and on the other hand, would respond to the research questions and serve the research objectives.

Based on the scientific literature, the domains tested for financial literacy were:

- planning (Amagir et al., 2018; Taylor & Wagland, 2011; Totenhagen et al. 2015; Vieira, 2012) – measured with the questions «I plan what I spend my money on rather than spending somewhat spontaneously» (Prevett et al., 2020), “It is important to pay attention to the security of a website before making a transaction online (e.g. https sites, safety logo or certificate)” (OECD, 2022), “I set aside money for my goals” (Rojas-Vargas & Vega-Mendez, 2020);
- savings (Amagir et al., 2018; Chen & Volpe, 1998; Furtuna, 2008; Lindsey-Taliefero et al., 2011; Lusardi, 2006; Refera et al., 2016; Taylor & Wagland, 2011; Totenhagen et al., 2015; Vieira, 2012) – measured with the question “I save some money I receive each month for a future need” (Vieira et al., 2020),
- lending (Chen & Volpe, 1998; Furtuna, 2008; Lindsey-Taliefero et al., 2011; Refera et al., 2016), credit (Amagir et al., 2018; Totenhagen et al., 2015) – measured with the question “You lend 25 euro to a friend one evening and he gives you 25 euro back the next day. How much interest has he paid on this loan?” (OECD, 2022)
- information finding, using and evaluating (Krechovská, 2015) – measured with the questions “Have you received education in subjects related to business, economics or finance as part of your school or university education?” (OECD, 2020), “Do you make day-to-day decisions about your own money?” (OECD, 2022), “I think that it is safe to shop online using public Wi-Fi networks (e.g., in cafés, airports, shopping malls)” (OECD, 2022), “When the inflation rate increases, the cost of living rises” (Vieira et al., 2020), “I compare prices when making a purchase” (Vieira et al., 2020), “I discuss with my family about how I spend our money” (Vieira et al., 2020),
- solving numerical tasks (Krechovská, 2015) – measured with the question “Imagine that five friends are given a gift of 1,000E in total. If the friends have to share the money equally how much does each one get?” (OECD, 2022)
- orientation in the legal system (Krechovská, 2015) – measured with the question “I think it is important to read the terms and conditions when buying something online” (OECD, 2022).

Sample description

The sample included 136 Greek teenagers attending general high school courses. Of them, 67 were male and 69 were female.

The process of analyzing research data

The statistical program SPSS 29.0 for Windows (Statistical Package for Social Sciences) was used in order to do the necessary processing and analysis of the research data obtained from the questionnaire (Halikias, Manolessou & Lalou, 2015). Descriptive statistics and chi-square analysis were applied.

Results

The statistical analysis and processing of the results led to very useful conclusions regarding the degree of illiteracy of adolescents. Chi-square analysis was applied, and it was established that the differences between the number of participants who chose each different

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option of answer to each question were statistically significant for all questions in the study ($p < .001$).

Regarding planning, the majority of the studied Greek teenagers planned what they spent their money on instead of spending somewhat spontaneously (69.9%), considered important to pay attention to a website's security before making an online transaction (93.4%), but did not set aside money for their goals (68.4%). These findings reveal that planning skills as a component of financial literacy should be further developed in Greek teenagers, especially in relation with the savings component of financial literacy.

Regarding savings, the most studied Greek teenagers did not save any money each month (58.5%) that indicated savings as a not enough developed aspect of financial literacy among Greek adolescents.

Regarding lending, to the question "You lend 25 euros to a friend one night and he gives you 25 euros the next day. How much interest has he paid on this loan?" 37 (27.2%) answered correctly, 25 (18.4%) gave the wrong answer while 74 (54.4%) answered "I don't know." Greek teenagers' financial literacy should be further developed in the area of knowledge about lending.

Regarding information finding, using and evaluating, to the question "Have you received training in business, finance or economics related subjects as part of your school education?" only 22 responded positively (16.2%) while 114 (83.8%) responded negatively. To the question "Do you make daily decisions about your own money?" 46 (33.8%) responded positively, 85 (62.5%) responded negatively, and 5 answered "I don't know" (3.7%). Regarding the sentence "When inflation increases, the cost-of-living increases", 49 (36%) responded that it was correct, 54 (39.7%) responded that it was wrong and 33 (24.3%) did not know what to answer. These aspects of financial literacy (training in business, finance or economics, independent decision making about own money, knowledge about some financial terms such as inflation) should be further developed in Greek teenagers. However, the majority of the studied Greek teenagers did not consider safe to make online purchases using public Wi-Fi networks (65.2%), discussed with their family how they spent their money (61.1%), and compared prices when they made a purchase (80.1%). The most Greek teenagers in the sample seemed to report satisfactory abilities for evaluating information as part of financial literacy.

Regarding solving numerical tasks as an aspect of financial literacy, to the question "Imagine that five friends are given a gift of 1,000E in total. If the friends have to share the money equally how much does everyone get?", 45 (33.1%) answered correctly, 47 (40.9%) answered incorrectly, while 44 (32.2%) answered "I don't know." The Greek teenagers should further develop their abilities for solving numerical tasks as an aspect of financial literacy.

Regarding orientation in the legal system, the majority of the studied Greek teenagers considered important to read the terms and conditions when buying something online (87.5%), that signaled a good base for further development of this aspect of their financial literacy.

Discussion

The hypothesis that teenagers did not have basic financial knowledge was partly supported by the research findings. The most Greek teenagers in the sample seemed to report satisfactory abilities for evaluating information regarding prices and security of online purchases, seeking advice how to spend from their family, as well as they had some basic orientation in the legal system as part of their financial literacy.

Savings was not enough developed aspect of financial literacy among Greek adolescents. The planning skills as a component of financial literacy should be further developed in Greek teenagers, especially in relation with the savings component of financial

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literacy. The aspects of financial literacy like training in business, finance or economics, independent decision making about own money, knowledge about some financial terms such as inflation or lending, solving numerical tasks should be further developed in Greek teenagers.

Conclusions

The survey captured the fact that teenagers nowadays are largely financially illiterate. Financial illiteracy among adolescents represents a serious challenge with broad implications for their individual and social well-being. This research demonstrates that as a result of financial illiteracy, adolescents experience difficulties in managing their finances, understanding taxes, loans and online shopping, which can lead to financial insecurity. Most teenagers need further development of some aspects of financial literacy such as savings, financial planning, price control, security and transaction/shopping conditions.

Financial illiteracy comes because of the lack of financial education in schools. It is characteristic that secondary education in Greece today lacks financial literacy courses for all students. It is important to integrate economic knowledge into the curriculum in order to equip young people with the necessary economic skills. Young people with limited financial literacy are not sufficiently informed about their employment options. This has an impact on their career decisions and their financial independence. It is characteristic that in our survey they themselves rate their knowledge quite low. Society must understand the importance of financial education and promote initiatives to combat financial illiteracy. This can be done through educational programmes, events and awareness-raising, as well as the introduction of financial education at all levels in the curriculum.

