

Review on Vocational Training and Employment of Individuals with Autism Spectrum Disorder

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Abstract

Organizations have developed programs for the vocational training of adults with Autism Spectrum Disorder (ASD). Some programs reflect trends in the labor market. The interest of policy planning is focused on social perceptions and successful social and vocational inclusion.

Aim is the review of programs for vocational training and education-to-employment transition for adults with ASD and the provision of a critical evaluation of their results.

The study entailed a review of the relevant literature, starting from the 1980s, since before that time there had been no systematic state provision of vocational training. The inclusion criteria for the study were: (a) the sample included adults diagnosed with ASD, (b) the programs included interventions for vocational training and inclusion, models for teaching vocational and social skills in the context of supported employment.

Study revealed interesting findings related to vocational training and the inclusion prospects for adolescents and adults with ASD, which could further influence social protection planning and support measures for them. It showed that educational policy in the last ten years has included the vocational training and inclusion of individuals with ASD and, therefore, more flexible programs and alternative forms of independent living are being developed for them.

Social mentality plays significant role for the social and vocational inclusion of adults with ASD. Some steps might be opportunities for participation in vocational programs, their enrichment, vocational counseling and guidance, opportunities for continuous development of working skills along with INSET and counseling, financial support to employees and a consistent policy towards vocational inclusion.

Keywords: Autism Spectrum Disorder, vocational training, inclusion

1. Introduction

Autism Spectrum Disorder (ASD) affects verbal and non-verbal communication and social interaction. It is further characterized by stereotypical, repeated behavior patterns and interests as well as unusual reactions to sensory stimuli (American Psychiatric Association, 2013). The transition to adult life is one of the most important stages in an individual's life. In the field of psychology, the transition from adolescence to early adulthood is considered to be a distinct developmental stage, which is described with the term "emerging adulthood" (Shattuck, Roux, Hudson, Lounds Taylor, Maenner, & Trani, 2012; Clauss-Ehlers, 2014; Parham, 2014). Arnett (2000) claimed that such a transition takes place through the alternation of an individual's social roles, the end of schooling obligations and the process of starting a family. This transition also involves the emergence of three fundamental features, namely free will, the assumption of responsibilities and financial independence (Taylor, 2009). However, in the case of adults with ASD, the stage of "emerging adulthood" heralds major changes for them and their families (Szatmari, Bartolucci, Bremner, Bond, & Rich, 1989; Venter, Lord, & Schopler, 1992; Wetherby & Prizant, 2000; Howes & Goodman-Delahunty, 2014). The relevant literature reports three basic criteria for a successful transition for a young person with ASD. These are: social skills, cognitive ability and education (Kanner & Eisenberg, 1956; Rutter, 1967; Lotter, 1974). Emphasis has also been placed on a number of additional skills and traits, such as the development of interests and

competencies by individuals themselves (Schreibman & Pierce, 1993; Chalungsooth & Schneller, 2011). The broader social and cultural perspectives, as well as the supporting services received by pupils through the education system (Howlin, 1997; Hagner & Cooney, 2005; Gerhardt, 2008; Taylor, 2009) are also important factors for a successful transition to adulthood for a young person with ASD.

As regards the role of social services for adults with disabilities and the quality of such services, it seems that most of these services embrace the philosophy of early intervention so that the individual with ASD may slip into their new social roles smoothly (Hurlbutt & Chalmers, 2004; Heward, 2011). Following this rationale, services and agencies such as the U.S. Office of Special Education and Rehabilitation Services, with its “Bridges from School to Working Life” program (Heward, 2011), Individuals with Disabilities Educational Act (IDEA), with its “transition services” and “Individualized Transition Plan” (ITP) (Heward, 2011), the National Information Center for Children and Youth with Disabilities, with its “Guidance Plan for the Successful Transition of a Child with Disabilities to Adult Life”, and, finally, the Autism Society of America (ASA), with its “Individual Transition Plan”, have created transition models in order to facilitate those with ASD themselves as well as their families (Syriopoulou-Delli, 2011). Wehman (2014) has published a collection under the title “Autism, Transition and Employment: An Annotated Bibliography 2008-2014”. He summarizes and highlights research findings by different researchers on the issue of transition and employment of adults with ASD.

