

Research Reports

Using a Computer Simulation to Improve Psychological Readiness for Job Interviewing in Unemployed Individuals of Pre-Retirement Age

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Abstract

Unemployed individuals of pre-retirement age face significant challenges in finding a new job. This may be partly due to their lack of psychological readiness to go through a job interview. We view psychological readiness as one of the psychological attitude components. It is an active conscious readiness to interact with a certain aspect of reality, based on previously acquired experience. It includes a persons' special competence to manage their activities and cope with anxiety. We created Job Interview Simulation Training (JIST) – a computer-based simulator, which allowed unemployed job seekers to practice interviewing repeatedly in a stress-free environment. We hypothesized that completion of JIST would be related to increase in pre-retirement job seekers' psychological readiness for job interviewing in real life. Participants were randomized into control (n = 18) and experimental (n = 21) conditions. Both groups completed pre- and post-intervention job interview role-plays and self-reporting forms of psychological readiness for job interviewing. JIST consisted of 5 sessions of a simulated job interview, and the experimental group found it easy to use and navigate as well as helpful to prepare for interviewing. After finishing JIST-sessions the experimental group had significant decrease in heart rate during the post-intervention role-play and demonstrated significant increase in their self-rated psychological readiness, whereas the control group did not have changes in these variables. Future research may help clarify whether JIST is related to an increase in re-employment of pre-retirement job seekers.

Keywords: unemployed job seekers, pre-retirement age, psychological readiness for job interviewing, computer-based simulation, simulated job interview

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Unemployment is an extremely acute social problem worldwide. The number of unemployed in 2015 reached 197.1 million. It is about 1 million more than in 2014 and experts predict increase in a number of unemployed by nearly 2.3 million in 2016 and by a further 1.1 million in 2017 ([International Labour Organization, 2016](#)). Russia's unemployment rate also remains, on average, very high. According to a report by the Federal State Statistics Service, there were 4.0 million people out of work in August 2016. That level of unemployment equals 5.2 percent of the country's working population ([Federal State Statistics Service, 2016](#)). Generally, unemployment leads to a significant income decrease and lower quality of life. Moreover, unemployment destroys social relationships that were created by work ([Layard, 2004](#)). Being jobless can bring a wide range of psychological consequences. Research suggests that having a job not only provides a person financially, but it also plays a significant part in self-structuring, stabilizing everyday life ([Van Hove & Lootens, 2013](#)) and

contributes to psychological well-being (Anderson & Winefield, 2011; Cole, 2007; Van Hoye & Lootens, 2013; Waddell & Burton, 2006). When people lose their jobs, they are deprived of psychological benefits that are advantages of people who have a job (Nesterova, 2011; Van Hoye & Lootens, 2013). Unemployment leads to decreasing self-confidence and self-respect as well as to partial loss of social communication skills (Anderson & Winefield, 2011; Efremova, Aysina, Kolotilova, Maksimenko, & Shagurova, 2015; Potutkova, 2011). Furthermore, worklessness has the negative effects on physical and mental health (Waddell & Burton, 2006).

All unemployed workers face significant challenges in finding new employment, but it can be especially challenging to find a new job for unemployed individuals of pre-retirement age (Ahmed, Andersson, & Hammarstedt, 2012; Aysina & Suslova, 2013; Badaraev, 2010; Berger, 2006; Heidkamp, Corre, & Van Horn, 2010; Kadefors & Hanse, 2012; Klehe, Koen, & DePater, 2012; Wanberg, Kanfer, Hamann, & Zhang, 2016). Recent research suggests that there was a negative relationship between age and re-employment status, and more important, a negative relationship between age and re-employment outcomes became stronger for individuals over the age of 50 (Wanberg et al., 2016). Moreover, re-employment after job loss takes longer for older job seekers than younger job seekers (Klehe et al., 2012; Wanberg et al., 2016), and «even when older job seekers do find re-employment, it is usually in exchange for a steep decline in earnings and benefits» (Klehe et al., 2012, p. 331).

One of the most important steps toward successful re-employment is a job interview. It may be a significant challenge for pre-retirement unemployed individuals. Employers often restrict applicants to those under the age of 50 years old in the belief that younger employees will be more productive and more effective than older workers (Ahmed et al., 2012; Aysina & Suslova, 2013; Berger, 2006; Heidkamp et al., 2010; Potutkova, 2011). Thus, applicants of pre-retirement age are often victimized by age discrimination. They are often perceived as being unable to use modern technologies and keep up with new developments (Badaraev, 2010; Kadefors & Hanse, 2012; Klehe et al., 2012; Roscigno, Mong, Byron, & Tester, 2007). In addition, many hiring managers may feel uncomfortable supervising someone who is older and more experienced than they are (Aysina & Suslova, 2013; Brandon, 2015).