Addressing financial illiteracy among adolescents requires integrated efforts by society, education and government authorities to ensure financial awareness and ensure the financial well-being of young people.

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Research article

INFLUENCE OF STRESS AND JOB SATISFACTION ON THE DEVELOPMENT OF THE 'BURNOUT SYNDROME' IN TEACHERS FROM SCHOOLS IN THE REPUBLIC OF GREECE

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Abstract

The multiplicity of teacher's roles combined with unfavorable working conditions can create stress and professional burnout to him/her, with all that entails, also bring about negative effects on his/her health and on the quality of teaching, but also by extension on students' progress, things that are considered critical and important.

This article is mentioned mainly in the results of a study, which investigates the effect of stress and job satisfaction on the development of the burnout syndrome of Greek teachers (permanent, substitute or hourly workers) of special education, who are working in primary and secondary schools.

Based on the purpose and objectives of the study arose four (4) research questions, which should be answered, as well as one (1) main and other twelve (12) secondary hypotheses, which would be confirmed or not. The survey was conducted during the period April - June 2023 and the uniform questionnaire included four (4) separate questionnaires, as follow: a) One with teachers' demographics (5 questions), b) Oldenburg Burnout Inventory (OLBI) for measuring burnout (16 questions), c) Job Stress Measure (JSM) for assessing job stress (16 questions), and d) Minnesota Satisfaction Questionnaire (MSQ) for measuring employees' satisfaction (20 questions). The above uniform questionnaire was distributed through various teachers' social networks, survey management software named 'Google form', various emails, etc., through which were received 368 responses (282 - 76.6% from women and 86 - 23.4% from men), which originating from respective participating special education teachers. Finally, all the statistical procedures of this study were performed through the statistical IBM SPSS Statistics-Ver. 25 program.

Keywords: *Stress, job satisfaction, burnout syndrome, special education teachers.*

Introduction

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For the study and analysis of the phenomenon of job stress, a lot of research was done, and many theoretical models have been developed, which highlight the following major sources of it, as far as teachers are concerned:

- Students' behavior/learning problems (Varnava-Scura, 1996).
- Time pressure felt by teachers to complete school curriculum.
- Low school performance of students.
- Unsatisfactory working conditions and low salaries.

Also, the degree of satisfaction of a person of his profession is determining factor for the development of his social and family functioning, but also for the level of his mental health. And a teacher with low levels of satisfaction is driven to work burnout and acts as a discouragement to motivate and develop the creativity of his students (Moe, Pazzaglia & Ronconi, 2010). One of the most important causes of teachers' emotional burnout, is the development of negative relationships with students, as well as the general bad climate that prevails in the school classroom (Chang, 2009).

Teaching experience appears to have a positive effect on teachers' job satisfaction (Wang et al., 2018), and an enough important factor related to it is teachers' prestige, which emerges through social relationships. Regarding burnout, it is a phenomenon that has been studied for more than forty years (Maslach & Leiter, 2017), which is a common as well as a complex problem together that affects teachers emotionally, physically, and psychologically. Also, the prevailing working conditions (Sari, 2004), the lack of support from administration, bureaucracy (Billingsley, 2002), the increased demands of the role of the employee in special education, and relationships with parents (Kourkoutas et al., 2015) are significant factors to the exhaustion of teachers.

Burnout and job satisfaction of Greek teachers and special education teachers, affect their professional and personal life, has a direct and substantial impact on the teachers themselves, on key recipients of their services, students and a direct impact on their efficiency and the productivity in the education system. Job stress and burnout are the subject of this study, as well as their role in the mental and physical health of special education teachers. The present study also aims to investigate the factors of this burnout in special education teachers in the classrooms of the secondary education level.

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Regarding the main content of this article, there are some theoretical references for job stress, job satisfaction, and burnout syndrome. Also, in this are mentioned the aim and tasks of the study, research hypotheses, sample, methods for collecting the research data, and the results of the research and the relationships between the above three variables.

1. Theoretical Part

Stress and Job Stress

Anxiety disorders are the most common group of psychiatric disorders, and 25% of people have at least once met the criteria for such a disorder. They have high individual and societal costs, as they tend to be chronic and cause disabilities and physical disorders. Workplace is one of the main factors causing stress, which is created when the demands of the work environment exceed the abilities that individuals possess to carry them out.

Anxiety is an unpleasant and undefined feeling, associated with a multitude of physical reactions, and is usually characterized as a state of excessive worry, or discomfort and fear (Eysenck, 1997). The World Health Organization (WHO) defines job stress as “[Job stress is] The reaction that people may have when faced with work demands or pressures for which they have no knowledge or skills, resulting in difficulty coping with their work” (Leka et al., 2003, p. 1). The common element of most definitions for job stress is the pressure that the person feels in his workplace, for a certain period time (Saridi et al., 2016).

For the interpretation and analysis of job stress, many theoretical models have been developed, which make it easier to understand the way in which this affects employees. Some of the most important of them are: General Adaptation Syndrome (GAS), Job Demand - Control - Support Model, Transactional Model of Stress, Cooper and Marshall’s Model of Job Stress, Transactional Model of Stress and Coping, Effort - Reward Imbalance Model (ERI), Job Demands - Resources Model (JD-R), and Person-Environment Fit Theory.

Most of the factors that contribute to the appearance of job stress converge in the conditions of work pressure, insecurity, excessive demands, combined with the individual's inability to respond according to his cognitive background and skill set, as well as the ability to control or support employees, constitute the most general framework of factors that trigger job stress (WHO, 2003). Along with the above, both individual and environmental factors should be considered, which contribute to the development of this phenomenon (Stefanidou et al., 2010).

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Some of the most important causes of job stress are (Triperina, 2002) the poor interpersonal relationships between colleagues, excessive workload of the staff, exclusion of employees from decision-making, and work-life imbalance. In a study (Vakola & Nikolaou, 2005) job stress was found to be associated with lack of motivation, occupational accidents, reduced performance at work, reduced job satisfaction employee's side, problematic communication, intra-professional conflicts and negative attitude towards organizational changes in the workplace.

Most important sources of teachers' job stress are (Brown & Nagel, 2004) students' behavior problems, time pressure felt by teachers to complete school material, and unsatisfactory working conditions. A study conducted by Lazuras (2006) in Greece found that among the stressors reported by Special Education teachers as limiting their performance were factors related to organizational aspects of the job, such as organizational structure, lack of information about what and how they should do, insufficient supervision and inspection, and lack of co-operation between colleagues. Platsidou and Agaliotis (2008) found that the heterogeneity of classes, the activities of the daily program, the implementation of the syllabus, the assessment of students with special needs and the collaboration with other scientific bodies, with parents and with colleagues, were the most stressful factors for special education teachers.

