



Social Skills and Cognitive Training to Support Work-Related Skills and Job Placement in a Group of Autistic Adults

Effectiveness of a Neuropsychological and Social Skills Intervention: A Case Series Study on a Pilot Program

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Received: 21 March 2023 / Accepted: 29 May 2023 / Published online: 15 June 2023
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Abstract

Autistic people may have difficulties in finding and keeping a job. Studies highlight that only 34% of autistic people are employed compared to 54% of people with disability. 58% of people with ASD have never had a job. Social cognition and cognitive strains may also have a significant impact on working life. The primary goal of our project is supporting autistic people through a training program focused on neuropsychological and social skills training to improve participant's job skills. Through an Individual Placement and Support model the project involved various Partners to guide, identify skills and interests, provide cognitive and psychological support for autistic people. Results highlighted neuropsychological training efficacy, especially in inhibitory control and good rate of employment status at the end of the project. Findings are encouraging and underline the importance of a multidisciplinary approach to support autistic people in their work life considering their expectations, needs and inclinations.

Keywords Autism · Work · Job placement · Neuropsychological training · Social skills training

Introduction

Autism Spectrum Disorders (ASD) are neurodevelopmental disorders characterized by persistent deficits in communication and social interaction, restricted and repetitive patterns of behavior, interests, or activities and sensory hypo or hypersensitivity (APA, 2013). Autism can be defined as a neurodiverse way of facing difficulties of adaptation in working contexts. Adults with ASD find themselves facing various trials throughout their life and, one of the most difficult is finding a job (Hillier, et al., 2007).

Recently, job placement for autistic people has been a matter of great interest from research and from public and private institutions due to the economic impact of unemployed people on public spending. In Western countries, ASD adults' labor force participation rate is 34% compared to 54% of people with disabilities and 83% of people without disabilities (Howlin, et al., 2004; Howlin & Moss, 2012). An American study from Drexel University reports that young adults with ASD have the lowest employment rate compared to other disabilities. Indeed 58% of people with ASD have never had a job (Roux, et al., 2017).

Finding and maintaining a job is demanding for ASD people, even with or without cognitive lack (Frank, et al., 2018). Additionally, follow-up studies of employed people have found that the majority of jobs held by people with ASD are unskilled and poorly paid. They are typically part-time employed and work an average of less than thirty hours a week (Baldwin, et al., 2014). In their research, Muller and colleagues (2003) interviewed ASD people and as a result they evidenced long periods of unemployment and/or under-employment. Consequently, this job status leads to smaller opportunities for career advancement.

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In Italy, in order to look for a job, the Law n°68/1999 established the Targeted Placement, a legal arrangement that allows people to obtain support from the State. This law applies indistinctly to people with disabilities including ASD people. Moreover, it allows companies to employ people who benefit from Law n°68/1999. Nowadays, the employability rate of people with disabilities available in Italian context also includes autistic people. Only 31.3% of people with disabilities aged between 15 and 64 are employed compared to 57.8% of people without disabilities, in the same age range. Furthermore, females with disabilities are more disadvantaged: only 26.7% of women with disabilities are employed compared to males' rate of 36.3% (Istat, 2017).

Research suggests that cognitive and social interaction difficulties as well as core symptoms are barriers to career success for ASD people (Brighenti, et al., 2018; Hillier, et al., 2007; Baker-Ericzén, et al., 2018).

Cognitive functioning, especially executive functions and social skills are described as “soft skills” in work contexts, and it has been highlighted that deficits in these areas create difficulties in finding and keeping a job (Hillier, et al., 2007; Mawhood and Howlin, 1999). Establishing and maintaining a conversation, communicating one's needs, and interpreting facial expressions are several social skills difficulties that autistic people can face in the workplace (Chen, et al., 2015). Few studies consider both neurocognitive and social skills training to enhance employability of ASD people. A pilot study from Baker-Ericzén and colleagues (2018), despite a small number of people, found employment rates doubled after the intervention, with an increase from 22 to 56%.

The traditional model for job placement is the “*Train and Place*” (Jäckel, et al., 2017; Corrigan & McCracken, 2005). This model provides preliminary training before job placement; the effectiveness of this model is estimated at 30% in terms of employability (Marshall, et al., 2014). Recent studies demonstrated greater effectiveness of a new model of job placement, called “*Place and Train*” (Wehman & Moon, 1988, Corrigan PW, McCracken SG. 2005), consisting of simultaneous job placement and training, from which the Individual Placement and Support model origins (IPS; Becker and Drake, 2003; Swanson & Becker, 2011; Fioritti and Berardi, 2017). The IPS model, which inspired our project, aids people in finding a job in a relatively short time. Additionally, based on the characteristics of the person, individualized training and job-related support is provided

(Wehman & Moon, 1988) to allow people to adequately keep the work. Rather than a preliminary training (as in “*Train and Place*” paradigm), a joint support to the company and the worker through a series of specific adaptations for the person and support actions is given both inside and outside the company (Marchisio & Curti, 2019).

Latimer et al. (2006) showed that with the IPS model results are more than double in terms of job placements on the competitive market compared to the “*Train and Place*” method.

Methods

Participants

The project was implemented in Italy, in the City of Turin, Piedmont Region. A specifically job-placement team was involved in the projects. Participants were recruited from the Regional Adult Autism Center and supported by 2 psychologists. For all participants a diagnostic assessment according to Multistep Multinetwork Model (Keller, et al., 2020) was provided. Other involved partners were Abele Lavoro Social Consortium and the Emilio ETS. 10 people with ASD, 2 females and 8 males aged between 21 and 37 years (see Table 1) were involved. 9 people were diagnosed with ASD level 1 (according to DSM-5) with Intelligent Quotient (IQ) > 70 and 1 with ASD Level 2 (according to DSM-5) with IQ < 70 and speech impairment.

Phases of the Project

Career Guidance, Project Promotion and Internship Search

The project involved several phases (see Fig. 1). At the beginning, participants were involved in group meetings organized by one of the Partners (Consorzio Abele Lavoro). These groups were conducted by two counseling psychologists and aimed to identify one's own skills and professional interests. Participants were trained for finding job ads aligned both with Law n°68/99 and people' curricula.

Individual interviews aimed at deepening participants' professional profile and reviewing their curriculum vitae were also led.

In order to identify the host companies, promotional activities for the project were carried out.

