

Feasibility and Efficacy of Job Interview Simulation Training for Long-Term Unemployed Individuals

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ABSTRACT

The job interview is an anxiety-provoking situation, and it is often a significant challenge for the long-term unemployed. We have created software that provides a virtual reality experience with which individuals who have been jobless for 12 months or longer could systematically improve their job interview skills, reduce their fears, and increase their confidence about going on job interviews. We assessed the feasibility and efficacy of Job Interview Simulation Training (JIST) in a randomized controlled trial. Participants included 28 long-term unemployed individuals who were actively seeking employment. On average, they had 24.96 years (SD = 8.07) of work experience and had been unemployed for 20.07 months (SD = 9.83). The average age was 47.54 years (SD = 7.66). Participants were randomized to JIST (n = 16) or Control (n = 12) groups. JIST consisted of 5 sessions of simulated job interviews. The participants found JIST easy to use, easy to navigate and useful to train communication skills. We used t-test and Cohen's d effect size computation to analyze changes in outcome measures. The JIST group improved their job interview role-play performance ($p < 0.01$) and job interview self-confidence ($p < 0.01$) between baseline and follow-up as compared with the Control group ($p > 0.05$). The JIST group also had significantly increases in results of simulated interviews ($p < 0.01$). Future research may help clarify whether this intervention helps to increase job interview frequency and get a job.

Keywords: *Long-term unemployed, job interview skills, virtual reality technologies, simulated job interview.*

Paper Received 22/04/2016; received in revised form 14/06/2016; accepted 16/06/2016.

1. Introduction

Nowadays the unemployment appears to be one of the most crucial and painful problems for the society worldwide that can bring a wide range of serious consequences such as

Cite as:

Aysina, R.M., Maksimenko, Zh. A., & Nikiforov, M.V. (2016). Feasibility and Efficacy of Job Interview Simulation Training for Long-Term Unemployed Individuals. *PsychNology Journal*, 14(1), 41 – 60. Retrieved [month] [day], [year], from www.psychnology.org

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lower life quality of the unemployed and their families, deterioration of family relations, increase in social isolation, decrease in their sense of confidence and self-esteem. Moreover, it can also lead to deterioration in mental and physical health in previously healthy individuals (Aysina and Suslova, 2013; Gychev, 2011; Nesterova, 2011; Tickle, 2007; Anderson and Winefield, 2011).

The data presented by International Labour Organization (ILO) shows that the number of unemployed in 2014 exceeds the amount of 201 million people. The number for 2015 has not been calculated yet but expert forecasts predict continuous increase in a number of unemployed by 3 million in 2015 and by 8 more million in the four following years (ILO, 2015). In Russia, the number of unemployed reached a high of 4.3 million on October 2015 (Unemployment in Russia, 2015).

The long-term unemployed - people who have been looking for work for 12 month or longer - face the most significant barriers to employment. This is true both for Russia and for other countries (Aysina and Suslova, 2013; Nichols, Mitchell and Lindner, 2013; Tickle, 2007).

Recent studies in Russia have indicated that the longer people were off work, the less confident and the more social isolated they became (Aysina, 2014; Potutkova, 2011; Efremova, 2002). Partly, these issues are related to the fact that current practice of job interviewing at Russian firms is based on using «stress techniques». Some long-term unemployed do not pass «stress interview» and such experience can be traumatic for them. It may increase the likelihood that they will not be motivated to go on job interviews. Finally, they become discouraged when they fail to find a job. It decreases their self-esteem and leads to depressive disorders (Efremova, Aysina, Maksimenko, Kolotilova and Shagurova, 2015). Thus, the job interview is often a significant challenge for long-term unemployed. Therefore, it is important to train them on how to represent themselves, how to use appropriate verbal and nonverbal techniques and how to express self-confidence during job interview.

Improving job interview performance is a critical target for employment services. Teaching interview skills is usually done through role-playing (Cole, 2007; Gychev, 2011; Nesterova, 2011; Potutkova, 2011; Tay, Ang and Van Dyne, 2006; Van Hoye and Lootens, 2013; Wanberg, Kanfer and Rotundo, 1999). As research has shown, a key to a successful job interview is interviewing self-efficacy, defined as personal judgments of

interviewing capabilities. Therefore, role-play job interviews for unemployed should first of all facilitate job seekers' beliefs about their self-efficacy (Tay et al., 2006).

The role-plays can allow the long-term unemployed to enhance their effort and persistence in mastering challenges in the employment interview domain. But there are several barriers to this training being effective: as well as a real job interview, a role-play interview is an anxiety-provoking situation, and it may be embarrassing for the job-seeker who may therefore avoid the training; vocational specialists are usually not specifically trained in role-playing methods; finally, role-playing is time consuming (Bell and Weinstein, 2011). In other words, a role-play job interview requires a lot of time, financial and staff resources. Unfortunately, Russian Workforce Centers cannot always afford to put those resources into helping the unemployed.