Zhong et al. (2009), in their research on university teachers in China concluded that burnout is the first reaction to job stress and that it plays an important, mediating role in the relationship between job stress and teachers' physical and mental health. Also, according to Maher (1983), burnout may be the result of chronic and not rationally managed stress that people experience in trying to respond satisfactorily to more than one role (Antoniou & Dalla, 2008). Billingsley (2002) also reports that job stress is clearly related to teacher burnout and attrition.

Leontari, Kyridis & Gialamas (2000) found that female teachers as well as teachers with less experience and lower qualifications have more stress than their other colleagues, while in relation to age, marital status, years of service and educational level, no statistically significant correlations were found between men and women teachers. Unmarried have been consistently shown to have higher levels of burnout, and newly appointed teachers show higher levels of depersonalization and emotional exhaustion compared to all other age groups (Polychroni & Antoniou, 2006).

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Research findings by Aftab and Khatoon (2012), which examine the relationship of job stress with demographics of secondary school teachers, show that teachers experience low levels of job stress. Regarding gender, male teachers have higher stress levels than female teachers. The research results by Shkembi et al. (2015), which investigates workplace stress among primary and secondary school, showed that job stress was significantly predicted by place of residence and level of education but not by age, gender, marital status, or work experience. Kourmoussi & Alexopoulos (2016) found that female and younger teachers reported significantly higher levels of stress, and secondary education teachers had more stress than those in primary education.

Tsiakiros and Pasiardis (2002) found that teachers deal with their stress by creating friendly and cooperative relationships with colleagues, make timely and responsible planning in the educational process, try to have good relations with parents and try to they find the positive elements of a situation. Finally, dealing with and managing job stress is a special case that depends on social support, family environment, age, gender, etc. (Hatzichristou, 2004).

Job Satisfaction

Locke (1976) characterizes job satisfaction as the positive emotional response of the individual towards the specific work he performs, to the extent that his professional values are fulfilled at the same time. Weiss (2002) found out that job satisfaction is not simply an emotional reaction but a comprehensive attitude resulting from the judgment of the individual. The research showed that teachers with low levels of job satisfaction are likely to develop negative relationships with their colleagues (Allodi & Fischbein, 2012).

Most important factors which determine job satisfaction are those that are related to the same individual, that is: gender, age, level of education, professional experience, and personality of the employee (Tsounis & Sarafis, 2015). But also, there are some other endogenous (e.g. skills of employee, intrinsic job satisfaction, freedom of choices, decision making, taking initiatives, independent work) and exogenous factors (e.g. space and working conditions, salary, gifts or bonus, working hours, promotions, security, leadership).

Gkolia and Koustelios (2014) found that there are five (5) factors related to job satisfaction: role of the school principal, interpersonal relationships with colleagues, love and interest that teachers show for their profession, the nature of the work, and the conditions that prevail in the workplace can work positively or negatively in terms of job satisfaction.

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According to Gkolia and Koustelios (2014) the main factors of teachers' job satisfaction are the prestige, nature of work, relations with the students, relations with the colleagues and manager, salary, and working conditions.

Theories surrounding motivation are the cornerstone and connecting link of the theoretical approach to the phenomenon of job satisfaction. They are divided into two major categories, 'Ontological theories/approaches' (those that satisfy and motivate workers and are related to the needs one presents to motivations linked to the nature of work or its environment) and 'Mechanistic theories/approaches' (they emphasize on the conditions that prevail, which can enhance both efficiency and employee satisfaction) (Cole, 2002).

Job satisfaction is affected by the practiced form of leadership, and also, it has been found out that the more positive the school climate and the more cooperation, interaction and support teachers seek, the higher their job satisfaction is expected (Gkolia, Belias & Koustelios, 2014). Also, for the manager to function as an effective leader, it is important to cultivate the appropriate organizational culture, which should be based on shared values, goals, and orientations, as the organizational culture determines the behavior and the attitudes adopted by the members of the educational organization (Belias & Koustelios, 2014). On top of that, the research by Belias and Koustelios (2014) showed that the director who adopts characteristics of transformational leadership, acts as an example to be followed by the educational staff, promotes, and strengthens the cooperation between them, so that the jointly pursued goals can be achieved.

The Burnout Syndrome

Maslach, Jackson and Leiter (1996) define burnout as a psychological syndrome and emotional exhaustion, depersonalization and reduced job efficiency that may arise between people competing for a position (Mearns & Cain, 2003). Pines and Keinan (2005) believe that job burnout is one of the most important consequences of work stress and is due to the negative effects of chronic work stress on health, but also to psychosocial factors. Also, Pines (2002) believes that some factors that cause burnout in teachers are difficulties in handling children with attention deficit and other difficulties, incompetent managers, lack of support in cases of students with special needs, low wages, involuntary teacher movements, social pressure, demanding parents, and excessive bureaucracy.

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In general, the main factors which cause the burnout syndrome to teachers are the individual (e.g. gender, age, years of service, marital status, educational level) and the educational environmental (e.g. workload, ambiguity and conflict of roles, low salaries, peculiarities of each workplace) factors (Antoniou & Dalla, 2009). According to Stagiias and Iordanidis (2014) the stress the teachers experience can be defined as a set of unpleasant and negative emotions (e.g. anger, sadness, depression), and the increased stress can lead to reduced effectiveness of teachers, which in turn may lead to poor performance of students (Pappas, 2006). While teachers' burnout can be defined as the syndrome that it is the result of chronic work stress and is characterized by physical, emotional and behavioral exhaustion (Kyriacou, 1987).

Papagianni and Reppa (2008) found out that the burnout of the Greek general education teachers is in lower levels compared to teachers' burnout working in special education. While Koustelios and Tsigilis (2005) found that the basic factors responsible for the occurrence of burnout on general education teachers is the nature of their work, management of the school unit, relationships between colleagues, and general conditions that prevail in the school environment. In the research by Tsigilis, Zachopoulou and Grammatikopoulos (2006) was realized that job satisfaction in teachers of the public sector, caused by the conditions and nature of work itself, is negatively related to the burnout.

