



# Investigation of the Feelings, Attitudes and Concerns of Special and General Education Teachers regarding the Inclusive Education of Students with ADHD

Triantafillia Chrysovalantou Politou

University of Crete, Crete, Greece

Email: rosiepolitou@gmail.com

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## Abstract

In recent decades, Attention Deficit Hyperactivity Disorder (ADHD) has been at the center of research interest in medicine, psychology, and education. Research has focused on its etiology, diagnosis, and therapeutic approaches. However, there are also many researchers who have focused their interest on teachers' opinions regarding the inclusion of ADHD in standard schools, as ADHD is a neurodevelopmental disorder whose primary symptoms are inattention, impulsivity, and hyperactivity usually causes social and behavioral disorders and learning difficulties. In this research, research data was collected through the quantitative method and the use of an electronic questionnaire in a sample of 160 Special and General Education teachers concerning their opinions, concerns, and feelings regarding the inclusion of students with ADHD in general schools. The results of the research process demonstrate that Special Education Teachers have more positive attitudes and feelings toward the inclusion of children with ADHD in general classes than General Education teachers. Meanwhile, General Education teachers compared to Special Education teachers seem to present more concerns regarding the inclusion of students with ADHD, due to insufficient training and information on special education issues [1]. A fact that seems to agree and confirm the modern research literature. Also, through the research, it was established that demographic data, such as gender and family status, seem to be a factor that affects the attitudes and feelings of teachers towards the inclusion of students with ADHD.

## Subject Areas

Special Education

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## Keywords

Special Education, Pre-School Teachers, Inclusive Education, ADHD, Disorder

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## 1. Introduction

In recent years, Attention Deficit Hyperactivity Disorder has been of intense concern to experts, but also to teachers of all levels, as well as many parents. The main reason for this increased interest is the high prevalence of ADHD in the child and adolescent population and the impact it often has on learning and behavior.

In the Greek area, the inclusive education of people with disabilities and/or educational needs in the institutional and legislative framework moved with timid steps. 3699/2008 [2] is the first law that introduces the concept of inclusive education and equal access of people with disabilities and/or educational needs to education, society, and professional training. An effort to promote the inclusive education model is implemented through Law 4547/2018 [3] which aims to create the necessary conditions that will support the reorganization of the support structures of primary and secondary education [1] [4] [5].

It is often observed that most teachers have difficulty distinguishing the difference between the terms “integration” and “inclusion” [5]. Inclusion is defined, by modern literature, as the placement and attendance of children with disabilities and/or educational needs within general classes [6]. Whereas, integration means mutual acceptance by a whole or a group and the development of social relations, in order to achieve the social and educational inclusion of children with disabilities and/or educational needs [1] [4] [5].

In this work, the concepts of “integration”, “inclusion” and “co-education” are approached as identical and are intertwined with the attendance of students with disabilities and/or educational needs in general school classes, their acceptance by the overall, their active participation in the learning process and in school life in general, the promotion of equal opportunities and their full and smooth integration and adaptation to school and by extension to society [1] [4] [5].

Law 3699/2008 [2] includes students with special educational needs students with Attention Deficit Hyperactivity Disorder (ADHD). ADHD is a developmental disorder characterized by three main primary symptoms, mainly due to organic causes, inattention, hyperactivity, and impulsivity. The extent, intensity, and degree of severity of the above symptoms tend to vary from child to child. This means that ADHD is a disorder that presents significant heterogeneity regarding the clinical picture of students with ADHD [7] [8] [9].

The above three primary symptoms of a child with ADHD may cause secondary symptoms such as behavior problems, learning difficulties, and low self-esteem.

These secondary symptoms usually result from the interaction of the child's reaction with the reaction of his social environment [9].

The interpretations that teachers usually give of the behavior and difficulties of a child with ADHD vary. It seems that the careless or impulsive reactions of students with ADHD are often interpreted by some teachers as intentional or the result of "bad behavior", "laziness", "immaturity" or "bad character" [9].

In the international, as well as Greek literature, several studies seem to have been carried out regarding the views of teachers regarding the inclusion of students with SEN. In some surveys, the attitudes of the teachers are presented as positive, while in others the attitudes that the teachers seem to manifest are neutral or even negative [10]. Attitudes towards teaching all students: A cross-national exploration. Trends in Psychology: In fact, it is observed that the negative attitude of teachers towards the inclusion of students with ADHD is determined by the inability to manage the difficult behavior that the above students tend to display [11] [12] [13].

It is also observed that teachers tend to worry about the effectiveness of their teaching, as they do not receive appropriate information on special education issues and consider their knowledge and training insufficient for co-educational programs for students with ADHD [1]. At the same time, research has shown that typical students show a more positive attitude towards students with learning difficulties than towards students with ADHD. In conclusion, it is clear from the above that the formation of teachers' attitudes and perceptions regarding the co-education of people with ADHD depends on their training, their knowledge, and the existence or not of appropriate educational structures and materials.

The purpose of this research is to capture the feelings, opinions, and concerns of General and Special Education teachers regarding the inclusion of students with ADHD in standard schools and to what extent they differ from each other. Also, to determine the role of demographic data regarding the formation of teachers' attitudes and perceptions regarding the inclusion of students with ADHD in general classes. In addition, through this research, information is given about the difficulties and the main obstacles in the implementation of integration.

The present research, through the collection and analysis of the results, expanded the existing knowledge regarding the opinions of General and Special Education teachers regarding the inclusion of children with ADHD in the context of the general school, after a long period of quarantine, due to the of the Covid-19 pandemic, where classes were held online and teachers did not have direct contact with students with ADHD. The research results of this particular research could be food for thought for General and Special Education teachers regarding their role and their views regarding the inclusion of students with ADHD in standard schools. Whereas, the conclusions of this research can be the trigger for further research on the inclusion of students with ADHD.

Listed below are the research questions that will be answered in this research

study:

1) What are the feelings and concerns of Special and General Education teachers regarding the inclusion of students with ADHD? Do their feelings and concerns differ regarding the inclusion of students with ADHD?

2) What are the attitudes and opinions of Special and General Education teachers regarding the inclusion of students with ADHD? Do their opinions differ regarding the inclusion of students with ADHD?

3) Are Special and General Education teachers willing to differentiate their teaching in order to promote the inclusion of students with ADHD in the general classroom?

4) Do the Special and General Education teachers themselves believe that they are able to use co-educational techniques, in order to facilitate the learning process and, by extension, the social integration of students with ADHD in general school classes?

5) Are Special and General Education teachers concerned that students with ADHD will not be accepted and will not be able to coexist with students without disabilities and/or educational needs?

6) Are the demographic data of Special and General Education teachers constraining or enhancing factors a) in the creation of positive attitudes of teachers regarding the joint education of students with ADHD and b) in the implementation of co-educational programs?

The next chapter following the introduction is the literature review, which is divided into a theoretical and a research part. In the theoretical part, Attention Deficit Hyperactivity Disorder (ADHD) is defined, and the characteristic features of this disorder are presented by the developmental stage, as well as the epidemiological data, the etiology, and comorbidity of ADHD, and its diagnostic tools. Also, the integration practice of students with SEN and the opinions of teachers and typical students regarding the inclusion of students with SEN in general classes are described. The research part analyzes the quantitative method and the convenience sampling applied in this research, as well as the sample of 160 Special and General Education teachers. Also, there is talk about the research tool of the research, namely the questionnaire which is a translation and adaptation of the SACIE-R scale [14]. Reference is made to the process of processing and analyzing the research results and to ethical and ethical issues. In the third chapter, the analysis of the research data and conclusions is carried out, while the research is completed with the citation of the bibliography.