We suppose that it is possible to improve job interview skills in long-term unemployed individuals using virtual reality technologies. Recent studies have indicated that virtual reality training compared with traditional learning methods offers unemployed people several advantages: accurate representation of a real-life job interview situation; consistent in-the-moment feedback; opportunity to make, detect, and correct errors without adverse consequences; opportunity to progress at their own rate of learning and to repeat the exercises as often as necessary until they achieve mastery (Bell and Weinstein, 2011; Efremova et. al, 2015; Kandalaf, Didehbani, Krawczyk, Allen and Chapman, 2013; Persky, 2011; Smith et al., 2014a; Smith et al., 2014b; Strickland, Coles and Southern, 2013).

Moreover, randomized controlled trials that were focused on the unemployed individuals with psychiatric disabilities (Smith, et al., 2014a), and autism spectrum disorders (ASD) (Smith, et al., 2014b) demonstrated the significantly improvement in job interview performance and job interview self-confidence among the participants who had completed 5 sessions of Virtual Reality Job Interview Training (VR-JIT). Thus, the results obtained provide some evidence for efficacy of virtual reality technology in teaching job interview skills to psychiatrically disabled people and people with ASD. On the other hand, there are no research and trials that assessed the feasibility and efficacy of virtual reality training for other categories of unemployed, including healthy individuals who had been jobless for 12 months or longer.

The purpose of the present study was to test the feasibility and efficacy of a Job Interview Simulation Training (JIST), which was created by our team to improve job interview skills

among individuals who had been out of work for more than 12 months. The first hypothesis was that JIST-sessions would be well attended, and the long-term unemployed would rate the intervention as easy to use, easy to navigate, useful to train communication skills and helpful to increase their confidence and readiness for interviewing. We also hypothesized that completion of JIST sessions would be related to improvements in job interview role-play performance and increase in job interview self-confidence in the JIST group as compared with the Control group. Finally, a third hypothesis was that JIST performance scores in the intervention group would increase over the course of the training.

We begin by describing the participants of our randomized controlled trial. We indicate the study inclusion and exclusion criteria emphasizing that all participants provided informed consent. We note that randomization was performed using the method of random numbers. Then we move on to a short description of the intervention - Job Interview Simulation Training (JIST), which provides a virtual reality experience for job seekers. We describe the simulated job interview's scenario and the scoring system. The subsequent section introduces the study procedures in details. We note that the intervention group was asked to complete 5 sessions of JIST within a week period and there were baseline and follow-up assessments for both groups including a standardized role-play and a self-report of job interview self-confidence. The following section presents study measures and data analysis methods, which we used to evaluate the feasibility and efficacy of JIST. These include descriptive statistics, paired and unpaired-samples *t*-Test, chi-square analyses and Cohen's *d* effect size computation. Then we move on to a description of the study's results. Finally, we present a discussion of the findings and outline the study's limitations and suggestions for future research.

2. Methods

2.1 Participants

Participants included 28 individuals (16 male and 12 female). They were registered in the Moscow State Employment Center as unemployed. We take into account five inclusion criteria. Participants were required to a) have prior time in employment at least for 5 years, b) have a secondary school degree at least, c) be jobless for 12 months or longer, d) be actively seeking employment, e) be willingly video recorded.

The study exclusion criteria included a) age below 25 years, b) having a physical, intellectual or psychiatric disability, c) a current diagnosis of substance abuse or dependence. All participants provided informed consent. Once enrolled, the participants were randomized into the Intervention – job-interview-simulation-training - JIST (n = 16) or Control (n = 12) groups. Randomization was performed using the method of random numbers.

2.2 Intervention

Job Interview Simulation Training (JIST) is a computer-based training simulation that we created to improve job interview skills for the long-term unemployed. JIST was designed by implementing behavioral learning principles (Bandura, 1997; Skinner, 1968) that help promote sustainable changes in behavior.

The simulated training is based on a scenario that includes the issues of varying complexity (the total number of 10 questions), for example:

What factors influenced you to choose your career path?

Do you have weaknesses? Describe your most serious weakness?

Where do you see yourself in three years? What do you plan to do for it?

How do you define success in your work? Give me an example.

What is your advantage over other candidates? Why should we hire you?

These questions are typical for job interviews, but answering the questions can be tricky for the long-term unemployed. Therefore, we offer a variety of responses to each of these questions (from 6 to 10 depending on the question's specific). Among them a trainee has to choose the answer that he deems most appropriate. In each training session, a trainee was required to answer all the 10 questions. Available responses allow trainees to try new approaches to answering questions during each interview.

The questions are presented to trainees on the display and in the voice format. We included voice presentation in our program to provide trainees the presence effect: creating a job-interview situation, which is closed to real life.

