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## **Self-Esteem in Second Life: An inWorld Group Intervention for Women with Disabilities\***

By Margaret A. Nosek, Susan Robinson Whelen, Baylor College of Medicine, Texas Rosemary B. Hughes, Erin Porcher, University of Montana Rural Institute on Disabilities, Missoula, Giselle Davidson, 39370 Civic Center, Fremont, Thomas M. Nosek, Case Western Reserve University School of Medicine, Ohio

### **Abstract:**

*We are developing and investigating the feasibility of a self-esteem enhancement intervention in Second Life for women with physical disabilities. We adapted the curriculum of a previously tested workshop intervention to include features unique to this environment. Results of the beta test were very positive. Everyone involved showed considerable enthusiasm for exploring the new world of SL. The group leaders were challenged to resolve technical problems on every occasion, but these diminished and were perceived as manageable as the intervention progressed. Beta testers gave positive ratings to the information presented, organization, and usefulness of the intervention and found it very enjoyable although fatigue and stress limited the participation of some. They appreciated the use of Internet technology as an accommodation to their disability, in place of requiring transportation and additional energy expenditure to attend face-to-face meetings. Research issues related to engagement, measurement, and participant safety, as well as future research directions, are discussed. We conclude that SL has great potential for delivering health promotion interventions to women with physical disabilities.*

**Keywords:** Virtual worlds, Second Life, self-esteem, disabilities, intervention

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## **Self-Esteem in Second Life: An inWorld Group Intervention for Women with Disabilities\***

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The current project, in the second of its three years, investigates previously uncharted territory -- the delivery of a health promoting interventions in Second Life (SL) for women with physical disabilities. As a highly innovative exploration in the megaverse, it is breaking new ground in reaching an isolated and neglected but rapidly growing segment of the population.

Women with disabilities comprise 19.1% of non-institutionalized, civilian women over age 5 (U. S. Census Bureau, 2005). In our research, we have found strong associations between low self-esteem and lack of access to mental health services, abuse, depression, and other health outcomes. The problem for many women is that disability is a stigmatizing phenomenon as shown by the lower levels of self-esteem observed among individuals with disabilities (Magill-Evans & Restall, 1991; Walsh & Walsh, 1989). Women with disabilities face numerous barriers and challenges as a result of both disability and gender biases and must continually cope with assaults to their self-esteem by negative societal attitudes

The disability literature reveals the need for safe, inclusive personal development programs for women with disabilities (Deegan & Brooks, 1985; Fine & Asch, 1988; Saxton, 1985). Self-improvement interventions for women with disabilities can help address the intersection of disability status and gender, which both the women's movement and the disability rights movement have essentially overlooked. Women with disabilities can serve as role models for one another to both enhance visibility and offer empowerment for a population of women described as roleless (Deegan & Brooks, 1985; Fine & Asch, 1988). In such groups, they can experience a learning climate that offers women opportunities to share important information about resources and confront internalized multiple oppressions, including ableism and sexism (Saxton, 1985).

With earlier support from the National Institute on Disability and Rehabilitation Research (NIDRR), Nosek and Hughes conducted a randomized trial to determine the efficacy of a 6-week self-esteem enhancement group intervention for women with physical disabilities recruited by centers for independent living (CIL) around the U.S. (Hughes, Taylor, Robinson-Whelen, Swedlund, & Nosek, 2004). Participants were randomly assigned to CIL services only or CIL services plus a peer-led self-esteem enhancement intervention, with pre- and post-test evaluation (N = 102, 51 per group). Participants in the intervention showed significantly greater improvement on measures of self-esteem, self-efficacy, and depression. Post-intervention interviews identified group support and goal-setting activities as highly valuable aspects of the intervention. The majority of participants reported learning new skills for improving self-esteem, gaining increased confidence in being assertive, connecting with others, and managing stress and depression.

### **Purpose**

Encouraged by these findings, we received funding from NIDRR to use SL to deliver this self-esteem intervention to women with physical disabilities who face substantial barriers to attending a face-to-face workshop. The objectives of this project are to (1) Develop and test the

feasibility of an online manual for instructing women with disabilities on how to navigate confidently and safely in SL; and (2) Test the feasibility and efficacy of offering the refined self-esteem enhancement intervention in SL. This paper reports on the adaptation of the intervention for delivery in SL and the results of the beta test.

## Methods

Project staff and collaborators at the University of Montana Rural Institute and Case Western Reserve University School of Medicine adapted and expanded the original intervention so that it uses unique features of SL to illustrate the content, based on input from focus groups of women with physical disabilities conducted in Missoula, Montana, and Houston, Texas. Collaborator Thomas M. Nosek, developed a secure parcel of land in SL owned by Case Western Reserve University that is dedicated to this project. The site contains venues and rich media resources for each session of the intervention. A Quick Guide (Nosek, Goe, & Nosek, 2010) was created and tested to be effective in training members of the advisory group and beta testers.