The role of School Vocational Guidance (SVG) services in the process of developing the vocational prospects of individuals with disabilities is considered to be very important. The basic aim of SVG is for pupils with disabilities to develop self-awareness skills, to be informed about the educational system, studies, vocations and socio-economic life, to receive guidance with career decisions and, finally, to experience the transition into vocational, economic and social reality as smoothly as possible (Association for the Psychosocial Health of Children and Adolescents: A.P.H.C.A, 2000). The presence of a vocational guidance counselor is particularly important for the successful vocational rehabilitation of a person with disability (Durand, 1990; Sperry & Mesibov, 2005; Leaf, Oppenheim-Leaf, Call, Sheldon, & Sherman, 2012).

In the last ten years, various agencies and organizations (e.g., INTERACT, MENCAP, Project SEARCH, etc.) in European Union member-states, Greece and the USA have developed a variety of programs for the vocational training of adults with ASD, such as those run by Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) and Life Skills Education for Students with Autism and other Pervasive Behavioral Challenges (LEAP), the Princeton Child Development Institute (PCDI), the Pacific Autism Center for Education (PACE), the Groden Network (the Vocational and Employment program) and the Cove Center, Autism Center for Excellence at Virginia Commonwealth. Their aim—to different extents and through different approaches—is to cultivate vocational, social and communication skills. Furthermore, some of these programs reflect new trends in the labor market, and aspire to ensure work for individuals with ASD following the model of supported employment (Howlin, Alcock, & Burkin, 2005; Roberts, 2012; Schall et al., 2015; Wehman et al., 2016).

Three criteria need to be fulfilled in order for the model of supported employment to be effective, namely, paid work, the existence of a fully equipped working environment and continuous support in order for supported employment to be effective (McClannahan, MacDuffy, & Krantz, 2002). Furthermore, a specialized supported employment program needs to provide the following services and forms of help to interested individuals with ASD: counseling; educational support and guidance; help with overcoming difficulties, such as communication problems with colleagues and employers; helping individuals to comply with social rules and to work independently; ensuring the individual remains in a post for at least six months, giving top priority to the individual’s personal job satisfaction, and finally, providing counseling services to the members of services employing adults with ASD (Hillier, Campbell, Mastriani, Izzo, Kool-Tucker, Cherry, & Beversdorf, 2007).

Models and methods for developing vocational skills that have been implemented by various agencies, as well as the prospects for the vocational training and inclusion of individuals with ASD are also examined in this study. The interest of policy planning is focused on social perceptions and successful social and vocational inclusion of adolescents or adults with ASD, rather than focusing only on their abilities and weaknesses.

2. Methodology

The literature review was guided by the following questions:

- 1) What programs have been developed internationally that aim at the vocational training of individuals with ASD?
- 2) In what ways are individuals with ASD supported in order to develop vocational and other skills and to ensure that such individuals are included in the open labor market?

The selection of the studies for the purpose of this paper was based on two criteria. First, the participants in the research study sample had to be adults (at least 18 years old) and diagnosed with ASD, and second, the programs had to include interventions for vocational training and inclusion, as well as models that teach vocational skills in the context of supported employment.

Research papers were found by searching through PubMed and National Institute of Health (NIH) publications, the official websites of the TEACCH and LEAP programs, MENCAP, the Autism Society of Oregon and PACE. In addition, other resources were found in the library of the University of Macedonia.

Some of these papers study the employability rates of individuals with ASD, or the significant factors involved in the job prospects of individuals with ASD. In particular, papers that followed up individuals during their post-secondary school development (Taylor & Seltzer, 2011) were studied, as well as papers that researched the under-employment of individuals with ASD compared to employment rates for individuals with other types of disabilities (Balladan-Gil, Rapin, Tuchman, & Shinnar, 1996; Howlin, Goode, Hutton, & Rutter, 2004; Eaves & Ho, 2008). In addition, papers regarding the increased employability of individuals with ASD during the period 2002-2006 were studied (Cimera & Cowan, 2009), as well as papers dealing with the high cost of services for finding employment posts for individuals with ASD (Howlin, Alcock, & Burkin, 2005; Cimera & Cowan, 2009). All these papers have contributed information and data on the vocational training and inclusion of adults with ASD.