Activation of Internships

Based on the available budget, cross-referencing between companies and participants' work-related skills was carried out to activate 5 paid internships. The evaluation of the

Table 1 Descriptive characteristics of the sample (n = 10)

	Age	Education	FSIQ
M (SD)	29.7 (5.81)	13.5 (2.84)	78.8 (13.9)
Min	21	8	58
Max	37	18	102

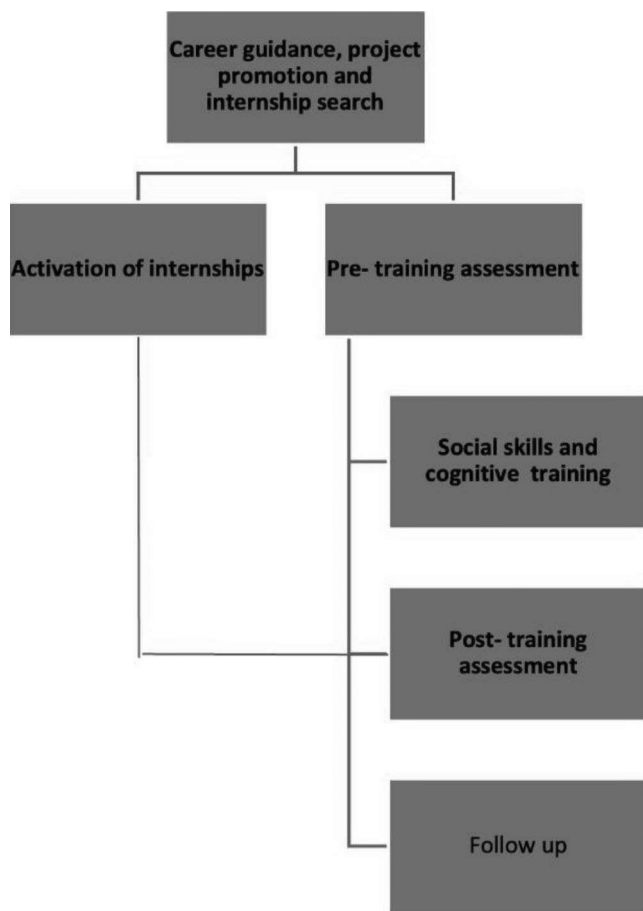


Fig. 1 Project phases

suitability of companies was made through several actions: visits to the company and telephone contacts with tutors. Meetings with the Adult Autism Center team and with family members were part of the main activities for supporting participants during the internships. In collaboration with the other project partner, Emilio ETS Association, educational and autism ‘awareness sessions were held with employers and tutors in the traineeship companies.

Pre-training Assessment

Subsequently, to structure group training, neuropsychological, psychological, and behavioral assessments were carried out (see below for details).

Cognitive and Social Skills Training

At the end of the assessment phase, the group activities were set up. The groups’ goals were cognitive enhancement and job-related social skills improvement.

To support people in maintaining and better performing in their internships, group training lasted throughout the entire project. A large room of the Adult Autism Center with

a table and a whiteboard for taking notes was used for the group meetings.

Additionally, individualized, and personalized interventions were activated on participants’ request or if needed for the entire duration of the project.

18 cognitive training sessions, lasting 90 min each, took place on a weekly basis. Due to the limitations of Covid-19, two groups of 3 participants and one of 2 were done. The cognitive training was led by a neuropsychologist.

The cognitive training sessions goals were formulated considering the results of the initial neuropsychological evaluation. During the sessions a combined approach between restorative and compensatory methods (Ladavas, 2012) was used. Exercises were individual or group based. Moreover, homework was given to generalize the abilities. Enhancement of the participants’ metacognitive skills was one of the main objectives. Thus, we expected people to find strategies to compensate for their cognitive difficulties.

During the meetings, ASD cognitive functioning was deepened, helping participants to choose their own facilitating tools (i.e., diaries, calendars, alarm clocks, photos, videos, blackboards, notes) and find strategies for adapting to one’s living or working environments.

Aims pursued through the cognitive training were:

- improvement of attentional functions (auditory and visual attention; selective and divided attention, shifting abilities).
- improvement of executive functions (working memory, verbal fluency, planning and problem-solving, flexibility and inhibitory control).
- enhancement of memory functions (short-term memory, coding, storage, and retrieval strategies).

Social skills training groups were conducted twice a week for a total of 10 meetings lasting 75 min each. Two groups with 4 participants were set up. Training was led by a cognitive-behavioral psychotherapist.

In the social skills training groups, the Behavior Skills Training model (BST; Sarokoff and Sturmey, 2004), specifically designed to teach new skills, was used. The BST model consists of 4 different steps: Instruction, Modeling, Practice and Feedback. The skills trained were partly chosen by the conductor based on the assessment and partly requested by participants since their difficulties experienced in the internships or in social life. The covered topics were face to face interview, introducing yourself, starting, maintaining, and ending a conversation, sharing breaks with colleagues, joining a group, leaving a group, expressing assertive critics, expressing unpleasant feelings.

8 participants were included in both groups (cognitive and social skills training). Due to personal issues one participant

attended 8 online psychological sessions with the psychotherapist. 29 individualized cognitive-habilitative training of two hours a week was conducted for one participant with cognitive and speech impairment.

Post-training Assessment and Follow-up

At the end of the training sessions, a retest phase was run. For collecting participants' feedback, a qualitative questionnaire was also administered. After 5 weeks, a phone-based follow-up was carried out to check the prosecution of internships, the activation of new work experiences or job searching.

Assessment Tools

For cognitive assessment, the Repeatable Battery for the Assessment of Neurological Status (Randolph, 1998; Ponteri, et al., 2007) was used. The RBANS is a short screening battery composed of two parallel forms for the main cognitive functions which allow the evaluation of the effectiveness of cognitive training. The administration of RBANS is helpful to quantify the neuropsychological functioning in various areas. The performances are measured in terms of Indices for five cognitive domains: Immediate Memory (RBANS IM), Delayed Memory (RBANS DM), Visual Spatial/Constructional (RBANS VC), Language (RBANS LN), Attention (RBANS AT) and a Full-Scale Indices (RBANS FS). The Index scores have a range that varies from 40 to 160 and a mean equal to 100 with a standard deviation equal to 15. A performance below 2 SDs is considered below the norm, i.e., a score equal to or lower than 70 in terms of percentile ranks, a performance below the 5th rank is considered a deficit. A performance between the 5th and 25th percentile corresponds to a performance at the lower limit; between the 25th and 75th percentile a performance in the range of medium variability (with average at the 50th percentile), a performance above the 75th percentile is placed at a medium-higher level.