The simulated interview has two difficulty levels. On the first («easy») level the recruiter's tone of voice is friendly and encouragingly whereas on the second («hard») level his speaking voice fluctuates from indifferent, unemotional to brusque. Before the beginning of each job-interview simulated session trainees had the opportunity to choose one of two difficulty levels: «easy» or «hard». The first session was always held on the «easy» level.

The JIST program scored each simulated interview using an algorithm programmed into the software. At the same time, JIST provided trainees with feedback on why certain answers received a particular score. The score allowed users to define one of the available levels of job interview skills: Poor, Fair, Average, Good, and Excellent.

JIST enables trainees to review a transcript of every simulated question and response as well as special comments, which indicate why responses were appropriate/inappropriate and give related advice to the trainee. Trainees can receive written feedback by clicking on a help button. They also can receive transcripts in an audio format. This approach allows trainees to make mistakes and learn how to improve their responses. In summary, JIST allows trainees to:

- a) practice interviewing repeatedly until they are prepared for a real job interview;
- b) choose various response options to the questions and try different approaches to answering questions;
- c) practice recovering from mistakes or return back and pass the interview once again without errors;
- d) learn from didactic electronic materials that will help them to be prepared for interviews and select a job that meets their needs (e.g., creating a resume, searching a position, choosing appropriate clothes, talking about their own work history and skills).

2.3 Study procedures

The baseline assessments for both groups included a) psychosocial interview, b) a standardized role-play and a self-report of job interview self-confidence. A psychosocial interview was used to obtain the participants' demographic characteristics (e.g., age, gender, educational level), and vocational history (e.g., months since prior employment).

A baseline standardized role-play was a job-interview situation. We invited two human resources representatives who had extensive experience in the field of personnel assessment. The participants were randomly assigned to them and each of the experts conducted the job interview role-play, not knowing to which group belongs an interviewee. Thus, single-blinding principles have been used. The role-play scenario was developed by the research team and vetted through vocational specialists.

Each participant was required to present himself as a candidate for a certain position as convincing as possible. Positions List was made taking into account the education, qualifications and professional experience of participants. All the participants were asked

of similar content and complexity in the job interview role-play. The interviewers asked questions in a naturalistic way. Each role-play lasted approximately 15 minutes. All role-plays were video recorded for scoring purposes. After the role-play had been over, participants completed self-report sheets of job interview self-confidence.

After the completion of baseline assessments, the Control group attended typical services for a week, which included preparations for job interviews using didactic method as well as viewing training videos on the theme of job seeking and job-interviewing (3 videos for 5-7 min).

The Intervention group was asked to complete 5 sessions of JIST within a week period. The trainees were required to progress through two JIST-difficulty levels. They could move to the «hard» level if «average» or higher score in job-interview skills was achieved. Then trainees played on the «hard» level until the end of the training. The participants' JIST performance score for each trial and time spent engaged with the simulated interviews were recorded in the laboratory. The trainees were asked to notify the research team once an interview was completed so the staff could record the simulated interview scores. Then we reviewed the completed transcript with the participant, particularly emphasizing places where improvement could be made. Once all the training sessions were completed, trainees were given the opportunity to ask questions and receive clarification on any aspect of the program. Additionally, the experimental group participants answered the JIST-feasibility questions.

Both groups returned after a week to complete the follow-up standardized role-play and self-confidence measure. The same experts who were interviewers in the baseline role-plays conducted the follow-up role-plays. To ensure the adequacy of the diagnostic procedures, the experts were not provided with information about the test results obtained in the baseline role-plays as well as about to which group – the Intervention group or the Control group - each interviewee had been included. The follow-up role-plays were video recorded too.

2.4 Study measures

Demographic characteristics and vocational history

The participants' demographic characteristics (age, sex, educational level) and vocational history (months since prior employment, months since any prior employment) were obtained via a self-report interview.

Feasibility Assessments

The feasibility of our training system was evaluated via the number of JIST-training sessions that participants attended, the total time participants engaged in simulated interviews, and participant feedback on JIST-feasibility, via a brief self-report measure. The question sheet of JIST-feasibility included 7 items that were rated on a 5-point scale (1 = poor to 5 = excellent), with higher scores reflecting more positive views of JIST. The JIST-feasibility questions were adapted from previous studies of this kind (Bell, Weinstein, 2011; Smith, et al., 2014a; Smith, et al., 2014b).

Primary Efficacy Assessments

In a randomized controlled trial, efficacy of training system was evaluated by measuring participants performance on standardized job interview role-plays and their self-reports of job interview self-confidence before and after training. The role-play performance scoring domains as well as self-confidence items that were used in the study were consistent with the interviewee performance constructs discussed in the literature (Huffcutt, 2011; Kandalaf et al., 2013; Price, Vinokur and Friedland, 2002; Smith et al., 2014a; Smith et al., 2014b; Tay et al., 2006; Wanberg et al., 1999).