Effects of stress and by extension burnout are twofold, both in school organizations and individual teachers. The school organizations are affected by the loss of teachers, either due to resignation or premature retirement, but also by reducing the effectiveness of those who remain, while at the individual level the consequences relate to health problems, low self-esteem, and deterioration of personal relationships (Howard & Johnson, 2004). Siu (1995) summarizes the following effects of burnout on teachers: psychological exhaustion, psychological dysfunctional stress and physical, low job satisfaction, high levels of negative stress, and emotional, behavioral, and mental symptoms. Ghani, Ahmad, and Ibrahim (2014) believe that stress in special education teachers is the result of the following key factors: inappropriate behavior of students, workload, limited available time and resources, low recognition of their special efforts, and bad interpersonal relationships. High levels of work stress in special education teachers result in occupational dissatisfaction, burnout and eventually lead teachers to leave the profession completely or go to general education schools (Lazuras, 2006).

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Biglan et al. (2013) found three main variables related to burnout syndrome of special education teachers: experiential avoidance, conscious awareness, and valuable living. Also, both the conflict of roles as well as the ambiguity of the roles contribute significantly to the exhaustion of special education teachers, considering their gender, experience and training (Elibiary et al., 2017), and their high degree of job satisfaction is negatively correlated with burnout (Platsidou & Agaliotis, 2008). Even in the study by MacKenzie et al. (2010) it was found that special education teachers at the same time experiencing negative emotions such as frustration, isolation, and anger, but also positive emotions such as sensitivity, compassion, emotion, and passion for their work.

The research by Antoniou, Polychroni and Walters (2000) showed that Greek special education teachers are experiencing moderate to high levels of stress, low levels of personal achievement, moderate to high emotional exhaustion and moderate levels of depersonalization. Research by Skarlatos (2019) on teachers in secondary special education showed that they experience higher burnout levels compared to other surveys conducted in Greek teachers of primary or secondary general education (Koustelios & Kousteliou, 2001), but also teachers of primary special education (Platsidou & Agaliotis, 2008).

2. Methodology of the Conducted Psychological Research

Aim and Tasks of the Study

The main objective of this research is to investigate the stress and job satisfaction factors and how it affects the development of burnout syndrome on Greek special education teachers.

Individual objectives are the investigation of the levels of burnout, work-related stress, the overall job satisfaction, and its individual dimensions, and finally, whether and to what extent certain demographic and social factors influence their burnout and job satisfaction.

From the above arise 4 research questions, as follows:

1. How do stress and job satisfaction affect Greek special education teachers' burnout?
2. What are the levels of burnout and the individual dimensions among special education teachers?
3. What is the level of work-related stress and job satisfaction among special education teachers?

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4. What are the demographic factors that affect the levels of burnout, stress, and job satisfaction among special education teachers?

Participants and Research Hypotheses

The research participants were Greek special education teachers (permanent, substitutes or hourly workers) working in primary and secondary education, and the sampling method which selected was the “convenience sampling”.

The main hypothesis of this study hypothesizes that “Stress and job satisfaction influence the development of burnout syndrome in Greek special education teachers”.

But there are still 12 hypotheses, which hypothesize that:

1. Stress among these teachers is influenced by their gender.
2. Age is a predictor of stress for special teachers.
3. Years of professional experience influence their stress.
4. Job satisfaction among them is influenced by their gender.
5. Teachers’ age affects their job satisfaction.
6. Duration of professional work affects job satisfaction.
7. Age is a predictor of the development of burnout.
8. Gender is a factor that develops the burnout.
9. Teachers’ years activity influences the development of burnout.
10. There is an inverse relationship between stress and job satisfaction.
11. There is a directly proportional relationship between stress and burnout syndrome.
12. There is a directly proportional relationship between job satisfaction and burnout.

Methods for Collecting Research Data and Processing of Results

The research was conducted during the period April - June 2023 mainly through “Google Forms” application, and in total were received 368 responses to its four (4) questionnaires. The questionnaire was uniform, all questions were scored on Likert scales, and included the following 4 sections: a) Demographic characteristics (5 questions), b) Oldenburg Burnout Inventory (OLBI) for measuring burnout (16 questions), c) Job Stress Measure (JSM) for assessing job related stress (16 questions), and d) Minnesota Satisfaction Questionnaire (MSQ) for measuring employee satisfaction (20 questions).

Initially, descriptive statistics were carried out with tables or charts of absolute and relative frequencies. A test of independence was then performed with the chi-square test

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procedure to investigate the proportionality of the sample and any effects between demographic characteristics. For OLBI, JSM and MSQ questionnaires, reliability analysis was applied. Correlation analysis was also applied to establish the correlations between the dimensions of the questionnaires, and regression analysis where this was necessary. Finally, all statistical procedures were performed with the IBM SPSS Statistics - Ver. 25 statistical program.

3. Results of the Conducted Research

Demographic Characteristics

	N	%
Sex		
Man	86	23,4
Woman	282	76,6
Age (years)		
21 - 30	22	6,0
31 - 40	165	44,8
41 - 50	141	38,3
51 - 60	40	10,9
Education Level		
University	26	7,1
University of Technology	19	5,2
MSc	305	82,9
PhD	18	4,9
Marital Status		
Unmarried	133	36,1
Married	220	59,8
Divorced	15	4,1
Work Experience (years)		
1 - 10	198	53,8
11 - 20	140	38,0
21 - 30	22	6,0
30 or more	8	2,2

In in the adjacent Table 3.1 we can observe that from the 368 participants special teachers, 282 (76.6%) were women, 165 teachers (44.8%) were between 31-40 years, 82.9% hold a MSc and 4.9% a PhD, 59.8% were married, and 53.8% had work experience from 1-10 years. Also, from the application of the 'Chi-square Test' it is found that the age of the teachers is independent of the gender, work experience, and marital status ($p>0.05$), and the level of education differs statistically significantly in terms of gender ($p<0.05$). So, according to the

characteristics of the sample, no bias is expected in the research results.

Table 3.1: *Distribution of demographics*

Stress Measurement Results

	N	Mean	SD	p-value
Sex				0,024
Man	86	2,73	0,98	
Woman	282	2,95	0,64	
Age (years)				0,051
21 - 30	22	3,19	0,53	
31 - 40	165	2,86	0,80	
41 - 50	141	2,89	0,58	
51 - 60	40	2,95	1,00	
Education Level				<0,001
University	26	2,46	1,21	
University of Technology	19	2,45	0,74	
MSc	305	2,94	0,65	
PhD	18	3,37	0,82	
Marital Status				0,004
Unmarried	133	3,00	0,73	
Married	220	2,81	0,74	
Divorced	15	3,40	0,61	
Work Experience (years)				0,001
1 - 10	198	2,92	0,68	
11 - 20	140	2,97	0,69	
21 - 30	22	2,73	1,17	
30 or more	8	1,72	0,50	

Investigating the variability of the Job Stress Measure (JSM) questionnaire in terms of demographic characteristics in the adjacent Table 3.2, can be seen that only the variable 'Age' does not affect the stress score ($p>0.05$). Also, female teachers have a statistically significantly higher degree

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of stress than males ($p < 0.05$), PhD holders have the highest degree of stress, the married have the lowest level of stress, and those who have been working for 30 years or more have the lowest stress score.