To assess executive functions, the Frontal Assessment Battery (FAB - Appollonio, et al., 2005; Dubois, et al., 2000) was administered. The FAB is a short screening battery and is useful for quantifying categorization skills, verbal fluency, executive planning, inhibitory control, and sensitivity to interference. Age and education are used for adjusting and transforming raw scores (FAB RS) in adjusted scores (FAB CS) (Appollonio, et al., 2005).

To quantify cognitive difficulties in everyday contexts, the Italian version of Cognitive Failures Questionnaire (CFQ; Salmaso, et al., 1988; Broadbent, et al., 1982) was used. The total score indicates the percentage (maximum value = 100) of cognitive difficulties in everyday life.

The Adaptive Behavioral Assessment Scale-II (ABAS-II; Harrison and Oakland, 2003; Ferri, et al., 2014) was administered in the self-report form. The ABAS-II is a questionnaire that provides a global and daily functioning assessment of people in different life contexts. It is used to assess strengths and weaknesses and to monitor interventions over time. A scaled score of 10 ± 2 represents the mean. The ABAS-II includes subscales for communication, community use, functional academics, home living, health and safety, leisure, self-care, self-direction, social, and work. Four composite scores are derived from the sum of the scaled scores: general adaptive (GAC), conceptual (DAC), social (DAS), and practical (DAP) composite scores.

The Social Responsiveness Scale - Second Edition (SRS-2; Constantino and Gruber, 2012; D'ardia, et al., 2021) is a 65-item scale that assesses the severity of symptoms and behaviors frequently associated with autism. In addition to the total score (SRS Tot), 2 other DSM-5-related scales can be calculated: Social interaction and communication (SCI) and Restricted and repetitive behaviors and interests (RRB). Furthermore, there are 4 treatment subscales: Social Awareness (AWR) as the ability to pick up on social cues, Social cognition (COG) as the ability to interpret social cues once they have been grasped, Social Communication (COM) that includes expressive social communication; social Motivation (MOT) as how the subject is generally motivated to engage in social-interpersonal behavior and Restricted Interests and Repetitive Behavior (RBB) that includes stereotyped behaviors or highly restricted interests.

Scores equal to or lower than 59 T are considered within the normal limits, scores between 60 T and 65 T indicate a mild deficit in reciprocal social behavior, scores between 66 T to 75 T indicate a moderate deficit in reciprocal social behavior and scores over 76 T or greater indicate a severe deficit in reciprocal social behavior.

To assess depressive symptomatology, the Beck Depression Inventory (BDI-II; Beck, et al., 1996; Ghisi, et al., 2006), a self-assessment tool consisting of 21 multiple-choice items, was used. The questionnaire measures the severity of depression in adults and adolescents aged 13 and over. Total score between 0 and 13 indicates a minimal level of depressive symptoms, between 14 and 19 is mild level of symptoms, between 20 and 28 moderate, between 29 and 63 severe.

The State-Trait Anxiety Inventory (STAI-Y; Spielberger, 1989; Pedrabissi and Santinello, 1989) questionnaire was used to assess state anxiety (form Y1) and trait anxiety (form Y2). Higher scores are positively correlated with higher levels of anxiety.

In addition, an assessment tool containing a list of the person's work skills (adapted from Panisi and Keller, 2019) and his/her sensory functioning profile was filled in for each

participant in order to offer to the hosting companies' useful indications about the needs and characteristics of people.

Eventually, to collect the participants' general feedback about the projects a qualitative questionnaire was used. Through this, it was possible to receive information about the general experience, internships, tutoring and support and the cognitive enhancement and social skills training activities directly from participants.

Results

Jamovi Suite (The jamovi project, 2022) was used for the statistical analysis. We ran a paired sample t test with Wilcoxon's ranks. Statistically significant results were found in FAB inhibitory control $W(0.00)$ $p < 0.049$ and RBANS Visual Spatial/Constructional Index: $W(8.00)$, $p < 0.049$. Table 2 (in appendix) shows the results obtained by each participant.

As a result of the internship phase one participant worked in a retail company as a shelf operator; another one worked in a small organic shop dealing with both sale and the organization of the shop (shelves, cleaning); another participant worked the internship at a farmhouse taking care of keeping the spaces in order; one participant completed an internship with office duties in an association and another participant attend his internship at a sportswear company but was unable to complete the hours set for personal reasons. Thus, the adherence rate to the planned paid traineeship courses was 80%.

At the end of the course, a feedback questionnaire on a 5-point Likert scale was administered. It made possible to collect the direct opinions of the participants, thus capturing the strengths and weaknesses that could be improved about the project. Below we indicated the average scores of the questionnaire.

Considering all the internships (5 internships included and two found outside the project) 70% of the participants carried out an internship. All the participants believe that the activities during internships were in line with their personal aptitudes and provide a very positive evaluation of this aspect (4.6/5). The judgment of the traineeship locations was very good (4/5) in terms of the journey to reach the place (4.6/5), moderate in terms of work time (3.5/5), type of activities carried out (3.5/5) and regarding the overall duration of internships (3/5).

Good feedback in terms of matching of the internship with their needs, interests, and desires (3.7/5) was given.

The participants also evaluated positively the activities carried out during the internship (3.8/5) and the relationship with work colleagues (4.2/5), as well as the tutoring received (4.2/5).

The project was judged useful from all participants for their own personal training. Specifically, the sub-dimensions investigated were:

- general interest in the activities included in the project (classroom training, group activities, internship) with respect to personal empowerment (3.7/5).
- coherence between the project and one's own needs: (3.44/5)
- satisfaction with the project: (3.77/5)
- completeness of the project: (3.5/5)
- formativeness: (4/5)
- utility of the project: (4/5)

The project experience was not judged as stressful (2/5). The overall commitment required was judged as adequate (3.2/5) and the course as adequately motivating (3.6/5).

As regards to the cognitive enhancement activities, these were perceived by the participants as interesting (3.9/5), in line with their needs (3.8/5) satisfactory (3.8/5), complete (3.3/5), educational (3.9/5), motivating (3.7/5) and useful (4/5). In terms of perceived stress, they were evaluated as not very stressful (1.6/5) and adequate in terms of effort required (3/5).

The Social Skills Groups were judged interesting (3.8/5), in line with the needs of the participants (3.6/5) and complete (3.2/5). They were judged very educational (3.7/5), motivating (3.6/5) and useful (3.8/5). They were judged low stress (1.9/5) and almost adequate in terms of commitment required (2.7/5).