We rated role-play job interviews on seven communication skills that contribute to successful job interviews:

- (1) establishing overall rapport with the interviewer;
- (2) ability to keep a positive and friendly attitude;
- (3) conveying oneself as a hard worker;
- (4) sounding interested in the position;
- (5) sounding honest;
- (6) conveying oneself as a «team player»;
- (7) conveying oneself as a highly qualified employee.

A scale of 1 to 10 was used to assess these seven domains of communication skills, with higher scores reflecting better performance. Then the scores on the seven domains were summarized. The assessment was based on analysis of the baseline and follow-up role-play videos. The videos were randomly assigned to two raters with expertise in human resources. These raters did not have contact with each other nor with interviewers who had conducted the role-play job interviews, and they had no information about in what group - experimental or control, the participants had been included. Then raters' scores for

the baseline role-play were averaged to compute a single score. We used the same method to compute a single follow-up role-play score.

Job interview self-confidence

Job interview self-confidence was the second primary outcome. Participants rated their confidence in performing job interviews using a 10-point scale to answer seven questions, with higher scores reflecting more positive views:

- (1) comfort level during the job-interview role-play;
- (2) confidence level during the job-interview role-play;
- (3) communicating in a calm but assertive manner;
- (4) maintaining rapport throughout the interview;
- (5) modeling the behavior you want;
- (6) demonstrating expertise in the job-interview role-play;
- (7) readiness for job-interviews in real life.

Then we summarized the scores on the seven items and computed total baseline and follow-up job interview self-confidence scores.

2.5 Data Analysis

The data were normally distributed and the variances of the groups were equal (except the number of months since prior employment). Between-group differences for demographics and vocational history were assessed with unpaired-samples t-test and chi-square analyses. We used the F-test to evaluate equality of variances. We calculated the Mann–Whitney U-test to prove the Intervention and the Control groups did not statistically differ with respect to their period of unemployment.

We characterized JIST feasibility and usability with descriptive statistics of session attendance, the mean number of minutes required to complete the simulated interviews and mean responses to the usability questions.

We used a time-by-group interaction from paired-samples *t*-test to evaluate whether the primary outcome measures (role-play performance and job interview self-confidence) for the JIST group significantly improved between baseline and follow-up as compared with the Control group. Cohen's *d* effect sizes were generated to characterize the within-subject differences between baseline and follow-up scores as well as between-group differences

at follow-up. We also used a time-by-group interaction from paired-samples t-test to evaluate results of simulated interviews for the JIST group.

3. Results

The study was successful in recruiting participants with a long-term period of unemployment who were actively seeking employment. They were a representative sample reflecting the diversity of the population. The average age was 47.54 years (SD = 7.66). On average, participants had 24.96 years (SD = 8.07) of work experience and had been unemployed for 20.07 months (SD = 9.83). The Intervention and the Control groups did not statistically differ with respect to age, sex, education level, the number of months since prior employment, as well as prior time in employment (all $p > 0.05$) (data are available in Table 1).

	Control Group (n = 12)	JIST Group (n = 16)	χ^2/t -test
Demographics			
Age, mean (SD)	46.16 (7.65)	48.43 (7.70)	- 0.87
Sex (male), %	58.3%	56.3%	0.01
Bachelor's or Specialist's degree, %	66.7%	87.5%	1.77
Vocational history			
Prior time in employment, mean (SD), yrs	23.66 (8.17)	25.93 (8.12)	- 0.73
Months since any prior employment, mean (SD), mth	25.00 (9.68)	24.25 (4.68)	0.27
The groups had no equal variances. Therefore, we calculated the Mann–Whitney U -test to prove that the JIST and the Control groups did not statistically differ with respect to this item ($U=92.50, p=0.87$).			

Table 1. Demographic and vocational characteristics of the study sample

Given the small size of the sample, we used unpaired-samples t-test to compute between-group difference on the baseline role-play performance and job interview self-confidence at the baseline test. Baseline role-play performance did not differ between groups ($t(26) = 0.09, p > 0.05; F = 2.12, p > 0.05$), as well as baseline job interview self-confidence ($t(26) = - 0.45, p > 0.05; F = 1.75, p > 0.05$). The JIST sessions were well

attended (=100%). Elapsed simulation time varied between 12 to 20 minutes for the first session (mean = 16.06, SD = 2.91), and between 6 to 14 minutes for the fifth session (mean = 10.31, SD = 2.55). The participants reported that JIST was easy to use and navigate, useful to train communication skills, had helpful introductory screens guidelines, various choices of what to say to interviewer, useful comments to answers, as well as helpful to prepare for interviewing (see Table 2).