Table 3.2: Comparisons of JSM by demographics

Job Satisfaction Measurement Results

From the investigation of Minnesota Satisfaction Questionnaire (MSQ), in terms of

	N	Mean	SD	p-value
Sex				0,535
Man	86	3,26	1,03	
Woman	282	3,25	0,72	
Age (years)				0,035
21 - 30	22	3,32	0,97	
31 - 40	165	3,25	0,79	
41 - 50	141	3,33	0,79	
51 - 60	40	2,94	0,74	
Education Level				0,335
University	26	2,92	1,25	
University of Technology	19	3,11	1,20	
MSc	305	3,28	0,74	
PhD	18	3,39	0,37	
Marital Status				0,032
Unmarried	133	3,14	0,84	
Married	220	3,35	0,75	
Divorced	15	2,87	0,95	
Work Experience (years)				0,004
1 - 10	198	3,35	0,81	
11 - 20	140	3,15	0,74	
21 - 30	22	3,39	0,86	
30 or more	8	2,25	0,80	

participants' demographics, have been found the following (Table 3.3): Age, Marital status and Work experience are the variables that influence the variability ($p < 0.05$) of the score of MSQ questionnaire dimension.

Regarding the age, the lowest score is found in special education teachers 51-60 years old, and divorced special education teachers score the lowest regarding marital status. Finally, teachers with work

experience from 30 or more years have the lowest score in the 'general dimension' of MSQ.

Table 3.3: Comparisons of 'general dimension' by demographics

Burnout Syndrome Measurement Results

Oldenburg Burnout Inventory (OLBI) questionnaire was used in this study in order to measure burnout, and it consists of the 'Exhaustion' and 'Disengagement' sections, which will be analyzed in the 2 below tables.

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	N	Mean	SD	p-value
Sex				0,504
Man	86	2,37	0,60	
Woman	282	2,38	0,44	
Age (years)				0,002
21 - 30	22	2,64	0,44	
31 - 40	165	2,31	0,49	
41 - 50	141	2,43	0,51	
51 - 60	40	2,32	0,24	
Education Level				0,002
University	26	2,48	0,79	
University of Technology	19	2,37	0,59	
MSc	305	2,34	0,40	
PhD	18	2,95	0,65	
Marital Status				0,103
Unmarried	133	2,43	0,49	
Married	220	2,34	0,48	
Divorced	15	2,56	0,29	
Work Experience (years)				0,137
1 - 10	198	2,44	0,45	
11 - 20	140	2,33	0,50	
21 - 30	22	2,14	0,52	
30 or more	8	2,38	0,40	

Table 3.4: Comparisons of ‘Exhaustion dimension’ by demographics

	N	Mean	SD	p-value
Sex				0,460
Man	86	2,32	0,45	
Woman	282	2,34	0,43	
Age (years)				0,021
21 - 30	22	2,51	0,34	
31 - 40	165	2,29	0,40	
41 - 50	141	2,38	0,47	
51 - 60	40	2,26	0,48	
Education Level				0,025
University	26	2,45	0,64	
University of Technology	19	2,46	0,32	
MSc	305	2,30	0,40	
PhD	18	2,69	0,56	
Marital Status				0,004
Unmarried	133	2,43	0,41	
Married	220	2,27	0,45	
Divorced	15	2,43	0,29	
Work Experience (years)				0,067
1 - 10	198	2,31	0,46	
11 - 20	140	2,37	0,39	
21 - 30	22	2,27	0,50	
30 or more	8	2,63	0,40	

teachers have an average score of 2.43.

Table 3.5: Comparisons of ‘Disengagement dimension’ by demographics

Interaction Results between Stress, Job Satisfaction and Burnout Syndrome

Investigating initially the effects of the ‘Exhaustion dimension’ (Table 3.4), in terms of demographic characteristics, the results show that Gender, Marital status and Work experience do not affect the degree of it ($p>0.05$). On the contrary, Age and Level of education affect the degree of Exhaustion as they present statistically significant differences ($p<0.05$). More specifically, teachers aged from 21 to 30 years, and those holding a PhD have the highest degree of Exhaustion.

Regarding ‘Disengagement dimension’ (Table 3.5), Gender and Work experience don’t affect its score. But, Disengagement is affected by Age, Education level and Marital status, according to the results ($p<0.05$). More specifically, teachers who are aged 21-30 years have a higher degree of Disengagement than the rest, PhD holders have a higher score of this dimension, married teachers have an average score of 2.27, while unmarried and divorced

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From the application of the correlation analysis, it is found that almost all the dimensions of the questionnaires used in this study have a high degree of correlation between them. The Exhaustion dimension of OLBI has positive correlation with the total score of JSM and negative correlation with the total score of MSQ and its individual dimensions. The Disengagement dimension of OLBI, has a low degree of correlation with JSM. Also, the total score of JSM is negatively correlated with the Intrinsic, Extrinsic and General dimensions respectively.

Results on the Relationship between Stress and Burnout Syndrome

From the application of the regression analysis, it is found that the effect of stress evaluated with the JSM questionnaire has a statistically significant effect on the burnout syndrome. It also has a statistically significant effect on both dimensions (exhaustion and disengagement) of burnout.

Results on the Relationship between Job Satisfaction and Burnout Syndrome

From the regression analysis between the dimensions of job satisfaction and burnout syndrome, it is observed that all dimensions of Job Satisfaction have a statistically significant effect on burnout syndrome, but also on the individual dimensions. Regarding the degree of influence of the job satisfaction dimensions, it is found that the Exhaustion dimension is influenced from the Intrinsic dimension, from the extrinsic dimension and from the general dimension. Finally, only the two (2) dimensions of job satisfaction affect the Disengagement, Intrinsic and Extrinsic dimension.

4. Discussion - Conclusions - Limitations

Discussion on the Research Data

The purpose of this thesis was to evaluate the levels of stress and burnout as well as the satisfaction of special education teachers in Greece. It was also investigated whether these levels are influenced by demographic factors and how they are related, both to the occurrence of burnout in professionals and to stress levels.

From the interpretation of the results of the OLBI burnout scale, it was found that Greek special education teachers show on average high levels of burnout, because of intense psychological and physical strain, with the dimension of Exhaustion from the job being reflected at higher levels compared to the dimension of Disengagement. Regarding the

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demographic characteristics of the academic staff and their relationship with feelings of professional burnout, the gender of the special education teachers did not appear to be a significant differentiating factor in terms of the Exhaustion and Disengagement dimensions of the OLBI questionnaire. The factors age and education level of the special education teachers affect the differentiation of burnout both in the Exhaustion dimension and in the Disengagement dimension of the OLBI questionnaire. Also statistically significant is the differentiation of Disengagement in terms of marital status.