## 2. Theoretical Framework

### 2.1. Attention Deficit Hyperactivity Disorder (ADHD)

The modern literature defines “Attention-Deficit Hyperactivity Disorder” (ADHD) as the neurodevelopmental disorder, which is described by inattention, difficulty concentrating, impulsivity, and hyperactivity that are not consistent with the child’s developmental age [9] [15] [16]. In the international literature, ADHD is

listed as Attention Deficit Hyperactivity Disorder (ADHD) [9] [15]. The above primary symptoms of ADHD usually cause secondary symptoms, such as learning difficulties, behavioral problems, and low self-esteem. Attention Deficit Hyperactivity Disorder, according to the fifth edition of the Diagnostic and Statistical Manual (DSM-V) of the American Psychiatric Association [17] or Hyperactivity Disorder, according to the tenth edition of the International Statistical Classification of Diseases and Related Health Problems (I-CD-10), is one of the most common childhood psychiatric disorders of school age [18], which seems to persist into adulthood [15] [19] [20].

### **2.1.1. Characteristics of Children with ADHD**

The main characteristics found in people with ADHD are inattention, impulsivity and hyperactivity. These symptoms vary in frequency and intensity depending on the developmental stage of the individuals, their gender, but also the reactions of the family and social circle regarding their behaviors. Therefore, the image of people with ADHD may present heterogeneity, as different symptoms are found [15].

In particular, people with ADHD have difficulty maintaining their attention in repetitive activities that require intense and continuous mental effort, as their attention is easily distracted by external stimuli, but also by their own thoughts. Impulsivity refers to the tendency of children with ADHD to act and speak without considering the consequences and their need for immediate gratification. Whereas, hyperactivity is the characteristic that is more easily perceived by the child's social environment and concerns his increased mobility [15].

The result of these primary symptoms is to deal with difficulties both at the level of the school environment and learning and at the level of social interactions [15]. From the study of the relevant literature, as well as from the study of related research, it appears that the symptoms of the disorder have a significant impact on school performance. In children of toddler age, the symptoms are not easily recognizable, with the result that in several cases parents attribute the child's behavior to his young age. With greater frequency, parents and teachers refer students with symptoms consistent with ADHD during the first years of primary school, since the child's effort and mental potential are not consistent with their learning results and behavior during of the course [21].

### **2.1.2. Developmental Course of Individuals with ADHD**

The developmental course of individuals diagnosed with ADHD is studied by age group. As infants, they are characterized by hyperactivity, incessant and prolonged crying, restless sleep, difficulties regarding their eating habits, while there is also a possibility of delayed onset of speech [22]. As the diagnosis during infancy is not possible, the above are indications of the appearance of the disorder, so infants with the above symptoms are a high-risk group. Pauli-Pott & Becker, in their research in 2011, claim that the diagnosis of the disorder is possible at the age of three.

In infancy, symptoms include inattention, impulsivity, clumsiness, incoordination, lack of fear, and moody behavior [23]. The lack of fear found in toddlers with ADHD makes them fearful of poisoning and injury, which results in constant supervision by adults [24].

During school age, the inability to concentrate, the difficulty in reading and writing, the difficulties in articulating speech, the inability to complete tasks, the lack of self-control, as well as the inability to follow the rules lead the teacher to recommend to the parents further control, since compared to other students of the same age the above symptoms are distinguished by their intensity [25] [26]. In addition, the school performance of students with ADHD lags by 30% of their peers and by 80% of their mental potential. Low performance is largely due to the deficient organizational skills of these children [27].

The disorder is also present during adolescence with symptoms varying in terms of impulsivity and hyperactivity, but persisting in terms of inattention and inability to concentrate. Also, adolescents with ADHD initiate their sex life at a young age, engaging in risky sexual behavior and showing propensity for substance use and alcohol consumption [28].

As adults, those diagnosed with ADHD remain restless, impulsive, disorganized. Often, due to their inconsistency, they face problems with their work, while their inability to follow the rules leads to instability of their work life [29].

The developmental course of the person who receives a diagnosis of ADHD is linked to the severity of the symptoms, the level of the IQ and the wider family environment of the child. Any psychiatric disorders or comorbidity with other difficulties affect the socioemotional development of people with ADHD [18]. Finally, all researches agree that early diagnosis and early intervention have spectacular results in the developmental course of children diagnosed with the disorder [18].

### **2.1.3. Epidemiological Data of DEP-Y**

According to the American Psychiatric Association [17], ADHD is diagnosed with a frequency of 5%, while it is observed that ADHD manifests itself with greater frequency in boys. This element is probably linked to the absence of hyperactivity that occurs in girls. The absence of hyperactivity leads to overlooking the other symptoms or delaying the diagnosis [30]. The disproportion regarding the incidence of this disorder between the two sexes may lie in biological and psychosocial causes. In particular, it is argued that the reason for the appearance of ADHD in girls is pathological, such as the existence of brain damage, while in boys it is due to the greater exposure of the genetic predisposing factor compared to girls. However, most research proves that there are neither qualitative nor quantitative differences regarding the neurological substrate of ADHD between the two sexes [15].

#### **1) Etiology of ADHD**

The causes of ADHD have not been fully elucidated, which is why research into the causes of the disorder remains ongoing. It seems that the etiology of

ADHD is related to factors related to the structure and function of the brain, as well as to genetic, neurochemical, environmental and neuropsychological factors.

Earlier and specifically in the early 1930s, symptoms of attention deficit and hyperactivity were associated with “brain damage”. The impossibility of explaining the behavior of people with ADHD led to the retention of this specific designation for twenty years, when in the 1950s it was replaced by the term “minimal brain dysfunction”. The extensive research that followed in this field led to the separation of the children under study into two subcategories. In children with brain dysfunction or brain damage and in children whose symptomatology referred to hyperactivity syndrome [31].

Also, through the use of neuroimaging methods, it was found that people with ADHD have a smaller brain volume, mainly in the right hemisphere, compared to the general population. Furthermore, it was observed that individuals with ADHD show morphological changes in the brain regions, such as abnormalities in the white matter and neural networks and a thinner cerebral cortex [15].

Thorough and long-term research on the subject has led to the support of the view that the possible causes of the disorder are many and related to an amalgam of genetic abnormalities and hereditary predisposition. ADHD is observed to be hereditary in a percentage of 76%, *i.e.* in 76% of the cases diagnosed with ADHD there is a relative with ADHD in the close family environment, while in 57% of the cases it is the parent [32].

It seems that all the research data converge in the opinion that it is possible that the organic damage and dysfunctions observed in people with ADHD are linked to genetic factors that intervene during conception. Thus, in many cases genes are expressed in the fetus that code for weaker temporal lobes, in which auditory discrimination takes place, or genes that are due to some abnormality in the prefrontal region of the brain that is responsible for impulses and complex thoughts [32].

In addition, exogenous factors, prenatal, perinatal and postnatal, have been studied, which to a small extent contribute to the manifestation of Attention Deficit Hyperactivity Disorder. Such factors are smoking, alcohol consumption, poor diet, intense stress or experiencing a particularly unpleasant and stressful situation during pregnancy, premature birth, lack of oxygen and low birth weight, under one and a half kilograms [15]. Additionally, in cases where the newborn has viral infections, encephalitis, meningitis, drugs are administered or there is a head injury, the chances of developing the disorder increase [33].

In addition to the above factors, research has shown that conflicts between parents, the wrong way of educating, such as excessive indifference or excessive strictness, contribute to the appearance of ADHD symptoms [15] [20].

## 2) Comorbidity of ADHD

Several studies have focused on the comorbidity of ADHD with other disorders, as 65% of children with ADHD manifest two or more disorders at the same time, which often persist into adulthood [9] [15] [20] [30] [34].

The most common disorders with which ADHD coexists are Oppositional

Defiant Disorder (ODD) and/or Conduct Disorder (CD), Learning Difficulties (specific or generalized), Autism Spectrum Disorders (ASD), Language Disorders, Emotional-Mental Disorders, Anxiety Disorders, Sleep Disorders, Sensory Processing Disorder, Substance Abuse Disorder (SAD), Internalizing or Externalizing Disorder and Somatization Disorders [9] [15] [20] [30] [35].