The most positive reported aspects of the project were the internships, cognitive and social skills training (70%), the overall organization and tutoring during the internship (50%), the individual support received and the group activities (40%). 20% of the participants indicated the pre and post training assessment as negative aspects of the project.

After 5 weeks from the end of the project participants were called to get feedback on their employment status.

Of the 5 people chosen to carry out the internship within the project:

- 1 was hired by the same company of the internship with a fixed-term contract of 6 months (indicated as participant n° 5 in Tables 2 and 3).
- 1 was hired by a company that deals with data analysis (same job performed during the internship) and will soon sign the fixed-term employment contract (indicated as participant n° 8 in Tables 2 and 3).
- 1 is still carrying out the internship thanks to a 6-month extension.
- 1 is carrying out a training course in an area similar to the internship (sales employee).

Table 2 Raw, scored and T scores for each participant for each test

Scales	1*		2*		3*		4*		5*		6*		7*		8*		9*		10*	
	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
SRS-2	58 75	58 58	71 58	71 58	52 58	52 58	64 58	64 58	48 51	48 51	68 48	68 48	65 61	65 61	65 51	65 51	65 51	65 51	41 44	41 44
COG	76 83	68 58	74 70	74 70	61 70	61 70	65 53	65 53	50 64	50 64	61 54	61 54	67 70	67 70	65 72	65 72	67 70	65 72	61 59	61 59
COM	77 84	57 65	70 63	70 63	67 70	67 70	63 59	63 59	84 84	84 84	54 53	54 53	90 90	90 90	75 76	75 76	90 90	75 76	54 54	54 54
MOT	68 62	56 60	66 56	66 56	66 64	66 64	76 62	76 62	83 68	83 68	51 51	51 51	85 89	85 89	64 72	64 72	85 89	64 72	55 53	55 53
RRB	54 70	64 60	66 68	66 68	70 71	70 71	66 56	66 56	45 50	45 50	43 43	43 43	89 73	89 73	73 73	73 73	89 73	73 73	50 45	50 45
SCI	76 83	61 64	74 65	74 65	66 71	66 71	69 60	69 60	74 74	74 74	57 52	57 52	90 90	90 90	72 74	72 74	90 90	72 74	55 54	55 54
TOT	72 80	62 63	73 66	73 66	67 72	67 72	71 59	71 59	68 69	68 69	53 50	53 50	90 90	90 90	70 75	70 75	90 90	70 75	54 52	54 52
ABAS II	16° -2°	42° -18°	0.3° -1°	0.3° -1°	8° -19°	8° -19°	23° -34°	23° -34°	1° -1°	1° -1°	9° -23°	9° -23°	4° -2°	4° -2°	27° -30°	27° -30°	4° -2°	27° -30°	13° -13°	13° -13°
DAC	14° -14°	53° -37°	0.5° -1°	0.5° -1°	12° -21°	12° -21°	53° -45°	53° -45°	2° -2°	2° -2°	12° -12°	12° -12°	12° -14°	12° -14°	25° -25°	25° -25°	12° -14°	25° -25°	18° -14°	18° -14°
DAS	10° -3°	19° -7°	1° -3°	1° -3°	14° -10°	14° -10°	7° -14°	7° -14°	0.3° -0.3°	0.3° -0.3°	3° -21°	3° -21°	1° -0.5°	1° -0.5°	14° -34°	14° -34°	1° -0.5°	14° -34°	27° -27°	27° -27°
DAP	21° -8°	42° -16°	2° -4°	2° -4°	10° -25°	10° -25°	12° -39°	12° -39°	5° -3°	5° -3°	18° -47°	18° -47°	13° -5°	13° -5°	45° -27°	45° -27°	13° -5°	45° -27°	9° -9°	9° -9°
RBANS	13° -15°	57° -23°	0.2° -0.2°	0.2° -0.2°	8° -0.3°	8° -0.3°	33° -83°	33° -83°	0.2° -12°	0.2° -12°	0.3° -2°	0.3° -2°	79° -57°	79° -57°	0.2° -9°	0.2° -9°	79° -57°	0.2° -9°	0.2° -6°	0.2° -6°
RBANS VC	0.1° -0.2°	63° -3°5	0.3° -0.8°	0.3° -0.8°	9.9° -63°	9.9° -63°	63° -83°	63° -83°	9.9° -17°	9.9° -17°	0.2° -0.3°	0.2° -0.3°	4° -4°	4° -4°	0.2° -0.2°	0.2° -0.2°	4° -4°	0.2° -0.2°	0.3° -63°	0.3° -63°
RBANS LN	13° -15°	23° -19°	0.3° -0.3°	0.3° -0.3°	31° -23°	31° -23°	44° -48°	44° -48°	19° -27°	19° -27°	0.2° -4.2°	0.2° -4.2°	9° -9°	9° -9°	23° -2°	23° -2°	9° -9°	23° -2°	0.3° -4°	0.3° -4°
RBANS AT	36° -4°	0.2° -0.8°	0.1° -0.2°	0.1° -0.2°	0.1° -0.1°	0.1° -0.1°	8° -13.8°	8° -13.8°	0.2° -0.2°	0.2° -0.2°	0.1° -0.1°	0.1° -0.1°	8° -21.5°	8° -21.5°	0.1° -0.1°	0.1° -0.1°	8° -21.5°	0.1° -0.1°	9° -0.3°	9° -0.3°
RBANS DM	23° -0.3°	36° -59°	0.2° -0.1°	0.2° -0.1°	6.3° -2.3°	6.3° -2.3°	31° -52°	31° -52°	15° -0.3°	15° -0.3°	0.3° -0.2°	0.3° -0.2°	67° -40°	67° -40°	0.2° -36°	0.2° -36°	67° -40°	0.2° -36°	8° -67°	8° -67°
RBANS FS	0.3° -0.3°	29° -9.9°	0.2° -0.2°	0.2° -0.2°	0.3° -0.3°	0.3° -0.3°	21° -61°	21° -61°	0.3° -0.3°	0.3° -0.3°	0.2° -0.2°	0.2° -0.2°	17.9° -8°	17.9° -8°	0.1° -0.3°	0.1° -0.3°	17.9° -8°	0.1° -0.3°	0.3° -8°	0.3° -8°
CFQ	50-46	39-37	-	-	47-32	47-32	34-32	34-32	52-40	52-40	15-13	15-13	51-51	51-51	51-65	51-65	51-51	51-65	41-40	41-40
FAB RS	14-16	15-15	10-10	10-10	17-16	17-16	18-18	18-18	14-17	14-17	11-11	11-11	15-17	15-17	15-15	15-15	15-17	15-15	16-17	16-17
FAB CS	12,19-14,19	14,87-14,87	8,5-8,5	8,5-8,5	15,7-14,7	15,7-14,7	18-18	18-18	13,3-16,3	13,3-16,3	9,7-9,7	9,7-9,7	13,9-15,9	13,9-15,9	13,9-13,9	13,9-13,9	13,9-15,9	13,9-13,9	14,4-15,4	14,4-15,4

*1 = Internship + Group training; *2 = Online psychological sessions with the psychotherapist; *3 = Individualized cognitive-habilitative training; *4 = Internship + Group training; *5 = Internship + Group training; *6 = Group training; *7 = Internship + Group training; *8 = Group training; *9 = Group training; *10 = Internship + Group training

- 1 is not currently looking for work.