18 vocational training programs were identified through the literature review, which had taken place in the USA, the UK, the EU and Greece during the period 1988-2013, as well as 10 vocational skill training models, which were developed in the period 2006-2013.

3. Literature Research Results

3.1 Vocational Training and Inclusion Programs for Adults with ASD

3.1.1 TEACCH

The TEACCH Program, has since 1989 provided individuals with ASD with the possibility of being trained and developing their vocational skills (Howlin, 1997). Vocational training takes place in an environment of supported rather than protected employment (Schopler, 1991; Trehin, 1998; Schopler, Yirmiyu, Shulman, & Marcus, 2001). There are two centers providing “TEACCH Supported Employment” currently operating in North Carolina. This program provides center members with long-term support in their work. Indeed, it was recently announced that the program now includes a five-day workshop on the transition of adolescents and adults with ASD and their ability to assume vocational, social and independent-living responsibilities. The workshop is open to trainers, psychologists, the specialized professionals employed by schools, individuals involved in the transition of individuals with disability, physicians and so on. The aim of the TEACCH Program is to provide the most comprehensive, high-quality education to trainees by offering both trainees and trainers the necessary qualifications.

3.1.2 Adult Life-Skills Program

The “Adult Life-Skills Program” has been implemented at Princeton Child Development Institute (PCDI) since 1987 (McClannahan et al., 2002). Adults with ASD participating in this program attend a vocational training workshop, while they are also trained in acquiring other skills, such as independent-living skills, communication skills, etc.

Intervention planning for each adult separately within the “Adult Life-Skills Program” starts at the age of 10 years. Furthermore, the type of program that candidates follow is based on an assessment of future work options and an organization of their daily routine, as well as their interests and prospects for social participation (McClannahan et al., 2002).

Regarding the structure of the vocational training program, adults with ASD are prepared to work in supported employment posts. However, if the person has health or behavioral problems that might prevent them from being employed in such a post in an enterprise, the PCDI offers them the possibility of working in the Institute itself.

The vocational training of adults with ASD is the responsibility of “life-skills coaches”, i.e., of life-long supporting counselors. Interventions are not only related to the development of an adult’s with ASD vocational skills, but also to the organization of their daily life routine. In the practical part of the training, the “life-skills coaches” accompany trainees to their workplace, since the training is on-the-job in order to ensure that the trainer provides the trainee with feedback throughout the training period (McClannahan et al., 2002).

According to the results of the program’s assessment, 73% of the adults who participated in it managed to work in suitable jobs for the whole period for which they received the program services. However, their jobs were usually part-time (McClannahan et al., 2002).

3.1.3 PACE

The PACE implements a program for the vocational training of adults with ASD. The participants are trained to acquire independent living skills and to achieve vocational training and inclusion. The program also offers its members the opportunity to acquire practical experience in actual employment environments (Syriopoulou-Delli, 2011).

3.1.4 LEAP-Maryland Career Development Framework

The LEAP Program at the University of Maryland offers 12-month programs that teach students functional skills. The LEAP Program also trains its students *-inter alia-* in vocational skills. Lessons are offered on an individual basis or in groups. Besides lessons, students receive services from other specialized professionals, such as speech therapists, occupational therapists, counselors, etc. Furthermore, when students become 16 years old, they participate in extramural programs. In this way, vocational skills for the entrepreneurial sector are developed (Strain & Hoyson, 2000).

3.1.5 Autism Society of Oregon

The Autism Society of Oregon provides vocational skills training to young persons and adults with ASD. The center not only aspires to include individuals with ASD themselves but also their families in the community. Frequent workshop and seminars are held for parents, while every summer holiday occupation programs are run for both children and adults (Syriopoulou-Delli, 2011). Indeed, the center maintains relationships with enterprises, organizations, community services and various agencies so that adults with ASD can find a job and become actively involved in the community.