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
Ease to use	16	3	5	4.13	0.62
Ease to navigate	16	3	5	4.31	0.60
Simulation useful to train communication skills	16	3	5	4.19	0.66
Helpful introductory screens guidelines	16	3	5	4.31	0.60
Choices of what to say to interviewer	16	4	5	4.69	0.48
Usefulness of comments to answers	16	3	5	4.25	0.68
Prepared for interviews	16	3	5	4.00	0.52

Table 2. Feasibility characteristics of JIST (Scale 1–5; Poor to Excellent)

JIST total performance scores were evaluated as a process measure. The JIST performance across trials (from the 1st to the 5th session) was determined by computing paired-samples t-test. The results of the process measure demonstrated that JIST performance scores were lower during the first session (mean = 697.75, SD = 296.53) and then improved to the fifth session (mean = 1495.31, SD = 336.90). These changes were significant ($t(15) = -14.51, p < 0.01, d = 2.38$).

	Baseline Mean (SD)	Follow-up Mean (SD)	Paired t-test	Cohen's d	p-values
JIST Group					
Role-play performance	25.03 ^a (3.91)	29.63 (2.72)	-7.17	1.26	$p < 0.01$
Job interview self-confidence	33.37 ^b (5.63)	45.62 (4.27)	-7.51	1.88	$p < 0.01$
Control Group					
Role-play performance	25.21 (5.69)	26.38 (4.32)	-1.79	0.21	$p > 0.05$
Job interview self-confidence	32.25 (7.46)	34.16 (6.01)	-1.48	0.26	$p > 0.05$

Table 3. Change in role-play performance and job interview self-confidence

The JIST group participants had significantly higher scores on the role-play at follow-up compared with baseline, as well as increased their self-confidence in their interview skills (all $p < 0.01$) (data are available in Table 3).

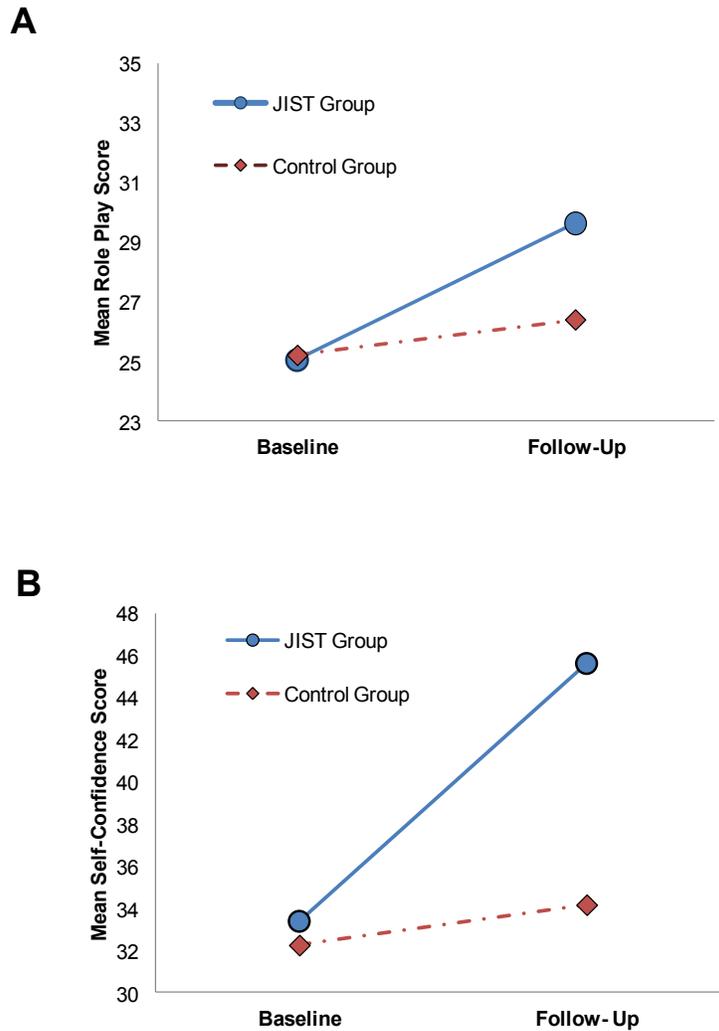


Figure 1. Between-group differences in role-play job interviews (panel A) and self-confidence (panel B) scores

The Control group demonstrated increased follow-up role-play score as well as increased follow-up self-confidence score, but the observed effects were nonsignificant. The Control group did not improve neither on the total role-play assessment score nor on the self-confidence between baseline and follow-up (all $p > 0,05$) (see Table 3). Thus, the JIST

group demonstrated improved job interview skills whereas the Control group did not (see Figure 1 for further details).