In Table 3 is summarized the job path of the first two participants out of five people chosen for the paid internship because in our opinion they had the strongest motivation in the project.

Of the remaining participants that did not complete the internship within the project:

- 1 is actively looking for a job with the help of an educational figure who supports him in writing and applying for several positions.
- 1 is carrying out an internship outside the projects and is actively looking for volunteering activities simultaneously.
- 1 works part-time in the family business.
- 1 is actively looking for job with the help of the employment center in his area.
- 1 is waiting to do an internship after the end of a training course carried out within an IT company.

Discussion

Our project represents an innovative model of intervention because it combines a rehabilitation and treatment approach alongside with job placement. Indeed, it was based on the

eight IPS principles: eligibility based on client choice, focus on competitive employment, integration of mental health and employment services, attention to client preferences, work incentives planning, rapid job search, systematic job development, and individualized job supports (Bond, Drake & Becker, 2012; Drake, et al., 2012). Additionally, the innovative perspective is not to try to change individuals' skills through a pre-work training to better fit with work environment but to find a good match between personal interests and skills and a good workplace wherein the right amount of support can be given (Rinaldi, Perkins, Glynn, Montibeller, et al., 2008). Hence our project considers both the enhancement of social skills and the cognitive abilities to support the employment of ASD people. As highlighted by Baker-Ericzén et al. (2018), these are main aspects for ASD job inclusion and maintenance. A further innovative aspect was the integration of social and cognitive skills enhancement into a “*Place and Train*” paradigm: cognitive and social skills training were conducted in parallel with internships.

The results obtained in the cognitive tests show statistically significant changes for inhibitory control and visuo-spatial and constructive abilities. These results are in line with the objectives of the training while the improvement in visuo-spatial and constructive skills could be partly due to a reduced impulsivity in the response style. Further investigations are needed to validate these hypotheses.

No statistically significant changes were detected in the psychological tests. However, as far as the social domain is

Table 3 Job path and outcomes by phases for participant 5 and 8

	Participant n°5	Participant n°8
Participants selection October 2021	Unemployed, not looking for a job. No rehabilitation activities during weekdays.	Unemployed, looking for a job. Daily activity: gym.
Phase 1 November-December 2021	Assessment of the interests, abilities, motivation, and previous experiences analysis. Interests: care of green areas, gardening, stockkeeping. Previous experiences: several obstacles with colleagues and tutors due to socio-emotional difficulties.	Interests: administrative duties. Previous experiences: short successful short-term job. Weaknesses: executive functioning (e.g., planification and organization).
Phase 2 January 2022	Activation of the healthcare professionals' network including neuropsychological and social skills trainings. Job opportunity: sales company that allow the participants to go outside of retail hours so without social contact. Type of contract: 6 months fixed term.	Neuropsychological and social skills trainings. Job opportunity: no-profit company Type of contract: 6 months fixed term.
Phase 3 December 2021 – January 2022	Pre-training assessment See Table 2 for scores	
Phase 4 January – June 2022	High participations to training sessions, especially the social skills training group because the participants used the session to analyze and better understand emotional and social challenges with colleagues and tutors during the internship.	High participant and motivation, especially for the neuropsychological sessions. The participant wanted to improve his ability to organize and plan things to get greater autonomy at work.
Phase 5 June 2022	Participant's contract was extended for other 6 months	The internship ended and the participant started actively to look for a job
Follow—up September 2022	The participant is still working in the same company, and he is satisfied with the job and the relationship with colleagues.	The participant signed a 6 months fixed-term contract in a company whose field is like the one he worked in during the internship.

concerned, the absence of significant post-training results could be due to an increased awareness of the participants' dysfunctional modalities which, before the intervention, they acted unintentionally. In our opinion, receiving feedback on unaware behaviors from the psychotherapist or other participants could have improved social awareness and consequently a pejorative evaluation of one's own behavior.

The use of a feedback questionnaire was a useful and inclusive choice which allowed the participants to clearly express their point of view by providing hints and suggestions for future projects.

Furthermore, the evaluation of the effectiveness of our model can be assumed from the rate of adherence to the internships (4 out of 5 of the funded internships) and the employment status of the participants (7 out of 10), as highlighted at the end of the project.

Case-series study includes methodological limitations due to the small sample size and limited generalization of trainings' results. In future research, several limitations can be addressed: increase the duration of the project so of the trainings, other-report (parents or caregivers) measures should be included, ensure a major number of paid internships for the entire sample.

Acknowledgements We thank all people who took part in this study. We really appreciate the participation of autistic participants and their relatives who, with their interest and dedication, make autism research possible.

Funding The project was implemented through the funds for "Progetti speciali per l'inclusione socio-lavorativa di persone con disabilità" in implementation of D.G.R. n. 15-4165-07/11/2016 and Regional Fund for Disability 2016–2018.

Open access funding provided by Università degli Studi di Torino within the CRUI-CARE Agreement.

Declarations

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. All participants signed the informed consent to be involved in the study.

Conflict of interest No conflict of interest was reported by the authors.

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Favorire l'inserimento lavorativo di persone con autismo: proposta di uno strumento per la ricognizione dei contesti

Una scheda per favorire l'adattamento e l'inclusione
delle persone con autismo nei luoghi di lavoro

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Abstract

Lo scopo di questo nostro articolo è di presentare un nuovo strumento utile per promuovere accomodamenti, facilitare l'implementazione dei percorsi di inclusione lavorativa nell'ottica di aumentare l'accesso al mercato del lavoro delle persone con Disturbi dello Spettro Autistico (Autism Spectrum Disorder, ASD).

Tenendo conto delle evidenze presenti in letteratura e delle esperienze dirette di supporto al lavoro per le persone con autismo, abbiamo recentemente sviluppato uno strumento, che qui presentiamo, il cui utilizzo è proposto all'interno dei percorsi di inserimento lavorativo pensati per le persone con autismo.