3.1.6 Groden Network Vocational and Employment Program

The Groden Network Vocational and Employment Program provides youths with ASD (from the age of 14) and young adults with vocational training program. The program helps people to discover their interests and to develop working skills. People have the opportunity to develop vocational practical skills in laboratories and in the community. As soon as a person shows a preference for a particular type of work, intensive vocational training and social skills necessary for vocational inclusion are provided (Syriopoulou-Delli, 2011).

3.1.7 Cove Center Program

The Cove Center Program is aimed mainly at the social inclusion of adults with ASD. Adults who participate in training are also involved in paid or non-paid work in the community. Adults undergo vocational evaluation and then vocational targets are set for their work in the community. The program provides training while people are occupied in a vocation in order to develop appropriate behavior (Syriopoulou-Delli, 2011).

3.1.8 Autism Center for Excellence at Virginia Commonwealth

Supported employment is an integrated model of employment, workers with disabilities are assisted throughout the employment process. A job coach may assist the individual to find a job, train for the job, and maintain employment through individual supports and accommodations (Parent, 2004). Supported employment aims to place people in jobs that earn competitive wages, though in practice this is not always the case. Supported employment is grounded in the philosophical concept of self determination. It is based on core values, which emphasize the right to work, capacity to perform a job, individual strengths, personal goals and choices, and role of community in the person’s growth and development (Wehman et al., 2003).

Customized employment aims to place individuals with disabilities in jobs earning competitive wages (Callahan, 2002; Parent, 2004). The term was first defined by the Office of Disability Employment Policy (U.S. Department of Labor). Customized employment embraces a “person-centered” approach. It begins with the person’s needs, aspirations, talents and skills, which serve as a basis for contacting potential employers (Inge, 2008b). Additionally, it emphasizes the person’s choice and strengths and abilities (Inge, 2008a, 2008b). In customized employment, jobs are negotiated so that they best fit the individual, while individuals are placed in competitive settings and receive supports that match their individual needs. In the United States, this model is employed in One-Stop Service Delivery Systems (Blanck et al., 2009; Inge, 2008b), in which workforce investment, education, and other human service programs collaborate to enhance access to services and long term employment outcomes (United States Department of Labor, 1999). Wehman et al. (2016) in a recently published study provides a retrospective review of 64 individuals with ASD who came to the program of the Autism Center for Excellence at Virginia Commonwealth from 2009-2014 for supported employment services as referred by the state vocational rehabilitation services agency. The majority of individuals successfully integrated employment through the use of supported employment. In all cases the jobseeker directed the job search and ultimately the job selection.

3.1.9 Project SEARCH

Project SEARCH was developed at Cincinnati Children’s Hospital Medical Center since 1996. Erin Riehle, the Director of Cincinnati Children’s Emergency Department felt that, because the hospital served individuals with developmental disabilities, they should commit to hiring people in this group. She wondered if it would be possible to train people with developmental disabilities to fill some of the high-turnover, entry level positions in her department, which involved complex and systematic tasks such as stocking supply cabinets. As a starting point, Erin presented her ideas to Susie Rutkowski, then the special education director at Great Oaks Career Campuses. Erin and Susie formed a partnership that was instantaneous, and together they launched Project SEARCH. Since its inception, Project SEARCH has grown from a single program site at Cincinnati Children’s to over 300 sites across the United States and Canada, England, Scotland, Ireland, and Australia. Project SEARCH’s primary objective is to secure competitive employment for people with disabilities (<http://www.projectsearch.us/About.aspx>. Retrieved 27. 6. 2016).

3.1.10 INTERACT

There are services and organizations that are active in the sector of vocational training for persons with disabilities in Great Britain. INTERACT is one of these organizations. It offers services that focus on teaching social and communication skills, problem-solving skills and vocational training for individuals with ASD who attend college (Howlin, 1997; Smith, Belcher, & Juhrs, 2000; Smith, Laird, & Smith, 2001). In the vocational training sector, adults with ASD practice some work skills in protected employment structures, while they learn to be punctual and consistent in the performance of their tasks.