In particular, according to the international literature, a high percentage of children with ADHD show symptoms of Oppositional Defiant Disorder and/or Conduct Disorder. In fact, it seems that the manifestation of EPD is an indicator of the severity of ADHD symptoms. According to ICD-10, the coexistence of ADHD and ED is a separate disorder. Research shows that ADHD usually precedes ED, which precedes DD [9] [15] [20] [30].

According to a lot of research data, children with ADHD face special learning difficulties (SLD), while children with special learning difficulties show symptoms of ADHD. The relationship between ADHD and SLD is complex, with many researchers questioning whether ADHD is a primary, separate disorder or a secondary symptom, as children with ADHD experience difficulties with language and phonological and at the written level, deficits in executive control functions, reduced learning motivation and inability to concentrate on activities that require organizational skills [9] [15] [20] [30].

### 3) Diagnosis of ADHD

For the diagnosis of ADHD, diagnostic psychometric tools have been developed by the World Health Organization ICD-10 and the American Psychiatric Association DSM-IV. A positive diagnosis results if six or more symptoms of inattention, hyperactivity-impulsivity are detected in the last six months, before the age of seven, to an extent that is not consistent with the child's developmental level [20].

In particular, the symptoms of inattention are defined as frequent inattention errors in school assignments or in the workplace, difficulty concentrating in play, insufficient attention during conversation, inattention, inability to follow instructions resulting in not completing assigned tasks either at school or at work, when this is not due to a lack of understanding of instructions, difficulty in organizing tasks and activities, avoiding tasks that require concentration and mental effort, losing objects, losing concentration due to external stimuli and inconsistency in school and work obligations.

Whereas, the symptoms of Hyperactivity-Impulsivity are hyperactivity, non-stop movement of arms and legs, the inability of the person to stay seated for a long period of time, hyperactivity in places that are not suitable for such a thing, the difficulty of playing quietly, if the person is immobile, incessant talking, impulsivity, impulsive answers before the question is completed, and difficulty sitting still and waiting until one's turn comes. The latest revised version of the DSM-V includes minor differences regarding the diagnosis in adolescents aged 17 years and adults, where the diagnosis requires the existence of four criteria instead of the six that were valid in the DSM-IV, while a difference is also found in the appearance of the symptoms from 7 years to 12 years. The diagnosis, depending on

the symptoms to be detected, is divided into the ADHD person with a prominent Hyperactive-Impulsive Type, the ADHD person with a prominent Inattentive Type and the combined type ADHD person [36].

#### 4) Educational Intervention ADHD

The methods of intervention and treatment in the cases of children who receive a diagnosis of ADHD do not aim at the definitive treatment of the disorder, since so far no such treatment exists. Intervention and treatment are related to dealing with the symptoms of the disorder and learning methods so that the child is able to manage his behavior, to be able to respect the rules and to acquire a defined and socially acceptable behavior. In many cases, it is deemed necessary to administer medication in combination with behavioral therapy [9] [18].

Also, children diagnosed with ADHD attend individualized special education programs. Special education is applied to students who show learning difficulties, adjustment difficulties, and difficulties in their interpersonal relationships and behavior control in the school environment. The personalized program is implemented based on the particular needs and rate of information processing and storage of each student. More and more research suggests that the effectiveness of intervention programs depends on the age of diagnosis and early intervention. The term early intervention refers to a program aimed at pre-school and early childhood students and concerns all forms of practice and education, as well as the instructions to parents and teachers after identifying the problem, with the aim of limiting the symptoms [9] [37].

The most basic interventions implemented to deal with the above difficulties by school psychologists and educational staffs are behavioral, cognitive-behavioral, academic and social skills training. Thus, behavior modification programs are carried out both in special education centers and at home, in collaboration with parents. Therefore, the child is assigned activities that require more and more concentration in order to acquire the specific skill [9] [15].

As part of the intervention programs to deal with ADHD, several software programs have been developed, such as the FINALLY program, which aims to strengthen the ability to concentrate and improve executive functions. The term executive functions refers to the inhibitory function, which refers to the individual's ability to focus on a stimulus and reject all the stimuli that disrupt him and derive either from his irrelevant thoughts or from the outside world [38], in working memory, which concerns the memorization, but also the retention of information in combination with their management [39] and cognitive flexibility which refers to the development of the individual's ability to apply rules appropriate to the environment [39]. The advantages of software programs lie in familiarizing children with technology, while interventions of this kind are enjoyable for children so that they become motivated to learn.

## 2.2. Integration and ADHD

### 2.2.1. Definition of Inclusion and Co-Education

In this paper, as mentioned in the introduction, the terms "integration" and

“co-education” were used as synonymous, however in the international literature it is observed that there is a distinction between the meanings of these two terms. In comparison, the term integration is found in the literature with the term “integration”, which comes from the Latin verb *integrare*, which means to complete, to integrate [40]. Therefore, the term “inclusion” is conceptually interpreted as the placement of a person with special educational needs within the school context of general education and their integration as an independent, integral part of a wider whole [41] [42]. On the other hand, the term “co-education” which in the international literature corresponds to the word “inclusion” comes from the Latin verb *includere* which means to include. In fact, in the Greek literature the terms “education for all” and “inclusive education” are used interchangeably. The inclusion of students with special educational needs in the environment of typical students aims at the interaction process, which seems to yield beneficial results in their psycho-emotional, intellectual and social development. Co-education is defined as the effort made to allow typical students to coexist with students who experience learning difficulties. This coexistence lays the foundations for co-teaching, a process that consists of teaching students with special needs and special needs, in the usual classrooms, while in the context of coexistence, the provision of the necessary pedagogical assistance to students with the corresponding diagnosis is provided by special educators or by people who have the appropriate training on special education issues [43].

### 1) Inclusive Education Policy in Greece for ADHD

Law 3699/2008 (Official Gazette 199/A/2-10-2008) includes for the first time among students with disabilities or special educational needs students diagnosed with Attention Deficit Disorder with or without Hyperactivity (ADHD).

Therefore, according to the Interdisciplinary Unified Framework of Study Programs (U.F.S.P.) for compulsory education, it follows that one of the most basic principles of the education provided concerns the securing of equal opportunities and possibilities for all students. In addition, the educational planning must be homogeneous and include the entire student community, while special care must be taken for the integration of students with disabilities and special educational needs in general schools, but also in Special Education schools as an integral part of the general education. The inclusion of students with special educational needs in the school community is a state and social obligation, while its realization is the responsibility of both teachers and parents.

### 2.2.2. School Framework and Implementation of the Integration Model of the ADHD

According to Law 3699/2008 [2], students who receive a diagnosis of ADHD from the KE.D.A.S.Y. (Diagnosis Centers for Assessment, Counseling and Support), they are given the opportunity to study in Integration Departments, *i.e.* in a special education structure within the General school, in order to attend an individualized intervention program designed based on the strengths and weak-

nesses of the student with ADHD.

In addition, for successful and effective teaching in the Integration Department, students are divided into groups regardless of the class they attend. In the case of the integration section, the separation is carried out according to the difficulties that the students present and the purpose is to practice the points that the students face difficulty. The educational interventions are mainly aimed at improving the learning area, as they concern difficulties presented in writing, reading, spelling and practice in performing mathematical operations. It is worth mentioning that the attendance of the inclusion section does not consist of the teaching hours that the general class has for Art, Music or Gymnastics, as these were courses that help relax the students [44].

The students also have the right, following the recommendation of the KE.D.A.S.Y. To receive the program of parallel support, *i.e.* the student is supported by an accompanying special education teacher, speech therapist, occupational therapist throughout the school program, in order to be able to follow the school program effectively. Whereas, according to Law 4186/2013 (Government Gazette 193A), in case the student's family wishes it and can respond financially, there is the possibility of parallel private support, which is suggested and available by the student's family.