La scheda presentata indaga 6 aree, coerentemente con le specificità e le caratteristiche dell'autismo, per un totale di 52 quesiti: area cognitiva, area socio-comunicativo-relazionale, area delle autonomie, area della pianificazione del lavoro, flessibilità e risoluzione dei problemi ed area sensoriale. La scheda qui presentata si pone l'obiettivo di guidare un'analisi strutturata degli ambienti di lavoro rispetto agli aspetti strutturali, organizzativi e relazionali che potrebbero incidere sul benessere lavorativo della persona con ASD limitandone le capacità.

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Introduzione

L'attività lavorativa è fondamentale per il benessere psico-fisico e sociale di tutte le persone, comprese quelle con ASD (A.W.A.R.D., 2018). Per queste persone diventa, ove possibile, parte del progetto di vita, attraverso interventi di orientamento, accompagnamento e supporto al lavoro (Keller et al., 2020).

L'avvio e il mantenimento di percorsi nel mondo del lavoro sono ancora limitati per gran parte degli adulti e giovani adulti con ASD: diversi studi internazionali mostrano tassi di disoccupazione più alti nelle persone con autismo rispetto a quanto accade per diverse condizioni di disabilità (Laghi e Trimarco, 2020).

Le persone con ASD mostrano difficoltà socio-comunicative e relazionali, comportamenti e interessi ristretti e ripetitivi, con rigidità e poca flessibilità al cambiamento, risposte anomale agli stimoli sensoriali quali conseguenze di un'iposensibilità o un'ipersensibilità sensoriale (DSM 5, APA, 2013). Queste caratteristiche possono incidere sul funzionamento adattivo con un impatto significativo a livello individuale, sociale e lavorativo.

Al contempo, gli adulti nello spettro presentano qualità positive per il raggiungimento e il mantenimento dell'occupazione, abilità che possono costituire, peraltro, il punto di partenza per la creazione di un percorso lavorativo personale e per il raggiungimento anche di una reale inclusione lavorativa e sociale.

Il profilo di funzionamento delle persone con autismo, infatti, presenta spesso abilità e punti di forza – talora eccezionali a livello di memorizzazione, sistematizzazione e attenzione visiva ai dettagli, concentrazione, ripetitività, precisione e scrupolosità etc.–, da cui deriva lo sviluppo di competenze spendibili in specifici ambiti lavorativi (Panisi e Keller, 2019; Scott et al., 2019; Attwood e Garnett, 2022). In un adeguato contesto occupazionale, queste competenze possono rivelarsi risorse significative per le imprese; lavori che richiedono ripetitività, uniformità, routine e necessità di accuratezza – come la produzione in catena di montaggio, la programmazione di computer o il lavoro di laboratorio – possono essere particolarmente interessanti per adulti con ASD (Hagner e Cooney, 2005). Inoltre, gli adulti con ASD mostrano facilmente una serie di altri tratti desiderabili in un rapporto di lavoro, come l'affidabilità, l'onestà e l'integrità. Le persone con ASD possono rivelarsi, quindi, lavoratori estremamente efficienti, affidabili e produttivi.

L'alto tasso di disoccupazione delle persone con autismo, che arriva anche fino all'80% (Davies et al., 2023), suggerisce che potrebbero esserci ancora altri fattori in gioco (stigma, mancanza di conoscenza, impatti economici, ecc.) che inducono i datori di lavoro a voltare loro le spalle (Hagner e Cooney 2005; Hillier et al., 2007). Molte aziende non sono disposte ad assumere adulti e giovani adulti con autismo preoccupate per un aumento dei costi di supervisione e una diminuzione della produttività. È l'esito di un attuale e forte apparato di pregiudizi basato su percezioni, credenze e convinzioni errate; infatti, i benefici finanziari e sociali derivanti dall'assunzione di adulti con autismo, per le imprese e l'individuo, spesso superano i costi (Solomon, 2020).

Esiste un'ampia gamma di enti, servizi e programmi *evidence-based* volti a preparare e supportare le persone con ASD ad un impiego competitivo (Keller et al., 2023; Brighenti et al., 2023). Si tratta di programmi che prevedono azioni di orientamento professionale oppure laboratori protetti (*sheltered workshops*), *vocational and pre-vocational training*, o ancora percorsi di formazione e inserimento al lavoro (*Train and Place*), percorsi di formazione in situazione (*Place and Train*, basati sul modello *Individual Placement and Support* - IPS; Swanson e Becker, 2011) e possono prevedere il supporto diretto in azienda da parte di tutor (Khalifa, Sharif, Sultan e Di Rezze, 2020).

Mawhood e Howlin (1999) hanno dimostrato che attuare percorsi di occupazione assistita permette alle persone con ASD di raggiungere migliori risultati occupazionali rispetto al non ricevere

questo tipo di supporto; Hillier e colleghi (2007) hanno riportato come programmi di supporto professionale che forniscono servizi pre e post collocamento possano produrre un miglioramento dei tassi di occupazione. Altri studi hanno invece sottolineato l'efficacia e la sostenibilità degli interventi comportamentali individuali e i programmi professionalizzanti (Hedley et al., 2017).

Le diverse metodologie di intervento prevedono l'utilizzo di strumenti di valutazione e assessment che hanno come focus la persona e le sue competenze lavorative. L'analisi del profilo clinico e la valutazione funzionale personalizzata sono l'irrinunciabile premessa per offrire un adeguato e individualizzato supporto alla persona (Panisi e Keller, 2019).

Tale valutazione si avvale di strumenti clinici per la valutazione cognitiva e neuropsicologica (Brighenti e Keller, 2018) e di strumenti di valutazione funzionale del comportamento adattivo (vedi Price, Morris e Costello, 2018 per una rassegna) che permettono di indagare quelle competenze adattive globali che sottostanno alle competenze necessarie e richieste nell'ambito lavorativo.

La valutazione delle competenze e delle capacità lavorative, delle preferenze, attitudini e aspirazioni delle persone ASD può avvenire attraverso l'utilizzo di specifici strumenti come il *Autism Work Skills Questionnaire* (AWSQ- Gal, Ben Meir e Katz., 2013), il *Work Performance Evaluation* (WPE-Katz, Dejak e Gal, 2015), oppure attraverso griglie di valutazione come il profilo MAJA (*Matching Autism-Job Awareness*) sviluppato da Panisi e Keller (2019) o schede come quelle proposte all'interno del Progetto START Autismo (Bollini et al., 2012) relativamente alle capacità lavorative, ma anche alle abilità relazionali, sociali e ai possibili rischi e alle risorse.