However, despite all these difficulties, a job interview is an ordinary procedure in most developed countries. It is comprehensible to job seekers of different ages, including mature-aged applicants. In Russia the situation is quite different.

Social and Psychological Aspects of Pre-Retirement Job Seekers' Re-Employment in Russia

Russian people of currently pre-retirement age (women over the age of 53 years and men over the age of 58) had been developed as personalities during the Soviet period. In the USSR, after getting a degree, everyone was guaranteed a specialty-related job. There was no such problem as active job searching or competition among applicants, and there was no such practice as a job interview. It was nearly impossible to switch jobs or transfer to another organization, with a higher salary and better perspectives for professional self-actualization. Wages for any given position were standardized nation-wide, in any region or organization. There were no opportunities to earn more, to achieve a higher social status only due to one's talent, professional skills and experience. Likewise, it was impossible to manifest one's entrepreneurial initiative as in the Soviet Union there was no private economy sector, and individual commerce was illegal and punishable by the criminal law (Aysina & Suslova, 2013).

Such social context produced a fully formed demotivator for the most part of the employable population: people understood that putting more effort into their professional functions is fruitless and would result in increase of neither their personal wealth nor career possibilities of any interest and significance (Badaraev, 2010; Potutkova, 2011).

Today, according to the Russian Federation legislation, pre-retirement age citizens, registered as unemployed at the Employment Service authorities, have the right to retire early; however, in this case they will no longer be recognized as unemployed and will lose the whole «package» of governmental guarantees that provide help in finding a job (Badaraev, 2010). Regarding a relatively low pensions in Russia, this situation could not be considered favorable as early retirement will surely lead to a significant income decrease and, as a result, to lower quality of life. Psychology-related issues also become pressing – primarily, feeling of uselessness, lack of life perspectives, decrease in self-esteem (Aysina & Suslova, 2013; Potutkova, 2011). Nevertheless, many pre-retirement unemployed consciously abandon all attempts to find a job and choose early retirement, since they dramatically underestimate their chances to get a position according to their qualification (Badaraev, 2010). Moreover, many job seekers over the age of 50 still perceive a job interview as an «alien» and thus «obscure» procedure (Aysina & Suslova, 2013).

From our point of view, it could be explained by the lack of their subjective psychological readiness to go through a job interview.

The Psychological Readiness Phenomenon and Its Relationship to the Job Interviews Process

Our understanding of the psychological readiness phenomenon is based on the concept of «psychology of attitudes» by V. N. Myasishev, who emphasized that a human's psychological attitude was an integral system of individual, deliberate connections between the person and diversified aspects of the objective reality. A psychological attitude is not an inherent trait but is developed through individual experience, defining human actions and emotions in a given life situation. Therefore, the key features of the attitude are consciousness and mediation through individual experience (Myasishev, 1995). It is also consistent with the concept of attitudes by G. W. Allport who said that an attitude was «a mental and neural state of readiness, organized through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related» (Allport, 1935, p. 810).

We view psychological readiness as one of the psychological attitude components, to be more precise, as an active conscious readiness to interact with a certain aspect of reality, based on previously acquired experience. It includes a persons' special competence to manage their activity and cope with anxiety (Morosanova, 2014). Here, the main criteria of psychological readiness would be the quality of self-regulation in a given life situation.

In the context of a job interview, this approach to understanding psychological readiness is also consistent with the A. Bandura's self-efficacy theory, according to which any personal achievements increase and strengthen the sense of self-efficacy (Bandura, 1997). In other words, a chance to undergo recurring success generates positive experience and allows an unemployed person to feel more confident about their readiness and ability to resolve life issues in situations that seemed extremely difficult and frightening before. From our point of view, this exact experience appears to become the foundation of psychological readiness for job interviewing and may allow the unemployed to better control their behaviors while interacting with a recruiter, by decreasing the level of tension and increasing emotional comfort.

Simulated Job Interviews in Practice of Psychological Support to Unemployed People

As research has shown, unemployed individuals' preparedness for job interviewing could be improved through role-playing because of facilitating job seekers' beliefs about their self-efficacy (Cole, 2007; Gychev, 2011; Nesterova, 2011; Potutkova, 2011; Tay et al., 2006; Van Hoyer & Lootens, 2013). Unfortunately, a job interview role-play requires significant financial, time and staff resources. Employment services in Russia cannot always afford to put those resources into helping the unemployed (Efremova et al., 2015). We believe that role-playing with computer-based simulations might improve the situation.

Computer based-simulations are usually well structured, simple and clear for trainees. They also provide in-the-moment feedback (e.g. as specific comments to trainees' responses or advices related to further actions for training a certain skill) and allow trainees to practice skills in a safe environment where they can exercise maximum control (Botella, Garcia-Palacios, Baños, & Quero, 2009; Loon, 2014; Riva & Mantovani, 2012). Moreover, the use of simulation technologies significantly reduces the time spent on teaching social skills (Aysina, 2014; Efremova et al., 2015).