The parallel support teacher, receiving information from the parents and the class teacher about the student's needs and abilities, designs an individualized intervention program with the aim of the smooth integration of the student with ADHD in the school unit, in the acquisition of skills both cognitive and social with the ultimate goal over time, the development and autonomy of the student. The role of the parallel support companion is multiple and is not exhausted at the school class level, but plays a decisive role in the child's education in the school yard and on school trips [44].

### **1) The Role of the Teacher in the Integration of Students with SEN**

Educators play a prominent role in recognizing symptoms, making referrals to appropriate diagnostic agencies, and managing children's symptoms. Teachers are the first, after parents, who, during their daily contact with students, identify the symptoms of the disorder. The information they provide regarding the behavior, cognitive level, difficulties and functionality of the student, depending on the developmental level, is of great importance for the student's evaluation, while the information provided in combination with the evaluation result also the coexistence case [45] [46].

For the design and effectiveness of an intervention program, it is important that the teacher is aware of the difficulties that a student with ADHD may experience, as well as having knowledge of the appropriate behavior management programs for these students.

For the maximum possible integration of the student with ADHD into the school reality, their successful attendance and active participation in the learning process, the teacher is usually asked to take specific actions, such as placing the student with ADHD near him and away from places that can act as a distraction

for his attention, such as windows, the notice board where there are likely to be posted pictures and posters. In addition, the teacher must be aware that if the disorder includes hyperactivity, the child will not be able to remain still for a long time. Thus, it is recommended that the teacher suggest to the student to get up to erase the blackboard and to distribute the teaching material [20]. Additionally, the teacher needs to simplify the instructions and activities identified for students with ADHD, be short and understandable, and be appropriately structured.

In addition to managing students with ADHD, the teacher is called upon to manage the reactions of the other students and the climate created within the classroom, which plays an essential role in terms of the idea of inclusion. The teacher is called upon to help students to overcome the perceptions they have towards their classmates who are “naughty” and “lively” and to strengthen the creation of a cooperative climate, avoid any characterization, prevent stigmatization, praise and rewards students’ effort and acts supportively [47].

## **2) Self-fulfilling Prophecy and Classroom**

The term self-fulfilling prophecy was first found in Robert Merton’s textbook *Social Theory and Social Structure* published in 1949. The term refers to a false perception of the educator which, through a vicious cycle of unfortunate circumstances, turns out to be true. In the case of students diagnosed with ADHD, who typically tend to be unable to complete assignments and be well-read and exhibit deviant behaviors, the self-fulfilling prophecy lies in characterizing students as “lively,” “chatty,” “careless” and “bad students” [9]. The teacher, through the self-fulfilling prophecy, adopts a behavior that is not appropriate for dealing with the disorder, so he behaves in a way that triggers the symptoms of ADHD, as a result of which the wrong image he has of the student is verified. Specifically, if a teacher attributes the mistakes of students with ADHD to a lack of effort or willingness to cooperate, then these students have little chance of succeeding. The above dimension represents the negative side of the self-fulfilling prophecy [48].

Accordingly, if the teacher believes that students with ADHD can succeed, adopts supportive behavior, shows confidence in the students and their abilities, and understands that these mistakes are due to real weaknesses of these children, then the students seem to improve in terms of their behavior and school performance. So, this dimension is the positive aspect of the self-fulfilling prophecy and can bring about positive results. In addition, it has been established that changing the teacher’s attitude helps the child to be accepted by his peers [4] [20] [49].

### **a) The Attitudes of Typical Students towards Students with ADHD**

Research that has been conducted to investigate the issue of relationships that develop between typical students and students with ADHD demonstrates the existence of difficulties in their interpersonal relationships [50] [51]. The difficulty lies in the behavior they exhibit, as a result of the disorder. The impulsivity, the inability to follow the rules, the aggression and the lack of awareness of the con-

sequences of their behavior, both in the classroom and during the game, leads them to be rejected by their peers, with the result that in many cases they are targeted and be marginalized [52].

Usually, during adolescence, the symptoms of the disorder intensify and are likely to lead to conduct disorder, with the result that students with ADHD participate in groups with delinquent behavior, but also in criminal actions [53].

According to research, it is estimated that 56% of students with ADHD during their school life do not have a single friend, 33% have one friend and 9% have two friends [54]. While, it is interesting to review research on the treatment of children with ADHD by their classmates and the relationships they develop with each other, as it appears that the friendships these children develop are very small in number, so that they are not possible to draw conclusions [55]. At the same time, it seems that the friendly relationships that students with ADHD have with typical students tend to be one-sided; there are frequent and intense conflicts between them, while it is observed, in several cases, that students with influence on their classmates prevent the establishing relationships with the specific category of students.

#### **b) Differentiated Teaching and Detailed Program for ADHD**

Children diagnosed with ADHD have difficulty following instruction, particularly if it involves tasks that require attention and intense mental effort. For this reason, it is recommended that teachers diversify the teaching and classic teaching methods, so that students are motivated to learn and can respond as best as possible to the teaching process. Some of the practices that should be used are the use of multimedia during the learning process, the application of specific strategies in order to effectively complete their tasks, and also the mutual teaching method, where the classmates of students with ADHD will be used as teaching assistants. With this specific method, the cooperation of typical students with students with ADHD is promoted and the academic and social skills of the students are cultivated [15].

In addition, the differentiation of activities involves reducing the extent of the activity, so that the student sets a goal that involves a small amount of work and can be accomplished in a short period of time. High-volume assignments that require strenuous and lengthy mental effort discourage students, and in many cases they give up once they realize the amount of work they have to accomplish. Also, it is suggested that the educational material use colors, shapes and diagrams, which strengthen the visual memory and are visual stimuli that are easily decoded and at the same time arouse the interest and attention of the student with ADHD [15].

In addition, the instructions of the activities must be differentiated in the sense of simplification. In particular, the instructions regarding the preparation of a task must be given in a clear way, be simple, clear and short and if possible include one step at a time. The recommendation of differentiated instructions results from the finding that in many cases students with ADHD give incorrect answers, not because they do not know the correct answer, but because they are

unable to read the utterance with the required attention [15].

Another practice that strengthens the development of self-guidance is the repetition of the verbal instructions that the student has received from the teacher. In this way, it is ensured that the student understood what the teacher said, while the verbal repetition of the instructions during the execution of the task favors the development of the skill of self-direction, a skill which is very important as it promotes creative thinking and introduces the student in the concept of algorithmic thinking, *i.e.* the sequence of steps [15].

### 3. Research Methodology

#### 3.1. The Methodology

The research method chosen in this work is quantitative. Quantitative research aims at studying a social phenomenon and finding trends regarding it [56]. In particular, quantitative research follows a structured and linear form of development and attempts the systematic investigation of phenomena with statistical methods. After all, the purpose of quantitative research is to find relationships between various factors based on hypotheses that are verified or disproved through research [57] [58]. In the existing quantitative research, the data were standardized to be measured, so that the variables took a numerical value and through statistical analyzes the correlations were checked [56].

Specifically, in this work, research data was collected from a large representative sample of Special and General Education teachers, using a questionnaire as a tool, which has scales and predetermined closed-ended questions and answers. By using the quantitative method, the trends were analyzed, the groups of Special and General Education teachers were compared and the variables were correlated through statistical analysis. The processing of the results was carried out with statistical analysis methods and with the use of statistical tools, such as SPSS, in order to extract the results. The conclusions were drawn from the interpretation of the results and the comparisons of the defined variables. Finally, the results of the proposed research were interpreted by comparing them with pre-existing related studies [58].

It is worth mentioning that depending on the extent of the sample and the sampling method, convenience sample, random sample, it is possible to generalize the results to the wider population [59] [60].