Beta testers were selected from among participants in prior studies at the Center, including those who were involved in the initial self-esteem intervention project. To be eligible the women had to (1) have been diagnosed with any physical condition that causes a significant limitation in mobility or self care, such as cerebral palsy, spina bifida, spinal cord injury, neuromuscular disease, amputation, or inflammatory joint disorder, (2) have had their disability for at least one year, (3) be at least 18 years of age, (4) have access to a computer with a high-speed Internet connection, and (5) be unfamiliar with SL. Two facilitators (women who have personal experience with disability) were trained to deliver the orientation in two sessions using the Quick Guide and to lead the beta testers through the self-esteem curriculum. Everyone was provided with a headset to minimize interference with using the voice function in SL.

Beta testers were asked to complete secure and anonymous surveys after the orientation and each group session using SurveyMonkey.com. The surveys asked women to rate the usefulness and content of the curriculum, the ease of interacting in SL, and the perceived support offered by the facilitators and fellow group members. Open ended questions asked participants to describe specific things they liked and disliked about each session and to provide comments and suggestions for improvement. Semi-structured interviews were conducted by one of the investigators with each of the facilitators and beta testers.

## Intervention

The theoretical framework for our online self-esteem intervention is based on social learning theory (Bandura, 1986, 1997) feminist psychology (Jordan, 1994), and independent living philosophy (Nosek & Fuhrer, 1992; Nosek & Hughes, 2004). The approach incorporates self-efficacy, which is a belief in one's ability to influence outcomes for desired goals. Feminist psychology emphasizes the importance of supportive relationships that offer a sense of connectedness and mutuality. Independent living philosophy incorporates personal autonomy, empowerment, and self-advocacy.

Topics addressed in the intervention program include defining self-esteem; discussions of gender and disability role socialization; defining and developing self-empathy and connecting to self; defining healthy and unhealthy connections and boundaries; making healthy connections and improving relationships; defining and demonstrating passive, aggressive, and assertive communication; relaxation skill training, and planning for the future. Sessions also include goal setting and weekly action planning. Participants report on their successes and barriers

encountered while implementing the previous week's action plan for feedback and problem solving by the group. A "Bud Adventure" is assigned at the end of each session, where participants are paired up and given a pre-planned, usually off-island task to complete. Examples include visiting a race track and uncovering treasures in a waterfall. These adventures were designed both to build navigation skills in SL and promote social connectedness and self-confidence.

## Findings

Recruitment posed many technical challenges. Although seven women were recruited and showed considerable interest in serving as beta testers, three were unable to do so because they did not have equipment that met the technical requirements of SL (RAM, graphics card, broadband speed). Four beta testers completed the orientation in two one-on-one sessions with a facilitator. Attendance was complete for six of the seven sessions of the intervention, with one beta tester missing in one of the sessions. Two beta testers had to leave a session early for reasons of fatigue related to fibromyalgia. In the Survey Monkey questionnaire, there was general agreement that the orientation was well-organized and enjoyable, and the Quick Guide was helpful. Three of the four agreed that the amount of information was just right and all agreed that they liked choosing from avatars that were already created rather than having to create their own. They felt confident in their ability to move around in SL and communicate by text and voice. When asked if they felt well prepared to participate in the SL workshop, however, one strongly agreed, two agreed, and one disagreed.

In the post-session questionnaires, the beta testers gave a mean rating to each session of excellent or good (1.48 on a scale of 1-positive to 4-negative), very to somewhat enjoyable (1.74 on a scale of 1-positive to 5-negative), well-organized (1.33), with information presented very clearly (1.15) that was useful (1.89) and would help them make positive changes in their lives (1.74). Ratings were slightly lower for the stressfulness of the sessions (2.15) and whether they learned new skills (2.26). Only 16 of 28 possible "Bud Adventures" were complete (one per session per woman), and those were rated somewhat fun (2.06). The beta testers reported that it was not difficult to communicate with the leaders (1.78) or other participants (1.78). The support they received was high from the leaders (1.19) and participants (1.41).