Despite the advantages of role playing with computer based simulations over traditional learning methods there are lack of research and trials that would allow us to say that using simulated job interviews made unemployed people feel them well-prepared for future interviews in real life. Few studies that have shown feasibility and efficacy of simulated job interview skill training were focused on the unemployed individuals with psychiatric disabilities (Smith et al., 2014a), and autism spectrum disorders (ASD) (Smith et al., 2014b). The results obtained provide some evidence for improvement in job interview performance and job interview self-confidence among participants who had completed 5 sessions of simulated job interview. Authors considered that success of the intervention was due to the simulator allowed trainees to practice interviewing in a virtual environment closed to real job interview situations (Smith et al., 2014a; Smith et al., 2014b). But the issue of simulated job interviews efficacy in psychological support to other categories of unemployed people, including healthy individuals of pre-retirement age, is still unresolved.

Present Study

The aim of the present study was to assess the efficacy of a computer simulation - Job Interview Simulation Training (JIST) - in preparing healthy unemployed individuals of pre-retirement age for job interviewing. We have already tested JIST on a sample of job seekers of different ages, including short-term and long-term unemployed persons, as well as on a small group of the long-term unemployed (Aysina, 2016; Aysina, Maksimenko, & Nikiforov, 2016). Our findings demonstrated that the training system could enhance psychological willingness to go through a job interview in different categories of the unemployed (Aysina, 2016) and improve job interview performance and job interview self-confidence in individuals who had been jobless for 12 months or longer (Aysina et al., 2016). The current study sought to examine whether JIST could help to increase psychological readiness for job interviews in pre-retirement job seekers.

We hypothesized that the unemployed of pre-retirement age would rate the intervention as easy to use, easy to navigate, useful to train communication skills and helpful to enhance their psychological readiness for interviewing. We also hypothesized that completion of JIST sessions would be related both to decrease in the participants' heart rate during the post-intervention role-play interviews and to increase in their self-rated psychological readiness for real life job interviews.

Methods

Participants

Initially, our sample consisted of 42 unemployed individuals (20 male and 22 female). They were registered in the Moscow State Employment Center as unemployed. The average age was 55.60 years ($SD = 2.53$). On average, participants had 33.36 years ($SD = 5.01$) of work experience and had been unemployed for 11.98 months ($SD = 8.51$). Regarding education, 71.4% of our sample obtained a high school degree, and 28.6% a vocational school degree. We take into account five inclusion criteria. Participants were required to a) be of pre-retirement age (58 years old for male and 53 years old for female), b) have prior time in employment at least for 5 years, c) have a secondary or vocational school degree at least, d) be actively seeking work. The study exclusion criteria included a) having a physical, intellectual or psychiatric disability, b) a current diagnosis of substance abuse or dependence. All the participants provided consent to participate.

After enrolment, the participants were randomly assigned to experimental ($n = 22$) or control ($n = 20$) groups. Randomization was performed using the method of random numbers. Given that three subjects (one from the experimental and two from the control group) did not complete the follow-up assessments, their characteristics were not included in the data analyses. Thus, the final sample size was $N = 39$, and there were 21 participants in the experimental group and 18 participants in the control group.

Intervention

The participants were taught job interview skills with using Job Interview Simulation Training (JIST) - a computer-based training system for teaching job interview skills to unemployed individuals. It was designed by the research group of the North-Caucasus Federal University (Russia), in cooperation with a programmer of the NexTReT S.L. (Spain). While developing JIST we followed behavioral learning principles: active participation and not passive observation; an opportunity for trainees to practice skills repeatedly; providing in-the-moment feedback to trainees about their performance; access to educational materials that promote learning skillful strategies (Bandura, 1997; Latham & Budworth, 2006; Roelfsema, Van Ooyen, & Watanabe, 2010; Skinner, 1968).

The program was based on a scenario, which included questions of varying complexity (the total number of 10 questions). These are the open questions that an employer might ask a job seeker during a job interview (e.g., What factors influenced you to choose your career path? How did you choose your college major? Do you have weaknesses? Describe your most serious weakness?).

There are various answer options for each question (from 6 to 10 options depending on the question specifics), from which a user should choose the most appropriate one. Answer options, comments and recommendations for users that were designed by our team and included in the software reflected specific social and psychological problems of unemployed people in Russia: age discrimination in employment (Aysina, 2014; Potutkova, 2011); insufficient orientation in modern job interview rules and standards; poor verbal and nonverbal communication skills (Aysina & Suslova, 2013); a passive lifestyle (a dependant position), falling social activity (Efremova et al., 2015).