#### 3.2. Sample—Participants

Conducting quantitative scientific research aims to generalize research results to a population or correlate research variables with respect to a population. Thus, the purpose is to gather and analyze information about the phenomenon under study. The study of the phenomenon involves sampling that is, submitting a number of people to questions, which help to investigate the research topic. In quantitative research and in order to be able to generalize the results, random sampling or convenience sampling is usually preferred [61].

The choice of the sampling method is of decisive importance, as the result of the research must be representative of the sample of General and Special Education teachers, but not of the entire population. Sampling methods vary and are divided into two major categories: probability sampling, where the sample is random, and non-probability sampling, where the selection of the sample is intentional [62].

In the present research, non-probability sampling was used, specifically convenience sampling or accidental sampling or convenience sampling) [62] [63]. Convenience sampling allowed the researcher easy access to the available sample group of 160 General and Special Education teachers. In particular, the sample was collected through the online questionnaire, where it was shared with public groups of the social media concerning teachers of General and Special Education and each teacher anonymously filled out the questionnaire online at his will.

168 Special and General Education teachers participated in the survey, of which 8 were removed either due to non-compliance with the terms of consent to participate in the survey or due to incomplete completion of the questionnaire. Thus, the final sample of the research consisted of 160 teachers, of which 36 were men and 123 were women. The sample was balanced, as it consisted of 79 General Education teachers and 81 Special Education teachers working either in general schools or in special schools of all levels of education.

### 3.3. Data Collection Tool

The research tool used in quantitative research is the questionnaire, which is a methodological tool of educational and social research that has either a printed or electronic form and in which the answers of each respondent are noted [64]. The aim of the questionnaire is the study of attitudes, opinions and perceptions and the drawing of conclusions, which depending on the sample that has been used, are generalized to the entire population. The form and content of the questionnaire has been structured before it is given for answering, while the questions take different forms (open, closed type), while their wording must be clear. Two types of questionnaires are commonly used, those that are filled in directly by the respondent and questionnaires that are filled in with the help of the researcher or someone else in charge [64].

In this specific research, therefore, where the quantitative method was used, the research tool played an important role, which was the means of measuring the variables, observing and documenting the quantitative data [58]. The electronic questionnaire, as a means of data collection, allowed the researcher to collect the necessary research data in a short period of time. Also, the researcher was given the opportunity to collect data from participants located in various geographical regions of Greece.

The selected research tool consists of two parts, in the first part there are closed-type questions concerning demographic data and in the second part there are closed-type questions concerning the investigation of teachers' beliefs. It is a translation and adaptation of the SACIE-R scale [14]. The adaptation of said

scale to a Greek sample was published by Vogiatzi, Charitaki, & Kourkoutas [65]. Permission, in order to use the SACIE-R scales in the proposed research as a means of data collection, has been taken. The questionnaire based on the SACIE-R scales consists of three scales, of which the first concerns the sentiments of teachers towards people with disabilities and/or educational needs, the second refers to attitudes) and teachers' perceptions regarding the inclusion of people with disabilities and/or educational needs in general classes and the third and last scale is related to the teachers' concerns regarding the inclusion of students with disabilities and/or educational needs in general school classes. Each scale consists of 5 questions, the answers to which are given on a Likert-type scale, where the participants indicate their degree of agreement by marking from 1 to 4 (where 1 means "completely agree" and 4 "completely disagree") [65].

The questionnaire was distributed online, as it was posted on the researcher's Social Media and on public e-groups of Special and General Education teachers, where it was available to be completed voluntarily by the participants. It is important to mention that all the personal data collected from completing the questionnaire was used exclusively for the research and was not shared with third parties.

### **3.4. Data Processing & Analysis**

In the case of quantitative research, the analysis of numerical data is carried out by statistical analysis, graphs in a simple form and, if necessary, more complex forms and calculations. Software programs were developed for the analysis and processing of the data and the extraction of results. One of the most popular programs that allow for combined analysis of the results is SPSS (Statistical Package for the Social Sciences) or SAS. More specifically, after completing the questionnaire, the collected data were entered into SPSS and processed [66]. At the beginning, a descriptive analysis of the data was carried out, where the categorical variables collected was analyzed through their frequencies and their relative frequencies. Then, the inductive analysis followed, where the corresponding parametric controls, such as T-test correlation, were applied.

### **3.5. Ethical and Ethical Issues in Research**

The issue of ethics and ethics in the research lies in maintaining the anonymity of the sample, the assurance that there will not be any leakage regarding their personal data, while usually the researcher/three assures the participants that they have the option to stop completing the questionnaire since they do not wish for their further participation in the research, without having any obligation to apologize for this choice [60].

One of the most basic ethical principles is to inform the participants about the research object and the purpose of the research, to recognize their right to free and voluntary participation in the research, without coercion [67]. A principle observed in this research, as the researcher followed the Code of Ethics of the College regarding anonymity and confidentiality of the personal data of the par-

ticipants. In addition, before the implementation of the research process, the researcher informed the participants through the informative message posted on her Social Media and the Information Form of the participants that accompanied the online questionnaire regarding with its identity, the purpose and methods of the research, while particular emphasis was placed on the fact that their participation in this research process is voluntary and that they can withdraw from it, whenever they wish. Meanwhile, the researcher to ascertain whether and to what extent the participants understood the object and process of the research and really wish to participate in it were asked to fill in the Consent Form.

The principle of anonymity and confidentiality ensures the protection of the identity of the research participants. In this research, only the demographic data of the participants were collected, without verifying their identity, as they were completed anonymously and online, without direct contact with the researcher. Whereas, at the end of the investigation, the data was destroyed. It is also worth mentioning that during the research process the participants were not put in any danger or suffered any kind of harm [68].

#### 4. Data Analysis and Discussion

This chapter presents the results of the 160 questionnaires obtained from the descriptive statistical analysis of the data using the SPSS statistical software program.

##### 4.1. Results of Descriptive Statistics of the Demographic Data

Of the 160 Special and General Education teachers who took part in the research, as can be seen in **Table 1**, the majority were women with a percentage of 77.5% (n = 124), while men made up only 22.5% (n = 36) of the participants. Regarding the age range of the survey participants, 37.5% (n = 60) belonged to the age group covering up to 29 years, 32.5% (n = 52) belonged to the age group from 30 to 39 years, the 17.5% (n = 28) belonged to the age group of 40 to 49 years, while 12.5% (n = 20) of the participants were aged 50 and above. Regarding the marital status of the participants, 53.8% (n = 86) were single without children, 1.9% (n = 3) were single with children, 15% (n = 24) belonged to the category of married without children, while 29.4% (n = 47) belonged to the category of married with children. Of the 160 teachers, 49.4% (n = 79) were General Education teachers, while 50.6% (n = 81) were Special Education teachers.

Of the 160 participating teachers, 16.3% (n = 26) worked in a kindergarten, 43.8% (n = 70) in a primary school, 30.6% (n = 49) in a middle school and high school, the 3.1% (n = 5) in a special nursery school, 1.3% (n = 2) in a special primary school and 3.8% (n = 6) in an ENEEGYL/EEEEK. Regarding their education, 47.5% (n = 76) of the participants had a university degree, 50.6% (n = 81) had a master's degree and only 1.3% (n = 2) had in possession of a Ph.D. It is observed that the majority of teachers, 90% (n = 144) have even once come into contact with a student with ADHD, while 10% (n = 16) answered that they have not come into contact with a student/three with ADHD.