From the stress investigation, it was found that the special education teachers face a moderate degree of stress overall. Investigating the effects on stress levels and whether they are affected by demographic characteristics, it was found that gender, education level, marital status and work experience differentiate stress scores. Regarding teachers' age, there was a negative correlation with stress, as the higher the age, the lower the degree of professional stress, however the differences between the age categories were not statistically significant. Male teachers declared a statistically significantly lower degree of stress than females. Also, teachers with higher formal qualifications, such as PhD and MSc holders, declare statistically significantly higher levels of professional stress. Married special education teachers are characterized by less stress than unmarried and divorced. Divorced people have the highest levels of stress. These findings agree with other studies. Finally, the age and work experience also found a negative correlation with stress levels, that is, the more years of experience teachers have, the less stress levels they report, thing that agree with previous research.

Regarding the professional satisfaction of Greek special education teachers that was investigated through MSQ, it was found that the score of the endogenous factors is influenced by the demographic characteristics of teachers, in particular, gender, marital status, and professional experience. Regarding gender, it was found that men declared a statistically significantly higher percentage of intrinsic satisfaction than women, in agreement with other studies. The married teachers declaring more satisfaction than unmarried and divorced ones, and the more experience teachers have, the more satisfaction they derive from their work. Concerning the external factors in relation to demographic characteristics that influence the degree of satisfaction of teachers, they are gender and work experience. Men and those with more years of experience report a higher satisfaction score. The evaluation of the general factors of professional satisfaction showed that gender and level of education did not

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differentiate the general factor score. In terms of age, a higher grade was observed among teachers 41 to 50 years old and the lowest among teachers 51 to 60 years old. While married teachers, as in endogenous and exogenous factors, declare a higher degree of satisfaction.

In general, from the results of the investigation regarding professional satisfaction, it appears that the special education teachers are quite satisfied with the educational system, with the content of the teacher's work, but also with the school climate that prevails in general and among colleagues, from the leadership style - collaboration with the principal and from the relationships they have developed with students, parents, and the community outside the school. Also, from the investigation of the correlation between stress, the dimensions of job satisfaction and the dimensions of burnout, it was found that stress has a statistically significant positive correlation with the levels of Exhaustion and Disengagement. On the contrary, job-related satisfaction was negatively correlated with the Exhaustion and Disengagement dimensions of burnout. It was also noticed that there is an inverse relationship between stress and job satisfaction in special education teachers.

Conclusions of the Research

In conclusion and regarding the 1st research question which was: “How do stress and job satisfaction affect the burnout of special education teachers in Greece?”, it was found that there is an effect of stress and job satisfaction on the occurrence of burnout in special education teachers.

Regarding the 2nd research question: “What are the levels of burnout and the individual dimensions among special education teachers in Greece?”, evaluating the levels of burnout of the sample considering the burnout levels of the OLBI scale as defined by Peterson et al. (2008), the sample's degree of exhaustion was high, as the mean score of the Exhaustion dimension (2.38) was greater than the mean value of 2.25 (cut-off score). Similarly, the degree of disengagement was high, as the mean score of the Disengagement dimension (2.33) was greater than the mean value of 2.1 (cut-off score).

Concerning the 3rd research question: “What is the level of work-related stress and the job satisfaction among special education teachers in Greece” it was found that the level of stress in the entire sample was 2.90 which is higher than the average value (2.5) of the scale, which means that special education teachers are characterized by stress. At the same time, high values were found in the levels of the dimensions of job satisfaction both in the intrinsic

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dimension (3.47) and in the extrinsic dimension (2.89) and in the General dimension (3.25), which means that they feel quite satisfied with their work them as all values are above the average value (2.5) of the scale.

Concluding, regarding the 4th research question: “What are the demographic factors that affect the levels of burnout, stress, and job satisfaction among special education teachers in Greece” it was initially established that gender does not differentiate the levels of burnout even though it affects stress and job satisfaction, where men report statistically significantly less stress and more satisfaction than women. After the investigation of the age of special education teachers, it was found that there is a gradual decrease in burnout in older teachers. The same picture is presented in stress, where the elderly declared lower levels than the younger ones, but without a statistically significant difference. Ultimately, in the dimensions of job satisfaction, age has a statistically significant effect only on the General dimension. The level of education is a variable that does not affect job satisfaction but significantly differentiates the dimensions of burnout and stress. Specifically, the special education teachers with the highest level of education declare statistically significant higher levels in the dimensions of burnout and stress. As for marital status, it was found that the married have statistically significant lower levels of disengagement, job stress and higher levels of intrinsic and general job satisfaction. Finally, the variable work experience, was found to affect all dimensions of job satisfaction, with younger teachers declaring less satisfaction than older solar teachers. Also, statistically significant differences were found in the exhaustion and disengagement dimensions of burnout, as well as stress, where older teachers report lower levels than younger ones.

With reference to the research hypotheses, the results of the previous statistical analysis confirmed the basic hypothesis that stress and job satisfaction influence the development of burnout syndrome in special education teachers.

All research hypotheses were also confirmed, except of the 8th hypothesis: “The gender of special education teachers is a factor in the development of the burnout syndrome”, which was partially confirmed, as there are differences between men and women, but they are not statistically significant.

Limitations and Future Research Directions

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Although the findings of this study found that all the questionnaires used in this thesis are reliable and our sample was satisfactory, we are not able to reduce the results to specific categories of special education teachers, such as position or employment relationship. The specialization of the results in different categories would help to take actions to limit the burnout syndrome.

The future research effort could focus on stratified sampling in terms of primary and secondary schools and proportional geographical coverage of the country. Even though the reliability analysis found a high degree of the alpha (α) index, it is useful to repeat the study in a sample with the same characteristics in order to investigate the stability of the relationships between stress and job satisfaction with the dimensions of burnout.

5. Contributions - Recommendations

The occupation and the in-depth investigation of the topic of this study entitled “Influence of Stress and Job Satisfaction on the Development of the ‘Burnout Syndrome’ in Teachers from Schools in the Republic of Greece” gave the researcher the opportunity to delve into the concepts of this syndrome and to understand the factors that affect the appearance of it in special education teachers.

The uniqueness and innovation of the study lies in the fact that it combines the effect of both job satisfaction and the effect of stress on burnout syndrome. While the studies so far examined individually either the effect of stress or the effect of job satisfaction on burnout. To date there are studies that investigate the phenomenon of burnout syndrome in general in various categories of workers as well as in teachers in general. The present study is of particular importance as it specializes in the investigation of the phenomenon in special education teachers.