The questions are presented to a user sequentially one after the other both in text (on the monitor screen) and voice formats. In each JIST-session, a user is required to answer all the 10 questions.

Voice presentation was included in our program to provide a trainee with the «presence effect»: creating a situation of a job interview close to the real one. At the same time, a trainee can choose between two difficulty levels of a voice presentation: 1) a virtual recruiter's voice sounds friendly and reassuring throughout the interview; 2) a virtual recruiter's voice fluctuates from indifferent, unemotional to brusque. Prior to each session, a user can choose the first option, which we designated as «easy», or the second option («hard»). The first session is always held on the «easy» level.

At the beginning of each JIST-session, trainees should sit in front of the monitor at the distance that permitted them to most easily focus on the screen. Then they should read and follow the instructions on the screen. If the instructions are clear to the trainees they are required to click the «Go to the interview» button to begin the job interview process. After hearing and reading each question, they should choose the most appropriate answer option from the list of answer choices that appeared on the screen. Then they are required to confirm the selected option by mouse click.

The results of each simulated interview are evaluated in scores in accordance with the scoring system programmed into the software. Besides, the JIST system allows a trainee to get information both why he/she has received certain scores for his/her answer and which level of job interview skills he/she has achieved: poor, fair, average, good, or excellent. After completing each simulated interview, a trainee can view his/her results on the screen. He/she can also receive written feedback by clicking on the «print» button.

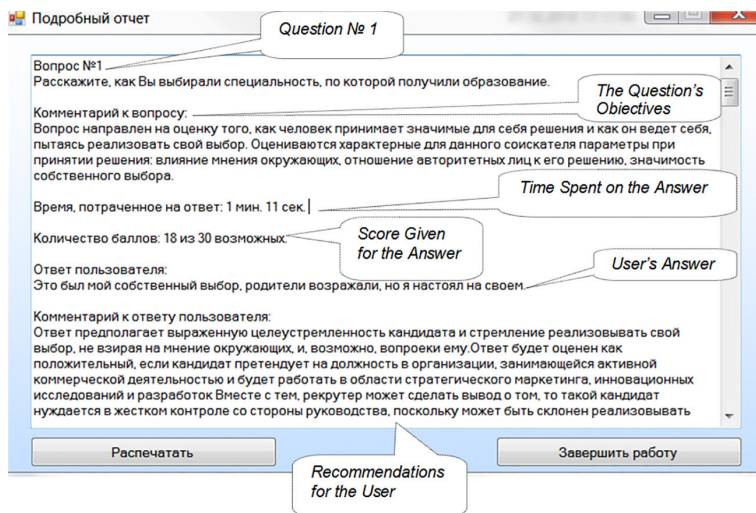


Figure 1. Detailed comments to the answer the question № 1.

Note. An English translation is available in the [Appendix](#).

The JIST program enables users to review a transcript of every question and answer. Thereby, the unemployed can view detailed comments to each answer and identify, which answers were successful and which were not, and get recommendations on recovering from mistakes (see [Figure 1](#) and [Appendix](#)).

We constructed the content of comments in such a way so that a trainee could understand both resource and problematic aspects of his/her answers and could get a clear idea of how each answer would characterize him/her as a candidate for the position. As a result, JIST provides unemployed job seekers with the opportunity to gain a comprehensive learning experience for practicing a successful job interview.

Study Procedures

First, the participants completed the baseline assessments, including a standardized role-play and a self-report of psychological readiness for job interviewing. The role-play was a modeled situation of a job interview with a recruiter. Specially invited experts that had a great experience in the field of hiring acted as recruiters. The experts' main task was to make the job interview role-play as realistic as possible. All the participants were interviewed individually: they were randomly assigned to two experts, and each of them answered the same questions. Each role-play lasted approximately 15 minutes. Before the start of the role-play special physiological sensors were applied to the participants' bodies for measuring their heart rate during the interview. After finishing the role-play, the participants filled a self-reporting form of psychological readiness for job interviewing.

Second, the control group was studying the didactic materials on the theme of job seeking and job-interviewing for a week. The control group participants also had watched training videos on this theme (3 videos for 5-7 min). The experimental group was invited to attend 5 sessions of JIST within a week period too. Once participants were oriented to the simulation software, they began the first session to demonstrate that they could navigate the program. A member of our research team provided assistance and answered the questions on any aspect of JIST.

The participants were required to progress through two JIST-difficulty level: from «easy» to «hard». They could move to the «hard» level if average or higher scores in job-interview skills (in accordance with the JIST scoring system) were achieved. Then the trainees played on the «hard» level until the end of the training. We recorded the participants' JIST performance scores for each simulated interview as well as time spent engaged in each trial. Then we reviewed the completed transcript with each trainee and we answered the trainee's questions on any aspect of the program. Additionally, the experimental group participants answered the JIST-usability questions.