In describing what they liked best about the program as a whole, three of the four beta-testers specifically mentioned SL, commenting on its uniqueness, the new world it opened up to them, and the opportunity to explore. Two women specifically mentioned enjoying their avatar. When asked about advantages to meeting in SL, two women stated that it eliminated barriers to participation, such as the need for childcare and transportation and the physical demands of attending a face-to-face program. One woman, who described herself as shy, stated that SL was less anxiety-provoking and allowed her to 'hide behind her avatar' until she was comfortable with the group. Finally, one beta-tester said that the novelty of it 'made it more interesting'. When asked to choose between a face-to-face or a SL workshop, three chose SL; the fourth chose SL only when there were strong barriers to attending a program in person.

When asked what they liked least about the program, one woman did not like how the bud adventures were structured, one thought more time was needed between sessions, and two described technical challenges. In discussing the disadvantages of the program in SL, all four noted technical difficulties and three described the technical issues as stressful or overwhelming. Two beta-testers thought that face-to-face programs offered advantages in connecting to others that can not be fully replicated in a virtual world. These two women thought that rapport

developed more slowly in the SL program. A third beta tester echoed this same sentiment in suggesting additional ice-breaker questions be added to the sessions to help participants get to know one another. All four beta-testers complimented the group facilitators' ability to put participants at ease. The co-facilitators' patience was noted to be a particularly important characteristic.

The program is being revised based on the beta-testers' suggestions. To improve our orientation and training program we are adding a one page summary of key navigational instructions, adding a group training session, and incorporating additional practice before the program. Changes to enhance rapport include adding a get-to-know-you question to the sessions, incorporating more discussion in early sessions, training facilitators to encourage more sharing among reluctant group members, taking bud adventures together as a group, and offering optional between-session adventures and opportunities to meet and share. Finally, we are adding a hard copy of program materials to be mailed to participants.

## **Discussion**

Results of this beta test were very positive with excellent suggestions for ways to improve the intervention. The biggest challenges were related to technical problems and being able to maintain positive group dynamics and total involvement of each participant without the benefit of facial expressions or body language. We are concerned that stress and disability-related fatigue were issues for two beta testers. It was difficult for the facilitators to gauge their level of attentiveness without traditional body language cues. Further development of the program should explore using body language animations in SL.

This was our first experience in using exploration of other locations in SL as part of an intervention and it was only moderately successful. Although these activities were perceived as fun and allowed for the development of camaraderie and social support among the beta testers, more supervision by a group leader will help eliminate some of the confusion, hesitance, and navigational problems the women faced.

When the project moves into its pilot testing phase, issues of engagement will become more complex. The beta testers were highly compliant in completing surveys related to the intervention, probably because the group was small and the leaders created high expectations for their cooperation. In a larger group or with several groups involved in the intervention within the same time period it may be difficult to maintain this level of communication.

The parameters for measuring engagement are still under discussion. Although we will be using intent-to-treat analysis of data from the pilot test, whereby data are analyzed from everyone who signs the consent form whether they participate in the intervention or not, we would like to create a variable for degree of engagement. This would include the number of sessions attended, number of assignments completed, and number of surveys completed in Survey Monkey. It would be ideal to include time spent in exploring other locations in SL as part of the bud adventures and beyond; however, such a measure would need to rely on self-report or the attachment of a tracking device on the participants' avatars.

Several ethical issues arose that may be of concern to an institutional review board for research involving human subjects. Given that this population is characterized by pervasive poverty, what is our obligation as researchers to provide them with upgrades or higher quality computer equipment and Internet connection so that they can participate in this innovative form of research? We are developing our interventions for a future when high-quality access to the Internet is a population norm; however, the current reality poses numerous logistical barriers.

Another ethical issue is the somewhat mixed reputation of SL. Although we provided training in the orientation on how to recognize and remove your avatar from intimidating situations, we are tender to our obligation to limit the exposure of participants to sites that may be perceived as threatening.

Further testing of our intervention will involve women with a wider variety of disability types, including some cognitive limitations. This will put additional demands on the orientation, expanding the need for accommodations for visual, hearing, attention, and learning limitations, as well as the fatigue, speech impairments, and manual dexterity limitations.

Future research will investigate identity in SL, particularly as it relates to the stigmatizing versus defining effects of disability, and the dynamics of socialization in a virtual environment. Most importantly, we are very interesting in examining the degree to which health promotion interventions in SL are effective in realizing improvement in sense of self, psychological health, socialization skills, health behaviors, and other outcomes of interest.

### **Conclusions**

Everyone involved in this beta test showed considerable enthusiasm for exploring the new world of SL. The group leaders were challenged to resolve technical problems on every occasion, but these diminished and were perceived as manageable as the intervention progressed. Beta testers appreciated the use of Internet technology as an accommodation to their disability, in place of requiring transportation and energy expenditure to attend face-to-face meetings. We conclude that SL has great potential for delivering health promotion interventions to women with physical disabilities.

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