Se, da un lato, appare fondamentale partire da una valutazione approfondita del giovane adulto che si approccia a un percorso di inclusione lavorativa per identificare competenze attraverso strumenti per facilitare la comprensione delle sue caratteristiche, delle sue capacità, necessità, dei suoi punti di forza e di debolezza, dall'altro, è necessario attribuire altrettanta importanza a uno specifico processo di adattamento ambientale.

Come già suggerito dall'Autism Society (2019), gli adulti con ASD potrebbero trovare un ulteriore beneficio da adeguati accomodamenti e sistemazioni sul posto di lavoro. Tuttavia, spesso l'assessment si focalizza principalmente sulla persona e la sua preparazione all'inserimento in un ambiente lavorativo, ponendo quindi insufficiente attenzione alla valutazione e preparazione del contesto in termini di adeguamento, adattamento ed inclusione.

Tutto ciò considerato, si evidenzia la necessità di strumenti che supportino un'accurata analisi delle caratteristiche degli ambienti in relazione al profilo della persona con ASD e dei possibili adattamenti in essere.

Difatti, la persona con ASD può essere un valido lavoratore se l'ambiente di lavoro viene adattato ai suoi bisogni (Keller et al., 2023) in termini di tempi, attività e spazi.

Metodi

A partire dai presupposti già evidenziati dal lavoro di Panisi e Keller (2019), il nostro gruppo di lavoro ha recentemente sviluppato uno strumento, che abbiamo nominato *Scheda per il tutor, il job coach e/o il datore di lavoro*, il cui utilizzo è proposto all'interno dei percorsi di inserimento lavorativo pensati per le persone autistiche.

La scheda, in lingua italiana, è disponibile in *Appendice*.

L'obiettivo principale della scheda è quello di facilitare l'identificazione dei fattori che possono in-

cidere sia sul benessere sia sul rendimento lavorativo della persona con lo scopo di favorire adattamenti inclusivi nei diversi contesti lavorativi.

Si propone quindi di supportare l'individuazione di contesti lavorativi adeguati o la promozione di modifiche al loro interno. La scheda raccoglie e sintetizza le informazioni sulle aziende, sulle azioni e sulle caratteristiche dei contesti promuovendo il reciproco adattamento tra le richieste del luogo di lavoro, con essa monitorate, e le caratteristiche della persona.

La scheda può essere utilizzata per sintetizzare le caratteristiche dei diversi contesti lavorativi, per individuare il contesto migliore oppure, in una fase successiva, può essere compilata per promuovere modifiche nel proprio ambiente di lavoro.

Gli aspetti indagati, coerenti con le specificità dell'autismo (vedi Keller et al., 2023), si suddividono in 6 aree, per un totale di 52 quesiti: area cognitiva (6 domande), area socio-comunicativo-relazionale (8 domande), area delle autonomie (10 domande), area della pianificazione del lavoro, flessibilità e risoluzione dei problemi (13 domande), area sensoriale (15 domande).

Per ciascuno dei quesiti è richiesto di rispondere in merito alla frequenza, alla modificabilità e al tipo di adattamenti possibili e/o previsti. Ad ogni item, il datore di lavoro o il tutor o il job coach è chiamato ad indicare una fra tre possibili risposte, ("No", "Sì, sempre", "Sì, qualche volta") e a segnalare la modificabilità dell'aspetto in oggetto. Qualora venga segnalata una condizione di modificabilità se l'elemento si configura come problematico per la persona per la quale la scheda è compilata, è richiesto di compilare la sezione relativa a "*Possibili adattamenti*", nella quale andranno indicate tutte quelle azioni che saranno messe in atto al fine di facilitare, dove necessario, lo svolgimento dei compiti.

È inoltre disponibile uno spazio per inserire dei commenti. Per la compilazione della scheda sono necessari circa 15 minuti.

La compilazione può avvenire in autonomia da parte del datore di lavoro, tutor o job coach, oppure può essere guidata da professionisti esperti dei servizi per il lavoro o clinici.

Discussione

L'inclusione lavorativa rappresenta la definizione di un ruolo sociale che, ancor prima di una gratificazione economica, attribuisce all'individuo un vissuto di inclusione (Bari Bari, Tisci, Burlando e Keller 2018). L'impiego di energie, la destinazione di risorse in tale settore e l'individuazione di strategie innovative si rendono necessarie per offrire servizi e percorsi efficacemente orientati al benessere e alla Qualità di Vita delle persone con ASD.

L'adattamento degli ambienti di lavoro è un processo fondamentale per aumentare l'autonomia e promuovere una vita lavorativa efficace e funzionale della persona con autismo. Il cambiamento a cui auspicare potrebbe avvenire attraverso nuove sinergie con il mondo delle imprese, realizzando strumenti di interfaccia che favoriscano un proficuo incontro tra le caratteristiche e i bisogni degli adulti con ASD da un lato e del mondo del lavoro dall'altro. L'incontro tra due parti – ciascuna con le proprie esigenze, peculiarità e valori – consentirebbe di realizzare le condizioni per un ottimale impiego delle capacità e dei talenti delle persone autistiche (Panisi & Keller, 2019).

Conclusioni

Nella più ampia ottica di favorire l'inclusione delle persone con autismo nel mercato del lavoro emerge sempre più la necessità di strumenti specifici a disposizione dei professionisti e delle aziende che le supportino e le guidino in questo processo. Questo non solo al fine di sistematizzare le compe-

tenze, ma anche per promuovere adattamenti efficaci nei luoghi di lavoro. Generalmente vi è insufficiente attenzione alla valutazione e preparazione del contesto in termini di adeguamento, adattamento ed inclusione.

Si è evidenziata, quindi, la necessità di strumenti che supportino un'accurata analisi delle caratteristiche degli ambienti in relazione al profilo delle persone con ASD.

La scheda da noi presentata ha, pertanto, l'obiettivo di stimolare l'applicazione di soluzioni di adattamento da parte del contesto lavorativo. In questo senso si caratterizza per la sua innovatività. Al contempo, futuri aggiustamenti ed ampliamenti della scheda saranno possibili a seguito di feedback e suggerimenti derivanti dal suo progressivo utilizzo.