Third, the experimental and the control groups completed the follow-up assessments, which again included a job interview role-play and a self-report survey. The post-intervention and pre-intervention job interview role-plays were similar to each other, but the experts asked new questions to the participants. Just as in the pre-intervention role-play, the participants were fitted with sensors that recorded heart rate data throughout the interview. After the role-plays had been over, the participants completed the self-reporting forms of psychological readiness for job interviewing as follow-up test.

Study Measures

The participants' demographic (age, sex, educational level) and vocational (prior time in employment, months since any prior employment,) characteristics were obtained via a psychosocial interview.

We measured the participants' heart rate on the role-play at baseline and follow-up. We considered these data as indicators of the participants' emotional state. Average heart rate indexes (beats a minute) were calculated for each participant, both at baseline and follow-up.

A self-report method was used to assess psychological readiness for job interviewing. We have revised the Psychological Willingness to a Job Interview Questionnaire that we used in our previous study (Aysina, 2016) and developed the Psychological Readiness for Job Interviewing Scale, which included a set of seven items (see Appendix).

Participants were required to rate each item using a 10-point scale. There were three reverse items (Items 1 - 3), with higher scores reflecting more negative views (e.g., discomfort level during the job interview role-play; anxiety level during the job interview role-play) and four straight items (Items 4 - 7) with higher scores reflecting more positive views (e.g., self-confidence during the job interview role-play; readiness for the job interviews in real life). To get the scores on the Items 1 - 3, it is required to recalculate a participant's rating via the following system: if a participant chose rating of «1» point, it was equal to 10 points, of «2» - to 9 points, of «3» - to 8 points, etc. The scores on the items 4 - 7 corresponded to a participant's rating. Then we summarized the scores on all items and computed total scores. The internal consistencies at baseline (Cronbach's alpha = .87) and follow-up (Cronbach's alpha = .86) across all subjects were good.

We also developed a brief self-report form to measure JIST-usability. It 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-usability items were adapted from previous studies of this kind (Bell & Weinstein, 2011; Smith et al., 2014a; Smith et al., 2014b). The JIST-Usability Scale had an internal consistency of Cronbach's alpha = .74, in the current sample.

Data Analysis

We characterized JIST usability with descriptive statistics. Between-group differences for demographics and vocational characteristics were assessed via Mann–Whitney test and *chi-square* analysis.

We used Wilcoxon Signed-ranks test to evaluate whether significantly changes were in the participants' heart rate and psychological readiness for job interviewing between baseline and follow-up. According to Fritz, Morris, and Richler (2012), we calculated *r* proposed by Cohen to estimate effect sizes for Mann–Whitney and Wilcoxon non-parametric tests.

Study data were analyzed using statistical software – IBM SPSS Statistics 21.

Results

The Experimental and Control groups did not differ with respect to age, the number of months since prior employment, as well as prior time in employment (see Table 1). The groups also did not differ in gender, ($\chi^2(1, N = 39) = .63, p = .43$), and in levels of educational attainment, ($\chi^2(1, N = 39) = .003, p = .95$). As can be seen in Table 1, comparative analysis of heart rate indicators and self-rated psychological readiness for job interviewing has also revealed no statistically significant differences between the groups.

The JIST sessions were well attended (= 95.5%). Elapsed simulation time varied between 15 to 27 minutes for the first session ($M = 18.82, SD = 3.47$), and between 5 to 18 minutes for the fifth session ($M = 13.04, SD = 3.19$).

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 an interviewer and useful comments to answers (all means are above 4.0). Overall simulation rating (Item 7) showed a mean of 4.33 and had a range of 3-5 (data are available in Table 2).

Table 1

Pre-Intervention Between Group Differences

| Group | <i>Mdn</i> | Mean Rank | Sum of Ranks | <i>U</i> | <i>Z</i> | <i>p</i> | <i>r</i> |
|---|------------|-----------|--------------|----------|----------|----------|----------|
| Age | | | | | | | |
| Experimental | 54 | 18.8 | 394 | 163 | 0.73 | .46 | .120 |
| Control | 57 | 21.4 | 386 | | | | |
| Prior Time in Employment | | | | | | | |
| Experimental | 33 | 17.7 | 372 | 141 | 1.35 | .18 | .210 |
| Control | 35 | 22.7 | 408 | | | | |
| Months Since any Prior Employment | | | | | | | |
| Experimental | 11 | 19.8 | 416 | 185 | 0.11 | .91 | .022 |
| Control | 9 | 20.2 | 364 | | | | |
| Heart Rate | | | | | | | |
| Experimental | 77 | 20.4 | 429 | 198 | 0.25 | .80 | .040 |
| Control | 75 | 19.5 | 351 | | | | |
| Psychological Readiness for Job Interviewing | | | | | | | |
| Experimental | 33 | 19.2 | 404 | 173 | -0.45 | .65 | .073 |
| Control | 35 | 20.9 | 376 | | | | |