3.1.11 MENCAP: Employ Me

MENCAP for mentally handicapped is another organization that is active in the field of vocational training for individuals with disabilities. The vocational training includes appropriate instruction for persons with disability in the skills of finding paid employment (MENCAP, 2014). Furthermore, during their training, students have the opportunity to visit actual work places. With the help of counselors, they go through “situations vacant” advertisements, whilst receiving appropriate support and help from their “job-coaches” in order to acquire new skills and learn how to manage various situations at their work place.

3.1.12 Prospects

“Prospects” is another service based in Great Britain that focuses mainly on the vocational training of adults with ASD or high-functioning autism, Asperger’s. This service was initially established in London in 1997 and it now has branches in three more cities (Howlin et al., 2005; Taylor, 2009; Taylor & Seltzer, 2011). “Prospects” trains adults with ASD to work in supported employment structures rather than protected ones. Prospects’ services focus on vocational training, finding employment and providing employment support. Particular attention is paid to selecting suitable jobs for individuals by assessing their cognitive competence and education (Howlin et al., 2005).

3.1.13 Handicapped People in the European Community Living Independently in an Open Society (HELIOS I and II)

HELIOS I was the first program established at a European level for the vocational rehabilitation and re-adaptation, independent living and social and economic inclusion of persons with disabilities (Ministry of National Education and Religion, 2000; Dellasoudas, 2004). Its program activities lasted for three years (1988-1991) (Ministry of National Education and Religion, 2000) and its eventual aim was to create four networks: the Re-adaptation Centre (a network of vocational training centers and training or re-adaptation experience) and three Model Local Activity networks (MLA) related to school, economic and social inclusion (Dellasoudas, 2004).

The results of HELIOS I were considered constructive. Almost all of the goals and aspirations that were set out at the beginning of the program were achieved within the three-year period (Dellasoudas, 2004). The success of this program led to the institution of HELIOS II (1993-1996), with program activities that focused on prevention, functional re-adaptation, education, economic inclusion, social inclusion and independent living, as well as social, economic and legal protection and personnel training (Dellasoudas, 2004).

3.1.14 HORIZON

At about the same time, the HORIZON Axis Program of the EMPLOYMENT Community Initiative was also initiated. Its activities took place in two phases (1st Phase: 1995-1997 and 2nd Phase: 1997-1999) (Ministry of National Education and Religion, 2000). The aim of the program was to improve employment conditions for persons with disabilities, to ensure the participation of the persons themselves in the planning of such new programs and to raise public awareness of the attempts made by society to actively include individuals with disabilities (Ministry of National Education and Religion, 2000).

3.1.15 Agency for Special Social Groups

The Greek Manpower Employment Organization (OAED) has provided programs for the training of adults with disabilities, for subsidizing young self-employed individuals and for subsidizing employers to hire persons with disabilities (Ministry of National Education and Religion, 2000). Through such services, in the period 1997-2000, a total of 9,359 persons with disabilities found employment (Ministry of Labor and Social Security, 2004).

3.1.16 Operational Program for Education and Initial Vocational Training (EPEAEK) and Employment Promotion Centers (K.P.A.s) (1997-1999)

The EPEAEK, funded by the 2nd Community Support Framework, contributed to the creation of a number of agencies and actions related to vocational rehabilitation for individuals with disabilities (Ministry of National Education and Religion, 2000).

At the same time, the K.P.A.s were active in promoting the vocational inclusion of individuals with disabilities (Ministry of Labor and Social Security, 2004).

3.1.17 Equal Initiative (2000-2006)

The contribution of the EU's Equal Initiative to the vocational development and activation of individuals with disabilities was significant. This initiative was financed by the European Social Fund and the aim of its actions was to implement, on an experimental basis, and disseminate new ways of combating discrimination and inequality in the employment sector (Ministry of Labor and Social Security, 2004).