4. Discussion

The goal of the study was to evaluate the feasibility and efficacy of JIST in a small, randomized single-blinded controlled trial. The feasibility results suggest that participants were engaged with the simulated interviews and they reported that the intervention was easy to use, easy to navigate and useful to train communication skills. The results of the process measure demonstrated that JIST performance scores were lower during the early trials and then improved. In other words, the JIST group demonstrated significant improvement on their simulated performances from the first to the fifth session. We attribute this to the fact that trainees could benefit from being able to progress at their own rate of learning and from repeating the exercises until they achieve mastery.

The results also suggest JIST may be efficacious given that the JIST group had significantly higher scores on the role-play at follow-up compared with baseline and increased their job interview self-confidence. The Control group demonstrated changes in role-play performance and job interview self-confidence too, but they were not statistically significant (see Table 3 and Figure 1).

Hence, it is possible that both groups improved their role-play performance and self-confidence in the follow-up role-play job interview due to the experience gained in the first role-play. We also believe, the control group increased job interview skills and enhanced self-confidence by using educational materials on how to behave at interviewing. Besides, the Control group participants watched training videos on job-interviewing. Thus, they could learn effective verbal and nonverbal communication strategies that worked to assist participants with the interviewing process. Nevertheless, the observed improvements in the Control group were characterized by small effect sizes both on role-play performance ($d = 0.21$), and on job interview self-confidence ($d = 0.26$). In contrast, the improvements in the JIST group were characterized by large effect sizes ($d = 1.26$ and 1.88 , respectively). The findings were consistent with recent studies demonstrating that simulated job interview can be used to improve vocational and social skills for unemployed (Bell and Weinstein, 2011; Smith et al., 2014a; Smith et al., 2014b; Strickland et al., 2013).

However, our participants had no mental illnesses or developmental disorders, unlike these studies participants.

Despite the fact that our training system has not an animated avatar, which is available in other simulators designed to teach social skills (Bell and Weinstein, 2011; Kandalaf et al., 2013; Persky, 2011; Smith, et al., 2014a; Smith, et al., 2014b), nevertheless, it provides a unique training experience with each simulation and allows to reach our goal, and can be successfully used to improve job interview skills in long-term unemployed.

JIST-efficacy and feasibility due to the fact that it provides rather accurate representation of real-life job-interview situation and implements the basic learning principles of the behavioral approach standpoint:

- (1) active participation and not passive observation;
- (2) accurate representation of real-life situations;
- (3) repetitive practice with the simulation;
- (4) consistent in-the-moment feedback;
- (5) opportunity for trainees to make, detect, and correct errors without adverse consequences;
- (6) opportunity to apply multiple answering strategies to the interview's questions;
- (7) access to educational material that promotes learning skillful strategies.

These principles are extremely important so they help promote sustainable changes in behavior (Bandura, 1997; Latham and Budworth, 2006; Roelfsema et al., 2010; Skinner, 1968).

Improving job interview performance is a critical target for employment service. Therefore, vocational specialists can benefit from using JIST, given that our participants who were the long-term unemployed had a highly positive response to it. In addition, this job interview training software is easy to use and navigate both for trainees and for specialists, and it does not take a lot of time to learn how to use it. Moreover, it may be that this software will be useful for psychologists who may also benefit from this method of learning. For example, transcripts of trainees' responses can provide psychologists with the opportunity to help them generalize the skills acquired in the simulation to each specific job interview situation that they will encounter. Based on reviewing transcripts of responses, psychologists also may identify errors both in communication and in self-presentation strategy.

Additionally, reviewing the completed transcript, a psychologist may elicit dysfunctional, inflexible thoughts and beliefs of unemployed that are usually centered on themes of helplessness, incompetence and inadequacy. Then the psychologist could work with the unemployed, using cognitive behavioral therapy strategies, to develop a healthier belief system. It is especially important for the long-term unemployed given their low self-confidence and negative cognitions about self and work (Aysina, 2014; Potutkova, 2011).

There were some limitations to the current study. This sample was small, and although some methodologists suggest that using the *t*-test is feasible in such a case (e.g. De Winter, 2013), our research results must be interpreted with caution. Thus, it is possible that JIST does not have a strong effect. Future research with a larger sample would be needed to evaluate this issue more carefully.

This study suggests that JIST might be feasible and efficacious across the long-term-unemployed jobseekers, which were of different age, sex, educational level and prior time in employment. Nevertheless, most of the participants were older, and five participants were of pre-retirement age (two years before the retirement age). Future studies could gather data from a younger sample. In addition, the study was conducted in a laboratory setting. Further research is needed to gather data in a community setting to better prove the effectiveness of JIST. Future studies could also assess whether motivation and length of time seeking employment impact the results of JIST. Lastly, in this study we have not yet collected employment outcome data for the participants. Future studies will examine whether JIST completion is related to an increase in job interview frequency and obtaining employment.