Il sistema sociale, culturale ed economico complesso in cui ci muoviamo richiede strumenti di comunicazione tra persona con ASD e imprese, che siano coerenti con le esigenze di tutti gli interlocutori coinvolti e che contribuiscano a rendere più fluido il processo di ottimizzazione delle risorse. Una migliore comprensione e una valida comunicazione dei punti di forza degli individui con autismo e una discussione aperta con i datori di lavoro che tenga conto delle esigenze programmatiche e strutturali delle imprese potrebbe promuovere l'allineamento delle esigenze e la realizzazione delle aspettative, facilitando l'assunzione di persone con ASD.

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Appendice

SCHEDA PER IL TUTOR, I JOB COACH E/O IL DATORE DI LAVORO

Brighenti, Odello, Keller, 2023

Ideata a partire da Panisi e Keller, Adulti con disturbo dello spettro autistico nel mondo del lavoro: proposta di uno strumento di valutazione, *Giornale Italiano dei Disturbi del Neurosviluppo*, 4 (1), 2019.

Descrizione e Istruzioni: *La compilazione della presente scheda è proposta all'interno di percorsi di inserimento al lavoro di persone con diagnosi di disturbo dello spettro autistico per facilitare l'identificazione, da parte dei datori di lavoro e/o dei tutor, dei fattori che possono incidere sia sul benessere sia sul rendimento lavorativo della persona con lo scopo di promuovere adattamenti inclusivi nei diversi contesti lavorativi.*

Per ciascuno dei quesiti di seguito proposti è richiesto di rispondere in merito alla frequenza, alla modificabilità e al tipo di adattamenti possibili e/o previsti. È possibile, infine, inserire commenti o esempi.

I. AREA COGNITIVA						
Quesito	No	Sì Sempre	Sì Qualche volta	Modificabile	Adattamenti	Commenti/Esempi
				No	Sì	
Al fine dello svolgimento delle mansioni, è necessario compiere ragionamenti logici, cogliere inferenze, comprendere regole astratte?						
Per il lavoro richiesto è necessario comprendere concetti espressi in forma verbale ed esporli ad altre persone?						
È richiesto di fare calcoli? È possibile usare la calcolatrice? (inserire nei commenti)						
Vengono svolte attività manuali anche su piccoli oggetti? (Es. assemblare, montare, decorare...?)						
È richiesto di spostarsi e lavorare tra ambienti diversi?						
È richiesto di memorizzare (anche a lungo termine) informazioni scritte o immagini o di comprendere simboli?						

II. AREA COMUNICATIVO-RELAZIONE- SOCIALE						
Quesito	No	Sì Sempre	Sì Qualche volta	Modificabile	Adattamenti	Commenti/Esempi
				NO	Sì	
L'ambiente è o potrebbe essere confusivo in alcune circostanze? (Es. rumore, affollamento, open space, postazione di lavoro in punto di passaggio, postazioni di lavoro diverse tra loro nello stesso ambiente, postazione vicino al corridoio o alla porta?)						

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È previsto lavoro in gruppo?						
È previsto il lavoro a coppie?						
È previsto di lavorare su compiti solitari?						
Con quanti colleghi è richiesto di interagire? Quanti maschi e quante femmine?	Totale ___	M ___	F ___			
Ci sono momenti informali tra colleghi? (pause, pausa pranzo...)						
È possibile chiedere informazioni di aiuto agli altri colleghi?						
È previsto contatto diretto con l'utenza/ la clientela?						

III. AUTONOMIE						
Quesito	No	Si Sempre	Si Qualche volta	Modificabile	Adattamenti	Commenti/Esempi
				NO	SI	
Vengono date istruzioni? In che forma? (Es. scritta, verbale, video...?)						
Sono presenti bacheche, manuali o tabelle per rileggere e consultare le istruzioni?						
È richiesta capacità di seguire istruzioni complesse? (Es. procedure con più passaggi)						
È richiesto di lavorare in autonomia?						
È possibile che la persona debba compiere scelte rilevanti in autonomia?						
In caso di errore si è chiamati a rispondere in modo diretto?						
Le regole dell'ambiente di lavoro vengono esplicitate? (Es. formazione iniziale, bacheche, cartelli...)						
È possibile che vengano fatte eccezioni alle regole dell'ambiente di lavoro o che queste si modifichino in alcune situazioni?						
È richiesta capacità di riconoscere autonomamente le situazioni di rischio per la sicurezza?						
È richiesto di gestire denaro?						

IV. PIANIFICAZIONE DEL LAVORO, FLESSIBILITÀ E RISOLUZIONE DI PROBLEMI						
Quesito	No	Si Sempre	Si Qualche volta	Modificabile	Adattamenti	Commenti/Esempi
				NO	SI	
Vengono svolti compiti routinari e ripetitivi?						
È possibile che vi siano cambiamenti improvvisi e/o interruzioni della routine lavorativa?						
Sono previste lunghe attese o "tempi morti"?						
Può capitare di dover affrontare situazioni e problemi non previsti?						
Vengono svolte mansioni diverse a breve distanza l'una dall'altra e/o contemporaneamente?						
È richiesto di ordinare, selezionare e catalogare?						
È possibile conoscere i compiti della giornata anticipo? Se sì, con quanto anticipo? (indicare nei commenti)						
È richiesto di organizzare il proprio lavoro in autonomia?						
I compiti richiedono una concentrazione costante e per lungo tempo? (Es. più di 40 minuti l'uno?)						
È possibile chiedere o prendere una pausa al di fuori delle pause concordate?						
È prevista tolleranza (es. 10 minuti) rispetto all'orario di ingresso?						
È previsto lavoro su turni?						
Gli orari di lavoro possono subire modifiche?						

V. AREA SENSORIALE						
Quesito	No	Si Sempre	Si Qualche volta	Modificabile	Adattamenti	Commenti/Esempi
				NO	SI	
Sono presenti rumori forti?						
Sono presenti suoni intermittenti?						
Sono presenti rumori prolungati?						
Sono presenti rumori improvvisi?						

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Sono presenti luci forti o abbaglianti?						
Sono presenti luci intermittenti?						
È presente illuminazione ambientale scarsa?						
È presente illuminazione ambientale intensa?						
La temperatura può essere eccessivamente calda/fredda?						
Sono presenti odori intensi?						
È richiesto di indossare una divisa? Se sì, di che tipo? (indicare nei commenti)						
L'ambiente di lavoro è affollato?						
La postazione di lavoro è singola?						
Esiste uno spazio distensivo e tranquillo privo dei suddetti stimoli sensoriali (es. sala pausa, sala relax)?						
Esiste uno spazio dove poter riporre gli oggetti personali?						