3.1.18 National Plan for Social Inclusion (2001-2003)

In June 2001 the Greek government proposed a National Plan for Social Inclusion based on European policy and collaboration. The aims of the Plan were: "*inclusion in the labor market and securing access to basic social goods and rights (health, education, housing, etc.) through sector policies; preventing poverty and social exclusion risks, and mobilizing all related public and private agencies*" (Ministry of Labor and Social Security, 2004). Individuals with disabilities were one of the Plan's six target-groups.

Table 1. Comparative review of ASD vocational training and employment inclusion programs

Vocational Training and Inclusion Programs for Youths and Adults with ASD
USA
- Treatment and Education of Autistic Related Communication Handicapped Children (TEACCH) (since 1989)
- Adult Life-Skills Program at Princeton Child Development Institute (PCDI) (since 1987)
-Pacific Autism Center for Education (PACE)
-Life Skills Education for Students with Autism and other Pervasive Behavioral Challenges (LEAP)—Maryland Career Development Framework
-Autism Society of Oregon
-Groden Network Vocational and Employment
-Cove Center Program
-Autism Center for Excellence at Virginia Commonwealth
-Project Search
Great Britain
-INTERACT
-MENCAP-Employ me
-Prospects (since 1997)
Greece
-Handicapped People in the European Community Living Independently in an Open Society [HELIOS I (1988-1991) & HELIOS II (1993-1996)]
-HORIZON (1 st Phase: 1995-1997 and 2 nd Phase: 1997- 1999)
-Agency for Special Social Groups [The Greek Manpower Employment Organization (OAED)]
- Operational Program for Education and Initial Vocational Training (EPEAEK) and Employment Promotion Centers (K.P.A.s) (1997-1999)
- Equal Initiative (2000-2006)
- National Plan for Social Inclusion (2001-2003)

3.2 Models to Develop Vocational Skills in the Context of Supported Employment

3.2.1 The Job-Coach Model

TEACCH presents four models for teaching vocational skills in the context of supported employment: (a) the One-to-One Model, (b) the Mobile Crew Model, (c) the Group Shared Support Model and (d) the Standard Model (Trehin, 1998). Each of these models follows the “job coach” model. In this approach, a “job-coach” is a trained professional who accompanies adults with ASD to their work place and trains them in vocational and social skills. At the same time, the “job-coach” informs and trains the colleagues of such adults to deal with the new working conditions.

In a joint paper Lattimore, Parsons and Reid (2006) present the results of a comparison between the two methods based on the “job-coach” model: the “job-site training” and the “job-site training plus simulation” methods. In the former case, the training takes place while the person is working under systematic guidance, whereas in the latter, adults receive basic training outside working hours, at premises adjusted to recreate the conditions of their actual working environment. The advantage of the latter method is that the trainer (job-coach) can give additional instructions to the trainee, while the latter can demonstrate their newly-acquired skills over and over again. This is not possible in the case of “job-site training” because the posts in which participants were employed were part-time and, therefore, there was a time shortage limitation (Lattimore et al., 2006).

The same researchers, having already assessed the effectiveness of the “job-site training plus simulation” method in vocational skill training for adults with ASD, wanted to study the impact of the length of training. More specifically, they raised the question of whether “job-site training plus simulation” would be as effective if it

were carried out along with skills acquisition lasting one day rather than gradually in the course of a week (Lattimore, Parsons, & Reid, 2009). This question arose from the fact that “job-site training plus simulation” performed in one day had impressive results in helping trainees to acquire other skills, such as social skills and self-reliance skills (Lattimore et al., 2009). Research results showed that implementing the “job-site training plus simulation” method in one day was effective. Of course, it was noted that the experience of trainers in adult education was a fundamental factor for the success of this method (Lattimore et al., 2009).

3.2.2 Video Modeling

A number of studies looked into the advantages of the “video modeling” method as a means of vocational skill training (Allen, Wallace, Greene, Bowen, & Burke, 2010; Kandalaf, Didehbani, Krawczyk, Allen, & Chapman, 2012). The participants, in Allen et al.’s study, were an adolescent and two adults and the aim of the study was for them to wear a “walk-around costume” through which were shown various video clips teaching predefined skills. The skills that were taught included engaging with customers and promoting a product in a retail shop (Allen et al., 2010).