**Table 1.** Demographic data.

Variable	Categories	Frequency	Rate
Sex	Man	36	22.5
	Woman	124	77.5
Age	Up to 29 years old	60	37.5
	30 - 39	52	32.5
	40 - 49	28	17.5
	50 and above	20	12.5
Home Status	Single, without children	86	53.8
	Single with children	3	1.9
	Married, no children	24	15
	Married with children	47	29.4
Specialty	General Education Teacher	79	49.4
	Special Education Teacher	81	50.6
School unit	Kindergarten	26	16.3
	Primary school	70	43.8
	Middle School/High School	49	30.6
	Special Kindergarten	5	3.1
	Special Elementary School	2	1.3
	ENEEGYL/EEEEK	6	3.8
	DA	2	1.3
Education	Higher Education Degree	76	47.5
	Postgraduate	81	50.6
	Ph.D	2	1.3
	DA	1	0.6
Contact with ADHD	No	16	10
	Yes	144	90
Vocational training	None	19	11.9
	Low	55	34.4
	High (at least forty hours)	86	53.8
Legislation	None	10	6.3
	Very small	34	21.3
	Moderate	51	31.9
	Good	40	25
Self confidence	Very good	25	15.6
	Too low	8	5
	Low	10	6.3
	Moderate	76	47.5
	High	56	35
Experience	Very high	10	6.3
	Nothing	12	7.5
	Low	37	23.1
	High	110	68.8
	DA	1	0.6

Regarding their training regarding the education of children with ADHD, 11.9% (n = 19) answered that they do not have any kind of training, 34.4% (n = 55) answered that they have little training, while 53.8% (n = 86) had a high level of training (more than 40 hours). Regarding their knowledge of the legislation for people with ADHD, 6.3% (n = 10) answered that they have no knowledge at all, 21.3% (n = 34) answered that they have very little knowledge, the 31.9% (n = 51) characterized the level of their legislative knowledge as average, 25% (n = 40) answered that their knowledge is good, while 15.6% (n = 25) answered that they have very good knowledge about the legislation of ADHD.

Regarding teachers' self-confidence to teach students with ADHD, 5% (n = 8) answered that they have very low self-confidence, 6.3% (n = 10) answered that they have low self-confidence, 47.5% (n = 76) described their level of confidence as moderate, 35% (n = 56) of teachers feel high confidence, while 6.3% (n = 10) feel very high confidence in teaching children with SEN-Y. Regarding the experience of teachers, either in a special or general school, or in an integration department, or as parallel support, regarding the teaching of people with ADHD, 7.5% (n = 12) answered that they have zero experience, 23.1% (n = 37) answered that they have a low level of experience, while 68.8% (n = 110) answered that they have a high level of experience.

#### 4.2. Descriptive Statistical Analysis of the Questionnaire Data

In the first statement "I worry that students with ADHD will not be accepted by the rest of the class" of the questionnaire which is a translation and adaptation of the SACIE-R [14] from the 160 participants, as also stated in **Table 2**, 3 answered "Strongly Agree", 62 "Agree", 84 "Disagree" and 11 "Strongly Disagree". The first statement has a mean of 2.64, a standard deviation of 0.64, a skewness coefficient of 0.03, and a kurtosis coefficient of -0.25.

To the second statement "I shudder at the thought that I could possibly become a person with ADHD" out of 160 participants 3 answered "Strongly Agree", 12 "Agree", 45 "Disagree" and 100 "Strongly Disagree". The second statement has a mean of 3.51, a standard deviation of 0.72, a skewness coefficient of -1.44, and a kurtosis coefficient of 1.64.

In the third statement "Students who find it difficult to express their thoughts verbally should attend regular classes" out of 160 participants 24 answered "Strongly agree", 116 "Agree", 20 "Disagree" and none strongly disagreed. The third statement has a mean of 1.97, a standard deviation of 0.53, a skewness coefficient of -0.03, and a kurtosis coefficient of 0.69.

To the fourth statement "I worry that it will be difficult for me to give adequate attention to all students in a participatory classroom" out of 160 participants 6 answered "Strongly agree", 76 "Agree", 68 "Disagree" and 10 "I strongly disagree." The fourth statement has a mean of 2.51, a standard deviation of 0.67, a skewness coefficient of 0.21, and a kurtosis coefficient of -0.21.

In the fifth statement "I make sure that the contacts I develop with people with ADHD are short and I complete my communication with them as soon as

**Table 2.** Descriptive statistical analysis of questionnaire on teachers' opinions about ADHD.

	Strongly Agree	Agree	Disagree	I absolutely disagree	M. O.	T. A.	S. Asym	S. Kyrst.
EP 01	3	62	84	11	2.64	0.64	0.03	-0.25
EP 02	3	12	45	100	3.51	0.72	-1.44	1.64
EP 03	24	116	20	0	1.97	0.53	-0.03	0.69
ER 04	6	76	68	10	2.51	0.67	0.21	-0.21
ER 05	0	21	67	72	3.32	0.70	-0.52	-0.82
ER 06	35	109	13	3	1.90	0.61	0.56	1.80
ER 07	5	77	73	5	2.49	0.61	0.05	-0.30
ER 08	15	50	82	13	2.58	0.77	-0.36	-0.22
ER 09	2	23	54	81	3.34	0.77	-0.83	-0.25
EP 10	6	66	73	15	2.61	0.71	0.10	-0.31
Q 11	0	7	41	112	3.66	0.56	-1.40	1.01
EP 12	17	121	20	2	2.04	0.53	0.56	2.41
ER 13	0	17	39	104	3.54	0.68	-1.19	0.12
ER 14	10	60	81	9	2.56	0.70	-0.26	-0.13
ER 15	25	106	16	13	2.11	0.76	0.96	1.21

possible" out of the 160 participants no one answered that they completely agree, 21 answered "Agree", 67 "Disagree" and 72 "I completely disagree". The fifth statement has a mean of 3.32, a standard deviation of 0.70, a skewness coefficient of -0.52, and a kurtosis coefficient of -0.82.

In the sixth statement "Students with ADHD should attend regular classes" out of 160 teachers, 35 answered "Strongly agree", 109 "Agree", 13 "Disagree" and 3 "Strongly disagree". The sixth statement has a mean of 1.90, a standard deviation of 0.61, a skewness coefficient of 0.56, and a kurtosis coefficient of 1.80.

To the seventh statement "I worry that my workload will increase if I have students with ADHD in my class" out of 160 teachers 5 answered "Strongly agree", 77 "Agree", 73 "Disagree" and 5 "Strongly disagree". The seventh statement has a mean of 2.49, a standard deviation of 0.61, a skewness coefficient of 0.05, and a kurtosis coefficient of -0.30.

In the eighth statement "Students with ADHD who need communication support techniques and tools (such as Braille/sign language) should attend regular classes", out of 160 teachers 15 answered "Strongly agree", 50 "Agree", 82 "Disagree" and 13 "Strongly disagree". The eighth statement has a mean of 2.58, a standard deviation of 0.77, a skewness coefficient of 0.36, and a kurtosis coefficient of -0.22.

To the ninth statement "I would feel bad if I were a person with ADHD" out of 160 teachers 2 answered "Strongly agree", 23 "Agree", 54 "Disagree", and 81

“Strongly disagree”. The ninth statement has a mean of 3.34, a standard deviation of 0.77, a skewness coefficient of  $-0.83$ , and a kurtosis coefficient of  $-0.25$ .

To the tenth statement “I worry that I will be more stressed if I have students with ADHD in my class” out of 160 teachers 6 answered “Strongly agree”, 66 “Agree”, 73 “Disagree” and 15 “Strongly disagree”. The tenth statement has a mean of 2.61, a standard deviation of 0.71, a skewness coefficient of 0.10, and a kurtosis coefficient of  $-0.31$ .

On the eleventh statement “I don’t have the courage to look directly at a person with ADHD” out of 160 teachers, none answered that they strongly agree, 7 answered “Agree”, 41 “Disagree” and 112 “Strongly disagree”. The eleventh statement has a mean of 3.66, a standard deviation of 0.56, a skewness coefficient of  $-1.40$ , and a kurtosis coefficient of 1.01.