From the analysis of the research data, useful conclusions emerged about the interaction of the phenomenon of burnout syndrome with stress and job satisfaction and about the demographic characteristics that affect the levels of burnout and its dimensions. The assessment and measurement method of the burnout syndrome phenomenon as defined is considered indisputable during the preparation of this study and its quantitative and qualitative existence is further confirmed by the present study.

An important part of this thesis investigated the question of which characteristics or combinations of characteristics affect burnout or the individual dimensions of burnout and are

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therefore related to the development process or the maintenance of the syndrome. To answer this question about which characteristics promote burnout or inhibit burnout, different statistical methods were used, such as: analysis of variance, correlation, and multiple regression analyses.

In order to identify the possible factors influencing burnout, a wide range of independent variables was collected during the study. In addition to the estimation of the dependent variable, another generally critical point, which applies to any empirical study, lies in the choice of measurement instruments for the collected constructs and independent variables. Depending on the instruments used, results may vary. This fact was considered in the present study by carefully selecting all the scales of the questionnaire as well as by checking them based on factor and reliability analyses. Mainly scales that had already been tested and confirmed as valid were used.

Given that research on Burnout Syndrome is currently in its infancy, compared to research on other constructs of stress and job satisfaction, it is suggested that they expand to larger sample sizes and specialize in investigating prevalence in individual categories of educational constructs.

Overall, the results regarding the quantity and quality of the phenomenon certainly give enough reasons for a serious health and school policy discussion about this stress syndrome, which is apparently widespread among teachers. Ultimately, burnout does not only mean a high level of suffering for the teacher but is also likely to have consequences for society as a whole in the long term, which is already expressed, for example, in the disproportionately high number of teachers taking early retirement. Even more serious are the consequences for the services offered by special education teachers to such a sensitive category of students. Consequently, for educational as well as economic reasons, it is also useful to further investigate the direct and indirect associations regarding the development and maintenance conditions of burnout.

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Research article

RESILIENCE, COPING AND ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS

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Abstract

This study examines the intricate connection among academic success, coping strategies, and resilience in high school adolescents. The primary aim is to examine the influence of demographic variables, such as gender, age, and family size, on resilience scores and teenagers' capacity to cope with life's challenges. This research used a comprehensive methodology that included analyzing coping strategies and resilience using established scales and investigating the relationship between these aspects and academic performance indicators. Significant correlations have been found between demographic characteristics, resilience scores, and coping abilities, as shown by the most influential research. Resilience and coping abilities are crucial for emotional well-being and the study results indicate that there may be a definitive association between these factors and academic accomplishment.

Key words: *Resilience in Adolescents, Coping Strategies, Academic Performance*

Introduction

The aim of current study is to investigate the complex relationship between resilience, coping strategies, and academic performance in high school students, regarding the maintenance of psychological well-being. Specifically, the specific characteristics of gender and the number of monthly numbers same to have a great influence regarding the resilience scores and the capacity of adolescence to regulate their life and their school performance. The study of their strategies regarding that is also studied.

Regarding the review of resilience in the first place definition is described, so the term resilience is regarded as an important field of research. In general, this is a complex term, which include a multitude of factors and it is very important as it concerns mental health and is regarded as a key factor for successful mental and social adjustment. Werner was the first psychologist who tried to define resilience according to whom it is the ability that individuals have to cope effectively with the internal pressures of their vulnerabilities. In this definition it is added that every person has stress at some point in their life and moreover it is regarded as the relative resistance to psychosocial risk experiences. Later it was defined as an individual set of characteristics which are combined with the characteristics that allow them to overcome the adversities they face and lead to resilience. So it would be described as the ability of individuals to tend towards health preservation including opportunities for experience. Positive side it's highlighted that there is a multidimensional nature of this there and so resilience is a developmental process and not a passive effect (Ransdell, 2011).

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In addition coping skills affect students' well-being and academic performance. Ragusa et al. (2023) also emphasise the importance of resilience-related skills like problem-solving and positive reinterpretation in managing academic stress and anxiety. These results suggest that resilience and effective coping strategies may lessen academic stress's negative effects on students' performance and well-being.

Methodology

The study sample included pupils from high schools in the Secondary Education, aged between 13 and 15 years. The sample size included 110 students. The instrument used is a questionnaire. To be more precise, three surveys were sent for completion. It is used the annual grade average of the students in our sample to assess their academic achievement. To gather data on the demographic characteristics of the participants, a concise and organized questionnaire consisting of closed-ended questions was administered. Students were required to submit information on their gender, age, class, and number of family members. The other two questionnaires are:

1. Motion Resilience Scale (RS) by Wagnild & Young (1993). Mamalickou (2012) translated this scale into Greek before administering it to a group of adults and adolescents. The main scale and its subscales revealed reliability indices within acceptable values in the sample of teens, ranging from $=.70$ to $=.89$. This demonstrates that the scale used to assess mental resilience is appropriate for use with teenage populations.

2. Coping Scale for Children and Adolescents (CSCA) by Brodzinsky et al. (1992). The scale has a high internal reliability of 0.76 and repeated measure stability of $r = 0.73$ (Hitt & Brodzinsky, 1991; Smith & Brodzinsky, 1994). Furthermore, the control sample consisted of students from integrating departments rather than special schools (Brodzinsky et al., 1992). Papakonstantinopoulou (2018) used this questionnaire for the first time in Greece, and the results were positive.

Hypotheses

The initial hypothesis of current research is that demographic characteristics, namely gender, age, and the number of family members, might impact resilience scores among high school students. Another hypothesis is the ability of adolescents to navigate life's challenges and its association with school performance, also in light of demographic characteristics. In addition, it is aimed to establish a positive and significant relationship between resilience, coping strategies, and school performance encountered contradictions. This study aims to highlight the positive and significant relationship between resilience, the ability to manage problems, and school performance.

Results and Discussion

The first hypothesis of this study posited that there are disparities in resilience scores and academic achievement based on demographic factors (such as gender, age, and family size) among high school students. According to the most recent research, it has been confirmed.

The study revealed significant disparities in resilience across different age cohorts (Sig. = 0.010 < 0.05). No statistically significant disparities are seen between males and females or among different socioeconomic groups. Regarding academic performance, as evaluated by the mean

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grades, there are no noticeable discrepancies across genders or social classes. Nevertheless, there were statistically significant changes (Sig. = 0.01) depending on age. The quantity of family members has a substantial impact on both the mean grades (p-value: 0.000) and mental fortitude (p-value: 0.000).

This is accordance to Silva & Silva (2021) who investigated the development and validation of a measurement tool specifically developed to evaluate the resilience of educational institutions. This scale includes many characteristics or traits that schools must have to support their resilient behavior and guarantee good quality. Their results suggest that schools may vary in their capacity to overcome difficulties, which might be influenced by demographic considerations.