All participants performed at a higher level than the benchmark that was set by researchers; indeed, participants recommended that other adults with ASD should try this training method (Allen et al., 2010; Kandalaf et al., 2012). Although the “video modeling” has proved to be effective, there are some operational problems, such as the limited number of participants and the fact that this type of training cannot secure a permanent employment position (Allen et al., 2010). Still, the acquisition of vocational skills through video and role-playing games are regarded as the most successful methods, in contrast to the live demonstration of skills by the trainer (Howlin, 1997).

Table 2. Models to develop vocational skills in the context of supported employment

Models to develop vocational skills in the context of supported employment
-The Job-coach Model
-TEACCH
-Video Modeling

4. Discussion

McClannahan et al. (2002) showed that the majority of individuals with severe or multiple disabilities, such as individuals with ASD, are placed and occupied at day-centers, at pre-vocational centers or protected workshops. However, when such a tactic is pursued, very few manage to find employment in the labor market, while most of them reach a dead end. The situation thus created is considered to be harmful for adults with ASD.

On the other hand, supported employment offers adults the opportunity to acquire and improve skills that might lead to active inclusion (Wehman et al., 2016). Still, there are cases where individuals with ASD do not manage to meet the requirements of supported employment, whereupon they reach a dead end again. The reasons why many adults with ASD often change jobs include inappropriate work behavior, lack of social skills, inability to perform and complete tasks, a slow working pace and the enterprises’ recommendations that the individual should change their working environment (Sperry & Mesibov, 2005; Turner-Brown, Perry, Dichter, Bodfish, & Penn, 2008; Leaf et al., 2012).

The “Prospects” service makes use of special tactics in the selection of posts. This service selects an employment position for each adult based on two features: the adult’s cognitive competence and their education (Howlin et al., 2005; Turner et al., 2008). Cognitive competence, social skills and education were the three factors highlighted by Kanner and Eisenberg (1956), Rutter (1967) and Lotter (1974) as being significant for the successful transition into adult life of a young person with ASD. The six active agencies (TEACCH, PCDI, Groden Network, Cove Center, Prospects and Autism Center for Excellence at Virginia Commonwealth) in this field that support adults with ASD so that they can enter the open labor market, have achieved significant progress in the employment sector. Firstly, their programs provide, to a sufficient extent, the services a vocational support program should offer, as reported in the research papers by Hillier et al. (2007) and Wehman et al. (2016).

Secondly, the competences of their supporting counselors, i.e., their “job-coaches”, are not restricted merely to planning interventions, but also include teaching new skills regarding the adults’ daily living routines. Moreover,

their further training seminars, combined with feedback and their annual assessment report, form an integral part of their professional work. Additionally, as we have already noted in the case of models for the acquisition of vocational skills, the training and specialization of trainers have been acknowledged to have a catalytic effect on the successful outcome of intervention schemes.

Furthermore, the research carried out by Howlin et al. (2005) shows that the direct consequence of the activation of all these organizations was to increase the number of jobs for individuals with ASD. Of course, individuals who found employment through Prospects lost many of their social-economic privileges and allowances. However, their income increased, so no significant change or financial difficulty was actually encountered. It should be noted that the percentage of women with ASD who contacted job-finding agencies increased significantly. Even so, according to the study sample (Howlin et al., 2005), very few managed to make friends within their working environment and a mere 7 of the 192 studied met with their colleagues outside working hours.

Overall, the views expressed by individuals with ASD, their superiors, employers and counselors indicate that Prospects' services had a positive impact on all those involved in the procedure. Initially, 59 of the 89 adults who received the services provided by Prospects, in the period 2002-2003, were still employed in the same post when the research was carried out (Howlin et al., 2005). Furthermore, those who had been working with Prospects before their managed to find a better job and obtain higher salaries. The majority declared that they were happy with the service and that they would not have been able to achieve this without the support provided by Prospects (Howlin et al., 2005).