In the twelfth statement “Students with ADHD who often fail tests should attend regular classes” out of 160 teachers, 17 answered that they “Strongly agree”, 121 “Agree”, 20 “Disagree” and 2 “I absolutely disagree”. The twelfth statement has a mean of 2.04, a standard deviation of 0.53, a skewness coefficient of 0.56, and a kurtosis coefficient of 2.41.

On the thirteenth statement “I find it difficult to get over the initial shock when meeting people with severe physical disabilities” out of 160 teachers, none answered that they strongly agree, 17 answered “Agree”, 39 “Disagree” and 104 “Strongly disagree”. The thirteenth statement has a mean of 3.53, a standard deviation of 0.68, a skewness coefficient of  $-1.19$ , and a kurtosis coefficient of 0.12.

In the fourteenth statement “I am concerned that I do not have the knowledge and skills needed to teach students with ADHD” by? 160 teachers, 10 answered “I completely agree”, 60 “I agree”, 81 “I disagree” and 9 “I completely disagree”. The fourteenth statement has a mean of 2.56, a standard deviation of 0.70, a skewness coefficient of  $-0.26$ , and a kurtosis coefficient of  $-0.13$ .

To the fifteenth statement “Students with ADHD who need an individualized education program should attend regular classes” out of 160 teachers 25 answered “Strongly agree”, 106 “Agree”, 16 “Disagree” and 13 “I absolutely disagree”. The fifteenth has a mean of 2.11, a standard deviation of 0.76, a skewness coefficient of 0.96, and a kurtosis coefficient of 1.21.

### **4.3. Validity and Reliability regarding Internal Consistency Reliability Analysis with Cronbach’s Alpha Index**

In order to ensure the correctness of the results during the research, it is considered necessary to check the reliability and validity of the measurement tool, regardless of its weighting or its creation for the needs of the research [69]. Reliability refers to the stability of obtaining the same results, then using the measurement tool in repeated measurements on the same sample and at different points in time. Also, a measuring instrument was considered reliable when in case of random error, it can be excused. Statistically, the reliability of the measurement tool is determined by the correlation coefficient ( $r$ ), which ranges from

a value of 0 to a value of 1.0. The closer the correlation coefficient is to 1.0 ( $r = 1.0$ ), the more reliable the measurement tool is considered to have. The correlation coefficient  $r \geq 0.7$  is considered as an acceptable level of reliability [70].

In this work, the reliability of the internal consistency of the measurements of the scales of the specific questionnaire was done through the reliability index or coefficient, specifically with Cronbach's  $\alpha$  index. Index values greater than 0.7 or 0.8 are usually considered satisfactory. The Emotions and Attitudes scale had a reliability index greater than 0.8, indicating very good internal consistency, while the Anxieties scale had a reliability index greater than 0.7, indicating good and satisfactory internal consistency [71].

It is worth noting that the validity and reliability of the research is checked in a variety of ways [72] [73]. Thus, the non-parametric Kruskal-Wallis and the linear Pearson correlation coefficient can be used, where it was a mathematical tool, which takes continuous values from  $-1$  to  $1$ . In cases where the coefficient approaches unity in absolute value, the correlation between of variables is considered strong.

A research instrument is valid when it has been used repeatedly with success in a population and when it conceptually covers the range of the variable it measures [70]. In order to conduct correct, reliable and valid results, it is important to have a sufficiently representative sample [68], so 160 Special and General Education Teachers took part in this research. Whereas, to ensure the validity and reliability of the administered questionnaire, it was drawn from the literature and checked for its validity and reliability [59].

Cronbach's  $\alpha$  index examines the reliability and internal consistency of the questionnaire scales. That is, it examines how stable the responses of the participants remained on the same scale, in the case of repeated measurements without the mediation of any factor influencing their responses. Index values Cronbach's  $\alpha$  greater than 0.7 or 0.8 are usually considered satisfactory. The Emotions and Attitudes scale, as recorded in **Table 3** in the last column, had a reliability index greater than 0.8, indicating very good internal consistency, while the Worries scale had a reliability index greater than 0.7, indicating good and satisfactory internal relevance [71].

## 4.4. Research Questions

### 4.4.1. Research Question 1

To test if there is a significant difference in the levels of emotions and concerns between General and Special Education teachers, the Mann-Whitney non-parametric test was applied. As can be seen from the Box-plot diagram, general education teachers have significantly higher levels of negative emotions than special education teachers,  $U (n_1 = 79, n_2 = 81) = 1848.5, p < 0.05$ . Similarly, a Box-plot diagram shows that general education teachers have significantly higher levels of concerns than special education teachers,  $U (n_1 = 79, n_2 = 81) = 1301.5, p < 0.05$ .

**Table 3.** Descriptive scale measures—reliability Cronbach's  $\alpha$  index.

Scales	No. Statements	M	SD	M	IQR	Cronbach's $\alpha$
Feelings	5	17.4	2.8	18	5	0.870
Worries	5	12.8	2.4	13	4	0.762
Stops	5	10.6	2.4	11	1	0.802

#### 4.4.2. Research Question 2

In order to check if there is a significant difference in the levels of attitudes and opinions between General and Special Education teachers, the non-parametric Mann-Whitney test was applied. As can be seen from the Box-plot diagram, special education teachers have significantly higher levels of positive attitudes than general education teachers,  $U (n_1 = 79, n_2 = 81) = 2154, p < 0.05$ .

#### 4.4.3. Research Question 3

From the following statements, as can be seen in the bar graphs below, one can derive information about the willingness of teachers to differentiate teaching and to design an individualized program with the aim of integrating students with ADHD.

It is observed that Special Education teachers have more knowledge about the legislation of the integration policy of people with ADHD, as their knowledge is from moderate to very good. On the contrary, the knowledge of General Education teachers about the legislative framework seems to be limited. Specifically, only 7.41% of Special Education teachers have very little knowledge, 28% characterize their level of legislative knowledge as moderate, 34.57% are recorded as having a good level of knowledge, while 29.63% have very good knowledge. It is worth noting that none of the special education teachers seems to be ignorant of the legislation on ADHD. On the contrary, a percentage of 12.66% of General Education teachers seems to have no knowledge about the legislative framework for the inclusion of SEN. It is observed that the percentage of General Education teachers who have very little knowledge of the legislation regarding ADHD and those who have moderate knowledge is the same, of the order of 35.44%. 15.4% of General Education teachers know the legislation well, while only 1.27% described their level of legislative knowledge on ADHD as very good.

#### 4.4.4. Research Question 4

From the bar graphs below, information is obtained regarding whether Special and General Education teachers are able to use co-educational techniques, in order to facilitate the learning process and, by extension, the social integration of students with ADHD in general classes school.

From diagram 8 it can be seen that General Education teachers express more concerns about their knowledge and skills to use inclusive education techniques. Specifically, 55.70% of General Education teachers expressed concern about not having enough knowledge and skills required to teach students with ADHD. Stated their agreement and 12.66% answered that they completely agree, while 30.38%

answered that they disagree with this statement and 1.37% expressed their absolute disagreement.

Of the Special Education teachers, 70.37% answered that they disagreed with the statement about the concern of insufficient knowledge and skills for teaching students with ADHD and 9.88% completely disagreed. While, 19.75% expressed their agreement regarding the specific statement.

#### 4.4.5. Research Question 5

The concerns of Special and General Education teachers, whether students with ADHD will not be accepted and will not be able to coexist with typical students, range at approximately the same levels. More in detail, as shown in diagram 11, of the Special Education teachers, 2.47% completely disagreed with the statement about the concern that students with ADHD will not be accepted by the rest of the class and 55.56% stated the disagreement, while 40.74% stated that they agree with this statement and 1.23% completely agreed. On approximately the same wavelength are the concerns of General Education teachers, as 11.39% disagreed completely, 49.37% stated their disagreement, while 36.71% agreed with the said statement and 2.53 % strongly agreed. It seems that the teachers of both categories are not so worried if the students with ADHD will be accepted by the rest of the class.