The current version of JIST is not a final product. The expanded version of our job interview simulation program will include a virtual human character that interacts with trainees, as well as a wider variety of questions related to employment history and job skills. Trainees will be provided with the opportunity to choose one of three difficulty levels, where the virtual recruiter is friendly («easy»), formal, indifferent («medium»), or curt and dismissive («hard»). The expanded software will also be capable of video recording and analyzing trainee's nonverbal responses during each simulated job interview (heart rate, galvanic skin response, facial expressions). By tracking these data in future studies, we could more thoroughly assess employability of the trainees and assist them to overcome barriers to employment.

5. Conclusions

Prior studies demonstrated the training advantages of virtual reality simulations for improving job interview skills in unemployed with psychiatric disabilities and developmental disorders (Bell, Weinstein, 2011; Kandalaf et al., 2013; Smith, et al., 2014a; Smith, et al., 2014b; Strickland et al., 2013). This study provides initial evidence that job interview simulation training - JIST may be a feasible and efficacious tool to enhance the set of skills necessary for successful job interviewing in healthy individuals who have been jobless for 12 months or longer. The results also suggest that the long-term unemployed jobseekers found JIST easy to use and navigate as well as useful to train communication skills. They also viewed it as a chance to overcome their fear of the job interview situation through practice and to get better at it.

Thus, Workforce Centers or other vocational services could take advantage of JIST to make job-interview skills learning easier and more accessible.

Future studies could assess the efficacy of the JIST expended version as well as examine whether the intervention helps to increase job interview frequency and finally to find a job.

6. Acknowledgements

This work was supported by The Ministry of Education and Science of Russian Federation and was prepared as a part of a state task in scientific research area: project № 25.1815.2014/K of 11.07.2014 «Creating virtual experimental models of social interaction between human and psychosocial information environment to organize psychological support for various categories of population».

The authors thank Dr Svyatoslav Konkov for his consultation on the statistical analyses. Also thanks to our participants for their enthusiasm and volunteering their time.

7. References

Anderson, S. & Winefield, A. H. (2011). The Impact of Underemployment on Psychological Health, Physical Health, and Work Attitudes. In D. C. Maynard & D. C. Feldman (Eds.),

- Underemployment: Psychological, Economic, and Social Challenges*. Chapter 9 (pp. 165-186). New York: Springer.
- Aysina, R. M., & Suslova T. F. (2013). *Modern Methods and Techniques of Career Counseling and Psychological Support for Job Seekers Who Have Been Unemployed for a Long Period (More Over a Year): Guidelines*. Moscow: Russian State Social University Press.
- Aysina, R. M. (2014). Using Virtual Technologies to Teach Self-management Skills to Long-term Unemployed. In A. A. Nesterova (Ed.). *Modern Methods and Technologies That Can Be Used to Psychological Support for People in Crisis Situations* (pp. 112-126). Moscow: Rytm Press.
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York: Freeman.
- Bell, M. D., & Weinstein, A. (2011). Simulated Job Interview Skill Training for People with Psychiatric Disability: Feasibility and Tolerability of Virtual Reality Training. *Schizophrenia Bulletin*, 37 (2), 91–97. doi:10.1093/schbul/sbr061
- Cole, K. (2007). *Good for the Soul: The Relationship between Work, Wellbeing, and Psychological Capital* (Unpublished PhD thesis). University of Canberra, ACT, Australia. Retrieved January 9, 2016 from https://www.melbourneinstitute.com/downloads/hilda/Bibliography/Student_Essays_Dissertations/KCole.pdf
- De Winter, J. C. F. (2013). Using the Student's t-test with extremely small sample sizes. *Practical Assessment, Research & Evaluation*, 18 (10). Retrieved February 5, 2016 from <http://pareonline.net/getvn.asp?v=18&n=10>
- Efremova, G. I. (2002). *Psychological Ensuring of Professional Support to Unemployed Women* (Unpublished doctoral dissertation). Tver State University, Tver, Russia.
- Efremova, G. I., Aysina, R. M., Maksimenko, Z. A., Kolotilova, I. V., & Shagurova, A. A. (2015). Virtual Computer Technologies in Practice of Socio-Psychological Assistance toward the Unemployed People: Current State and Prospects of Researches. *Asian Social Science*, 11 (2), 262-269. doi:10.5539/ass.v11n2p262
- Gychev, A. V. (2011). Organization, Forms and Methods of Psycho-Prophylactic Assistance for Unemployed Persons. *Siberian Herald of Psychiatry and Addiction Psychiatry*, 1, 108-111.