The hypothesis suggesting that demographic parameters such as gender, age, and number of family members influence the ability of high school pupils to handle life issues was validated. The findings indicated significant statistical differences in the coping measures across different age groups (Sig. = 0.030 < 0.05). There is no discernible disparity in statistical significance between boys and girls, nor across different grade levels. Nonetheless, there exists a statistically noteworthy disparity across families with different numbers of family members.

Ransdell's (2011) research aimed to determine the precise psychological and environmental characteristics that allow pupils to attain academic achievement, even in difficult situations. While the main focus is on individual students, the concept of resilience in the face of challenges may also be applied to institutions. Schools that have a variety of demographic features may exhibit varying levels of resilience.

The correlation matrix supports the third hypothesis, which suggests a relationship between resilience, coping strategies, academic performance, and demographic factors. The analysis of the sample revealed significant and strong positive relationships between average grades, mental resilience, and the ability to manage problems. There is a strong and positive correlation between Grades Average and Mental Resilience (Pearson Correlation: 0.847 & Sig.: 0.000), Grades Average and Ability to Manage Problems (Pearson Correlation: 0.813 & Sig.: 0.000), and Mental Resilience and Ability to Manage Problems (Pearson Correlation: 0.833 & Sig.: 0.000). The ability of students to successfully manage challenges and overcome academic impediments is inextricably linked to their resilience and coping strategies.

Similar results were shown by Chemers et al. (2001) who highlighted the importance of academic self-efficacy and coping abilities in predicting students' success in the classroom, their adjustment, levels of stress, and overall health. This underscores the significant impact of coping skills on the overall well-being and academic accomplishments of kids. A study done by Arun et al. (2017) reveals that adolescents who have academic difficulties are more susceptible to experiencing heightened levels of stress, which may then lead to the emergence of suicidal ideation. This emphasizes the detrimental effects that academic difficulties have on the mental well-being of adolescents, therefore underscoring the need to have effective problem-solving and coping skills to overcome academic challenges. Furthermore, Downes et al. (2017) provide unique perspectives on the progression of executive functioning from early infancy to adolescence, highlighting the substantial transformations in executive capabilities that take place throughout this critical period. Gaining insight into the progression of adolescents' problem-solving abilities and coping strategies as they go through their educational journey is crucial for grasping its influence on their academic performance.

It is also confirmed a positive and significant correlation between resilience and academic performance. Our research findings suggest that 71.8% of the variability in mental resilience, the variable under investigation, can be explained by the independent variable, which is the

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average of grades. The model has statistical significance, as shown by the very low sig. value (sig. = 0.000). The positive unstandardized coefficient value (0.910) indicates a clear correlation between an upward shift in grade average and a corresponding rise in mental resilience. The significance of the coefficient (Sig. = 0.000) reflects the statistical importance of this connection.

Several studies have examined the relationship between resilience and academic performance. For instance, Masten and Narayan (2012) found that resilient children exhibit exceptional academic achievement, even in the face of difficult situations. Similarly, Bonanno (2004) highlighted the capacity of individuals to thrive after traumatic experiences, suggesting that resilience may positively impact academic performance. However, it is essential to consider the impact of demographic factors on this association. Demographic factors such as socioeconomic status, ethnicity, and gender have been seen to influence both resilience and academic performance (Masten, 2001). Children from economically disadvantaged backgrounds may face additional barriers that impact their resilience and, thus, their academic performance.

The existence of a significant and positive association between the coping abilities of teens and their academic achievements was confirmed. The study findings indicate a strong and favorable link (Pearson: 0.813, Sig.: 0.000) between grade average and ability to manage problems.

Moreover, the independent variable, grade average, may explain 66.1% of the variance in the dependent variable, the ability to manage problems. The extremely low sig. value (sig. = 0.000) indicates that the model has statistical significance. The ability of teenagers to proficiently navigate adversities is intricately linked to their academic attainment. The coping techniques used by adolescents have a significant impact on their academic progress and overall well-being. Arsenio & Loria (2014) emphasize the substantial influence of teens' coping strategies and emotional states on their academic success, suggesting a mutual connection where coping strategies may influence academic performance and vice versa. This underscores the need to understand and foster effective coping mechanisms in adolescents to positively impact their academic performance.

According to findings there is a favorable link between resilience, coping mechanisms, and academic achievement. The research demonstrates a strong and positive correlation of 0.833 (Pearson correlation) and a significance level of 0.000 between mental resilience and the ability to manage problems. Moreover, mental resilience explains 69.4% of the variation in the ability to manage problems, indicating that it is a very influential factor in predicting this outcome. The model has statistical significance, as shown by the very low sig. value (sig. = 0.000). This suggests that the relationship between mental resilience and the ability to manage problems is not due to mere coincidence. The results suggest that fostering resilience and using effective coping strategies may mitigate the negative effects of academic stress on students' academic achievement and overall welfare.

Moreover, both Fullerton et al. (2021) and Meneghel et al. (2019) highlight the clear association between academic resilience and problem-focused coping strategies. These findings support the notion that student's ability to effectively manage academic challenges is connected to their resilience and coping strategies, ultimately influencing their academic performance and satisfaction. To alleviate academic stress and enhance positive academic outcomes in students, it is essential to use efficient coping strategies, problem-solving tactics, and resilience-oriented approaches.

Finally, the results asserting that the academic achievement of adolescents may be anticipated based on their adaptability and aptitude for resolving problems, has also been corroborated. The

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results demonstrate statistically significant correlations between the subscales of mental resilience, problem-solving aptitude, and arithmetic performance. The study findings indicate a strong and positive correlation of 0.813 (Pearson correlation coefficient) between grade average and ability to manage problems, with a high degree of statistical significance ($p < 0.001$).

Conclusion

The present study provides evidence that both corroborates and challenges the claim that there is a correlation between teens' problem-solving abilities and academic performance, as well as the link between resilience coping strategies and academic accomplishment. Consistent with the results of the current study, Shek & Li (2015) identified a positive association between adolescents' perceived academic success and their overall life satisfaction in a longitudinal study. They discovered that those who reported a high level of life satisfaction had enhanced psychological adaptation and a decreased prevalence of mental health problems. These results suggest that a student's perception of their academic performance, influenced by their problem-solving abilities and resilience, might impact their overall well-being and perhaps their academic achievement. Yeager et al. (2022) performed a study that supports the previous claim based on the results. The research centers on a cognitive intervention aimed at protecting adolescents from stress. The intervention aimed to foster a mindset of growth and adaptability among students, resulting in a reduction in stress levels. These results suggest that developing appropriate coping strategies and resilience might greatly improve the well-being of teens and perhaps boost their academic performance.

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