Table 2

Usability Characteristics of JIST (Scale 1–5; Poor to Excellent)

| Features of the Simulation | <i>N</i> | Minimum | Maximum | <i>M</i> | <i>SD</i> |
|---|----------|---------|---------|----------|-----------|
| Ease to use | 21 | 3 | 5 | 4.05 | 0.59 |
| Ease to navigate | 21 | 3 | 5 | 4.00 | 0.55 |
| Simulation useful to train communication skills | 21 | 3 | 5 | 4.24 | 0.70 |
| Helpful introductory screens guidelines | 21 | 4 | 5 | 4.33 | 0.48 |
| Choices of what to say to an interviewer | 21 | 4 | 5 | 4.67 | 0.48 |
| Usefulness of comments to answers | 21 | 3 | 5 | 4.19 | 0.60 |
| Overall simulation rating | 21 | 3 | 5 | 4.33 | 0.48 |

In order to determine the efficacy of JIST in preparing the participants for a job interview, we calculated the Wilcoxon Signed-ranks test. The results are presented in [Table 3](#).

As can be seen in [Table 3](#), the Wilcoxon Signed-ranks test revealed a significant change in the experimental group participants' heart rate: decrease at follow up as compared to baseline. Thus, we can say that the experimental group participants felt more emotional comfort and less emotional stress in the job interview role play at follow up, after finishing JIST-sessions. In contrast to the experimental group, there was not a significant change in the control group participants' heart rate (see [Figure 2](#) for further details).

According to the results of self-reports, the experimental group increased psychological readiness for interviewing on the total score between baseline and follow-up, whereas the control group did not (see [Table 3](#) and [Figure 3](#) for further details).

Table 3

Change in Heart Rate and Psychological Readiness for Job Interviewing

| Group | Mdn1 | Mdn2 | N-Ranks | | Sum of Ranks | | Mean Rank | | Z | p | r |
|---|------|-------|---------|----|--------------|-------|-----------|-------|-------|-------|-----|
| | | | PR | NR | PR | NR | PR | NR | | | |
| Heart Rate | | | | | | | | | | | |
| Experimental | 77 | 72 | 3 | 17 | 7 | 203 | 2.33 | 11.94 | -3.66 | <.001 | .78 |
| Control | 75 | 77 | 10 | 6 | 97 | 39 | 9.70 | 6.50 | 1.51 | .13 | .36 |
| Psychological Readiness for Job Interviewing | | | | | | | | | | | |
| Experimental | 33 | 45 | 20 | 1 | 229.50 | 1.50 | 10.90 | 1.50 | 3.96 | <.001 | .87 |
| Control | 35 | 34.50 | 11 | 3 | 81.50 | 23.50 | 7.41 | 7.83 | 1.84 | .066 | .43 |

Note. Mdn1 = Median score at baseline; Mdn2 = Median score at follow-up; N-Ranks = Number of ranks; PR = Positive ranks; NR = Negative ranks.

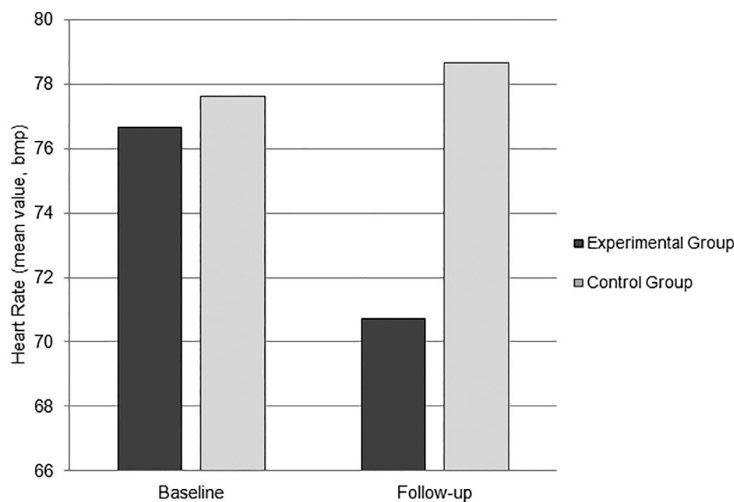


Figure 2. Between-group differences in heart rate data.