- Huffcutt, A. I. (2011) An Empirical Review of the Employment Interview Construct Literature. *International Journal of Selection and Assessment*, 19 (1), 62–81. doi:10.1111/j.1468-2389.2010.00535.x
- International Labour Organization. (2015). *World employment and social outlook: Trends 2015*. Geneva: ILO. Retrieved December 21, 2015 from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_337069.pdf
- Kandalajt, M. R., Didehbani, N., Krawczyk, D. C., Allen, T. T., & Chapman, S. B. (2013). Virtual Reality Social Cognition Training for Young Adults with High-Functioning Autism. *Journal of Autism and Developmental Disorders*, 43 (1), 34–44. doi:10.1007/s10803-012-1544-6
- Latham, G.P., & Budworth, M. (2006). The Effect of Training in Verbal Self-Guidance on the Self-Efficacy and Performance of Native North Americans in the Selection Interview. *Journal of Vocational Behavior*, 68 (3), 516–23. doi:10.1016/j.jvb.2005.11.005
- Nesterova, A.A. (2011). *The Social and Psychological Concept of Viability of Youth in a Job Loss Situation* (Unpublished doctoral dissertation). Russian State Social University, Moscow, Russia.
- Nichols A., Mitchell J., & Lindner S. (Eds.). (2013). *Consequences of Long-Term Unemployment*. Washington, DC: The Urban Institute. Retrieved January 4, 2016 from <http://www.urban.org/sites/default/files/alfresco/publication-pdfs/412887-Consequences-of-Long-Term-Unemployment.PDF>
- Persky, S. (2011). Employing Immersive Virtual Environments for Innovative Experiments in Health Care Communication. *Patient Education and Counseling*, 82 (3), 313–317. doi:10.1016/j.pec.2010.12.007
- Potutkova, S.A (2011). *Interrelation of Social Intelligence and Adaptability in Unemployed at Job Search Stages* (Unpublished PhD thesis). Russian State Social University, Moscow, Russia.
- Price, R.H, Vinokur, A.D, & Friedland, D.S. (2002). The Job Seeker Role as Resource: Achieving Reemployment and Enhancing Mental Health. In A. Maney, & J. Ramos (Eds.). *Socioeconomic Conditions, Stress and Mental Health Disorders: Toward a New Synthesis of Research and Public Policy*. Washington, DC: NIMH. Retrieved January 21, 2016 from

<http://www.isr.umich.edu/src/seh/mprc/PDFs/The%20Job%20Seeker%20Role%20as%20Resource.pdf>

- Roelfsema, P.R., Van Ooyen, A., Watanabe, T. (2010). Perceptual Learning Rules Based on Reinforcers and Attention. *Trends in Cognitive Sciences*, 14 (2), 64–71. doi:10.1016/j.tics.2009.11.005
- Skinner, B.F. (1968). *The Technology of Teaching*. New York: Appleton-Century-Crofts.
- Smith, M.J, Ginger, E.J, Wright, M.A., Wright, K., Humm, L.B., Olsen, D.E., Bell, M.D., & Fleming, M.F. (2014a). Virtual Reality Job Interview Training for Individuals with Psychiatric Disabilities. *Journal of Nervous & Mental Disease*, 202 (9), 659-667. doi:10.1097/NMD.0000000000000187
- Smith, M.J, Ginger, E.J, Wright, K., Wright, M.A., Taylor, J.L, Humm, L.B., Olsen, D.E., Bell, M.D., & Fleming, M.F. (2014b). Virtual Reality Job Interview Training in Adults with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders*, 44 (10), 2450-2463. doi:10.1007/s10803-014-2113-y
- Strickland, D. C., Coles, C. D., & Southern, L. B. (2013). JobTIPS: A Transition to Employment Program for Individuals with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, 43 (10), 2472-2483. doi:10.1007/s10803-013-1800-4
- Tay C., Ang S., &Van Dyne L. (2006) Personality, Biographical Characteristics, and Job Interview Success: A Longitudinal Study of the Mediating Effects of Interviewing Self-Efficacy and the Moderating Effects of Internal Locus of Causality. *Journal of Applied Psychology*, 91(2), 446–454. doi:10.1037/0021-9010.91.2.446
- Tickle L. (2007, November 6). Just the job. *The Guardian*. Retrieved September 12, 2015 from <http://www.theguardian.com/society/2007/nov/06/socialexclusion.workandcareers>
- Unemployment in Russia. (2015, December 14). In *Wikipedia, the free encyclopedia*. Retrieved December 14, 2015 from https://ru.wikipedia.org/wiki/Безработица_в_России
- Van Hove, G., & Lootens, H. (2013). Coping with Unemployment: Personality, Role Demands, and Time Structure. *Journal of Vocational Behavior*, 82 (2), 85-95. doi:10.1016/j.jvb.2013.01.004
- Wanberg, C. R., Kanfer, R., & Rotundo, M. (1999). Unemployed Individuals: Motives, Job-Search Competencies, and Job-Search Constraints as Predictors of Job Seeking and

Reemployment. *Journal of Applied Psychology*, 84 (6), 897–910. doi:10.1037/0021-9010.84.6.897