#### 4.4.6. Research Question 6

The demographic data of Special and General Education teachers seem to be factors that inhibit or enhance the creation of positive attitudes of teachers regarding the joint education of students with ADHD.

**Table 4** and **Table 5** list the correlations of demographic data with the General and Special Education teachers' feelings, concerns and attitudes scales. The feelings scale is not correlated with gender  $r_s(158) = -0.029, p > 0.05$ . The worry scale was not correlated with gender  $r_s(158) = -0.141, p > 0.05$ . There is a weak to moderate positive correlation between gender and attitudes  $r_s(158) = 0.232, p < 0.05$ , with females having higher levels of positive attitudes regarding the inclusion of students with ADHD in mainstream schools. Age was not correlated with any of the three scales. Married people show a weak to moderate positive correlation.

## 5. Discussion of Results

In this work, research questions were asked and answered regarding the opinions, attitudes, feelings and concerns of General and Special Education teachers regarding the inclusion of students with ADHD in mainstream schools.

1) *What are the feelings and concerns of Special and General Education teachers regarding the inclusion of students with ADHD? Do their feelings and concerns differ regarding the inclusion of students with ADHD?*

It is observed that general education teachers are more concerned than special education teachers and have less positive feelings regarding the inclusion of

**Table 4.** Correlation of demographic data with the feelings of anxiety and attitudes scales.

	Sex	Age	Singles/Eng.	Without/With children	School unit	(1)	(2)
Feelings	-0.029	0.069	0.042	0.094	-0.013		
Concerns (2)	-0.141	0.081	0.234**	0.126	-0.153	0.363**	
Attitudes (3)	0.232**	0.011	-0.170*	-0.041	-0.017	-0.179*	-0.332**

Note: \*\*p < 0.001.

**Table 5.** Correlation of demographic data with the emotions, anxiety and attitude scales.

	Education level	Contacts with ADHD?	level of training in ADHD	knowledge of SEN legislation	level of experience with ADHD	Self-confidence about ADHD
Feelings	-0.096	-0.281**	-0.406**	-0.383**	-0.487**	-0.364**
Worries	-0.412**	-0.206**	-0.487**	-0.548**	-0.304**	-0.569**
Stops	0.281**	0.304**	0.362**	0.356**	0.370**	0.330**

Note: \*\*p < 0.001.

children with ADHD in standard schools. A finding that seems to agree with the modern literature [1] which states that general education teachers show some kind of negativity towards the inclusion of students with ADHD in the standard school, usually due to their behavioral difficulties. The concerns of General Education teachers are related to their insufficient knowledge regarding the management of the behavior of people with ADHD and strategies for differentiating the educational material.

2) *What are the attitudes and opinions of Special and General Education teachers regarding the inclusion of students with ADHD? Do their opinions differ regarding the inclusion of students with ADHD?*

It seems that the attitudes of special education teachers regarding the inclusion of children with ADHD in regular classes are more positive than those of general education teachers. This research result confirms previous studies that state that general education teachers have limited views and attitudes towards the integration practice of children with ADHD due to insufficient information about the nature and severity of the disorder [1] [74].

3) *Are Special and General Education teachers willing to differentiate their teaching in order to promote the inclusion of students with ADHD in the general classroom?*

The results show that special education teachers are more willing than general education teachers to differentiate teaching in order to achieve the inclusion of people with ADHD in the inclusion class, a fact that is related to the knowledge of the legislative inclusion policy and the training them regarding the design of educational support programs, as also mentioned in the Greek literature [74].

4) *Do the Special and General Education teachers themselves think that they are able to use co-educational techniques, in order to facilitate the learning process and, by extension, the social integration of students with ADHD in general*

*school classes?*

According to the research results, as well as the literature, General Education teachers are more concerned than Special Education teachers that they are not able to use co-educational techniques in order to achieve the facilitation of the learning process for students with ADHD, a fact that lies in their limited self-confidence due to little experience in special education issues and their inability to manage children with ADHD [1] [74].

5) *Are Special and General Education teachers concerned that students with ADHD will not be accepted and will not be able to coexist with students without disabilities and/or educational needs?*

It is observed that both General Education and Special Education teachers are not particularly concerned about the acceptance of students with ADHD and that they will not be able to coexist harmoniously with students of typical development. A finding that seems to contradict existing research concerning the relationships of typical students with students with ADHD, who report difficulty in their interpersonal relationships due to the behavioral disorders of people with ADHD that often lead to their marginalization from their peers [52].

6) *Are the demographic data of Special and General Education teachers factors that inhibit or enhance a) the creation of positive attitudes of teachers regarding the joint education of students with ADHD and b) the implementation of co-educational programs?*

Following correlations of demographic data with the scales of feelings, concerns, and attitudes of General and Special Education teachers, it was shown that gender is not related to either the scale of feelings or the scale of concerns. There is, however, a weak to moderate positive correlation between gender and attitudes, with women having higher levels of positive attitudes regarding the inclusion of students with ADHD in mainstream schools. Age appears to be unrelated to any of the three scales. Modern literature emphasizes the correlation of teachers' demographic data with the formation of teachers' opinions and attitudes regarding the integration practice of people with ADHD [1] [74].

## 6. Conclusions

The purpose of this research was to examine the attitudes, feelings, and concerns of General and Special Education teachers regarding the inclusion of students with ADHD in mainstream schools and to what extent they differ from each other. According to the research findings, general education teachers have more concerns than special education teachers, while special education teachers are more positive regarding the inclusion of students with ADHD and the use of an individualized program. In addition, it becomes clear that inadequate training on special education issues and the acquisition of experience are factors that influence the attitudes and perceptions of general education teachers in particular. It seems in general that teachers maintain a positive attitude towards the inclusion of people with ADHD [75], but this does not necessarily mean that this ac-

ceptance is universal, as it is observed that the lack of knowledge and skills for the educational intervention of ADHD affect the feelings of general education teachers, who are concerned that their workload will increase and that they will not be able to cope. The results highlight the need to raise the awareness of the school community on disability issues, to train teachers, and to implement inclusion more effectively through the cultivation of positive attitudes and emotions of both teachers and students [1].

In this research, an attempt was made through the appropriate selection of a research tool—an online questionnaire, the collection of data from General and Special Education teachers, and the appropriate statistical analyzes to investigate and answer the research questions. However, it is useful to present the limitations and difficulties encountered during the conduct of the research in order to inform and facilitate in this way researchers who seek to carry out similar research. The primary goal regarding the sample was to gather only 160 Special and General Education teachers and no more, as due to Covid-19 the only way to reach teachers of all levels of General and Special Education was online. This fact had the effect of delaying the completion of the research process, as despite the fact that the questionnaire was posted in several public groups on the Social Media related to education, the participation of teachers was not particularly active. Thus, in order to gather the sample of 160 General and Special Education teachers, it was necessary to extend the time period for completing the questionnaires, otherwise, the limited number in the variety of questionnaire responses would have resulted in the sample not being representative and they could not generalize the results to the wider population, *i.e.* to all General and Special Education teachers working in Greece. For this reason, it is suggested that a larger sample of participants be used in a future study to yield more valid results.

At the completion of this research, several questions have been formulated regarding the opinions of the school community regarding the inclusion of students with ADHD in general schools that remain unanswered and which could be the subjects of some future research. Thus, proposals can be made for research on the views of General and Special Education teachers on the inclusion of people with ADHD in the case of multiple disabilities and comorbidities. Also, the opinions and feelings of typical students towards the inclusion of students with ADHD could be investigated. Finally, another research proposal is the examination of teachers' perceptions regarding the effectiveness of inclusion departments, the institution of parallel support, and the differentiation of teaching, in order to achieve the inclusion of children with ADHD in general classes.

### Conflicts of Interest

The author declares no conflicts of interest.

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