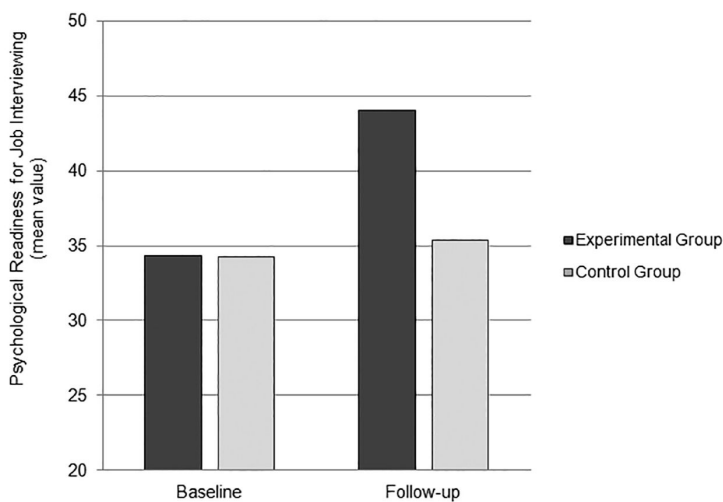


Figure 3. Between-group differences in self-reported psychological readiness for job interviewing.

Thus, the results suggest that JIST may be an efficacious strategy for increasing participants' psychological readiness to go through job interviews.

Discussion

In this study, we examined whether JIST could help to increase psychological readiness for job interviewing in unemployed individuals of pre-retirement age. We also evaluated the usability characteristics of our simulator, its usefulness in developing job seekers' preparedness to go through a job interview in real life. In Russia, many people over the age of 50 have no sufficient computer skills and have no confidence in their ability to learn new skills through the use of a computer simulation. Therefore, it was extremely important for us to find out whether they could see the benefit of JIST.

The usability results suggest that participants had a positive response to the simulated job interviews. They were engaged with the simulated interviews and found JIST easy to use, easy to navigate and useful to train communication skills. They saw the benefit of the JIST program's special features such as introductory screens guidelines, choices of what to say to interviewer, and comments to answers. Thus, despite the age of these participants, they could use the software to improve their job interview skills and increase their psychological readiness for interviewing in real life.

The findings indicated that JIST might be efficacious given that the experimental group had significant decrease in heart rate during the post-intervention role-play and demonstrated significant increase in their self-rated psychological readiness. The control group had changes in these characteristics too, but they were not statistically significant. Hence, it is possible that unemployed individuals in the experimental group became more skilled after completing JIST-sessions and their anxiety and emotional tension lessened. On the other hand, the observed increase in the participants' psychological readiness for job interviewing reflected the improvement in their regulatory competencies. Changes in the participants' heart rate enabled us to reach this conclusion.

Our results also suggest that JIST may be used successfully in social and psychological support for unemployed people of pre-retirement age. Despite the fact that JIST has not an animated avatar, which is available in other computer-based training systems, developed to teach social skills (Bell & Weinstein, 2011; Kandalaf, Didehbani, Krawczyk, Allen, & Chapman, 2013; Persky, 2011; Smith et al., 2014a; Smith et al., 2014b; Strickland, Coles, & Southern, 2013), nevertheless, it has provided a unique training experience with each simulation and has made trainees feel well-prepared for future interviews.

The findings are consistent with recent studies demonstrating improved job interview performance and job interview self-confidence among individuals with psychiatric disabilities (Bell & Weinstein, 2011; Smith et al., 2014a) and autism spectrum disorders (Smith et al., 2014b; Strickland et al., 2013). But our study was carried out on a sample of healthy unemployed individuals, unlike the above-mentioned studies. Our results are also consistent with our previous study, where we showed that JIST could help to improve job interview skills and increase self-confidence in people of different age who had been jobless for 12 months or longer (Aysina et al., 2016). However, in the present study we did not focus on interview skills or self-confidence. We suggested that low psychological readiness for job interviewing among job seekers of pre-retirement age was a more acute problem.

Self-confidence and psychological readiness are closely related, but they are not the same. According to Barbalet, self-confidence is a person's judgment of certainty about a future event or outcome (Barbalet, 1998). From our point of view, psychological readiness is a broader concept than self-confidence. As we wrote above, psychological readiness includes a person's capacity for conscious self-regulation in a given life situation.

Our understanding of psychological readiness for job interviewing, based on the concept of «psychology of attitudes» by V. N. Myasishev and Allport's approach to the study of the attitude phenomenon, is consistent to Bandura's theory. Each of these scientists believed that human actions and emotions in a given life situations are organized through previously acquired experience. But Bandura emphasized that performance achievements were especially useful (Bandura, 1997) whereas both Myasishev and Allport paid special attention to regulatory competence of a person who could consciously use its as a means of solving various goals (Allport, 1935; Myasishev, 1995).

When developing JIST, we tried to integrate ideas from these theoretical models. As a result, JIST had provided the unemployed of pre-retirement age with the opportunities: to train at their own pace; to make, detect, and correct mistakes without adverse consequences; to apply multiple answering strategies to the interview's questions; to receive consistent in-the-moment feedback. Thereby, JIST allowed our participants to view job interview situations that they had previously perceived as threatening from a new perspective.