A significant improvement concerning the methods of teaching vocational skills was observed. Nevertheless, teaching models are an object of continuous investigation and renewal. As mentioned above, it is important for a training program for individuals with ASD to combine practical functionality with the training methods that are used.

Customized employment approach applied by Autism Center for Excellence in Virginia showed significant results (Wehman et al., 2016) all vocational rehabilitation ASD served successfully secured competitive integrated employment and maintained their employment with ongoing supports, with intensity of support time increasing over time through the use of supported employment. In all cases jobseeker directed the job search and ultimately the job selection.

According to Law 3699/2008, the aims of special education also include: "*inclusion in the educational system, social life and vocational activity corresponding to their potential (meaning pupils with disability and special educational needs)*" (Article 2) (Governmental Gazette, 2008). Vocational activation and rehabilitation for an adult with disabilities should be one of the priorities of a welfare state. Under the recent law on Special Education passed in 2014, as well as under Law 3699/2008, vocational inclusion, recognized and protected constitutionally, could be feasible under certain prerequisite conditions. This literature review has raised various issues and has given food for thought about the vocational training and inclusion of adults with ASD and, in particular, the necessary prerequisite conditions for maximum independence that individuals with ASD may claim.

Although the object of the literature review was the vocational inclusion and rehabilitation of adults with ASD, the issue of proper planning for transition to adult life seems to be essential for successful and independent growth. The proposal by IDEA, ASA, the U.S. Office of Special Education and Rehabilitation Services and the National Information Center for Children and Youth with Disabilities regarding the creation of a transition plan for every child with ASD at the age of 16 is a supplementary idea, as well as a significant guide for the individuals themselves and their families. When the assistance and supporting services of the educational system are left behind, parents have to face the absence and insufficiency of services for adults with autism. Therefore, drafting a transition plan for the child and making proposals for vocational rehabilitation, supporting services and independent living reduce the fear of the unknown. It is, therefore, clear that, in the case of developmental disorders, early intervention is as significant and necessary as life-long support and intervention are.

As for the vocational activation and rehabilitation of adults with ASD, views vary. Progress has been made regarding the inclusion of adults with autism in the labor market. Whether they are satisfied with their work or consider the job they hold as their only option is another matter. It does not seem to be too difficult to create the conditions and infrastructure to enable individuals with disability to be employed; what is difficult for them is to find a type of work that gives them job satisfaction.

As indicated in the research by McClannahan et al. (2002), supported work is not a panacea. Without the appropriate infrastructure and detailed planning, adults with ASD may once again find themselves at a dead end and may abandon their efforts to be included in the labor market. Furthermore, the development of further skills should be provided with work inclusion, such as the ability of individuals with ASD to feed and dress themselves. The greatest difficulty encountered by adults with ASD is to overcome their communication deficits. This is why it is important for them to learn techniques to manage their communication and social problems at an early stage.

Finally, when the data of the literature review were collected, it was apparent that the heart of the problem of vocational training and inclusion for adults with disabilities lies within society itself. Therefore, interest shifts to society, since implementing the educational, social and vocational inclusion of individuals with disabilities requires joint efforts, awareness, care and acceptance (Frey, Balzer, & Ruppert, 2014; Ronald, 2014; Guilbert, Bernaud, Gouvernet, & Rossier, 2014). If the European Union's 2010-2020 strategy for disability is based on the principle "Nothing for the Disabled without the Disabled", society itself has to remove any stigma and become a pioneer in the struggle to demand equal opportunities for all its members to lead independent lives.

Social mentality plays significant role for the social and vocational inclusion of adults with ASD. This literature review has revealed that, among other things, adults with disabilities are a ghost-problem for every society. A society that would confine adults with disabilities to their homes, day centers, hospitals or institutions does not show respect to its members' individuality and that leads to the creation of social inequalities (Frey et al., 2014; Ronald, 2014; Guilbert et al., 2014). Some steps might be opportunities for participation in a variety of vocational programs, enrichment of vocational programs with social and life skills, vocational counseling and guidance of youth with ASD, opportunities for continuous development of working skills along with INSET and counseling, financial support to employees and a consistent policy towards vocational inclusion.

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