Limitations and Implications for Future Research

The findings must be interpreted while considering some limitations. First, the Psychological Readiness for Job Interviewing Scale has not yet been validated. Therefore, between-group differences in self-rated psychological readiness must be interpreted with caution. Second, the JIST-Usability Scale had an internal consistency of Cronbach's alpha = .74. It was a satisfactory level of reliability, but not high enough. Likely, the items are not yet optimally constructed to measure the usability characteristics of JIST. Third, the sample of unemployed individuals of pre-retirement age was small, and we used only non-parametric analysis in this study. Thus, it is possible that JIST does not have a strong effect. Further research with a larger sample would be needed to assess the efficacy of our training system more carefully. For instance, it would be appropriate to use *t*-test and Cohen's *d* effect size computation to analyze changes in outcome measures. Fourth, the study was conducted in a laboratory setting. Future studies are needed to gather data in a community setting to better prove the effectiveness of JIST. Further research could also assess whether motivational characteristics and personal traits of mature-aged unemployed individuals as well as length of time seeking employment impact the results of JIST. Fifth, we have not collected data on the participants' employment outcomes. Further research should fill this gap. In the future, it becomes important to assess whether JIST helps unemployed people of pre-retirement age find new jobs.

Lastly, the current version of JIST is not a final product. The extended version of our computer simulation will include a virtual human character that interacts with users. We also intend to develop a wider variety of job interview questions. Moreover, users 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 extended software will also be capable of video recording and analyzing trainee's nonverbal responses during each simulated job interview (facial expressions, heart rate, galvanic skin response). Thus, the updated JIST program will enhance the «presence effect» and provide trainees with the opportunity to create a naturalistic conversation with the virtual interviewer in the computer-generated environment.

Conclusions

In Russia, many pre-retirement unemployed consciously abandon all attempts to find a job and choose early retirement, since they dramatically underestimate their chances to get a position according to their qualification (Aysina & Suslova, 2013; Badaraev, 2010). From our point of view, it could be explained by their low psychological readiness to go through a job interview. In this study, we assessed the effectiveness of Job Interview Simulation Training (JIST) in developing pre-retirement job seekers' preparedness for interviewing.

The results suggest that after finishing JIST-sessions the experimental group felt more emotional comfort in the job interview role-play and demonstrated significant increase in their self-rated psychological readiness for job interviewing in real life, whereas the control group did not have changes both in emotional state and psychological readiness for job interviewing at follow-up compared with baseline. Thus, JIST might be an efficacious tool to enhance pre-retirement unemployed people's job prospects in a tough market.

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Competing Interests

We declare that no competing interests exist.

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Appendix

The screenshot's content (Figure 1)

Question 1

How did you choose your college major?

Comments on the question (question purpose):

The question purpose is to estimate the person's decision making and his/her actions to accomplish what was decided. Estimated are decision-making parameters typical for the current applicant: social opinion influence, authorities attitude towards the decision, significance of the individual choice.

Time spent to answer: 1 min. 11 sec.

Score given for the answer: 18 out of 30

User's answer: It was my own choice. My parents were against it, but I insisted.

Comments on the user's answer:

The answer suggests the candidate's distinct determination and aspiration to implement his/her choice, with no regard to the social opinion and possibly contrary to it. The answer will be estimated as correct, if the candidate is applying for a position related to active commerce and will work in the area of strategic marketing and innovative research and development.

Simultaneously, the recruiter might consider this candidate to be in need of strict supervision, since he/she might be willing to promote (*the following text goes beyond the screenshot*) personal interests at the cost of common cause. In this case, the candidate might be declined. This answer is not recommended for candidates applying for «regular» positions assuming higher level of responsibility and discipline.

Along with the exhibited user's answer, Question 1 contains six more answer options, each with comprehensive teaching comments.

The Psychological Readiness for Job Interviewing Scale

Instructions: For each of the following items, please circle the point on the scale that you feel is most appropriate in describing you

| Items | Points | | | | | | | | | |
|---|----------|---|---|---|---|-----------|---|---|---|----|
| | Very Low | | | | | Very High | | | | |
| 1.* Discomfort level during the job interview role-play | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2.* Anxiety level during the job interview role-play | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3.* Sense of fatigue after the completion of the job interview role-play | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 4. Self-confidence during the job interview role-play | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5. Ability to communicate in a calm manner during the job interview role-play | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 6. Ability to regulate your behavior, altering it in accordance with the demands of the job interview role-play situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 7. Readiness for job interviews in real life | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Note. *indicates items that are reverse-scored. Higher scores indicate higher levels of psychological readiness for job interviewing.

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