

Pediatric Anxiety Intervention With an Entertaining Video Game: Feasibility Study

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Prototype Evaluation

Each child-parent pair participated in a single (up to) 3-hour visit, allowing for breaks as needed. Staff from Mayo Clinic HealthCare Policy & Research experienced in qualitative data analysis and not involved with the patients' medical care or development of the video game conducted the study visits. During the first 15 minutes the children and parents were introduced to the rationale for the feasibility study, completed IRB-approved informed consent and assent procedures, and were provided a brief description of exposure therapy and the game's intended purpose to facilitate children's engagement in social exposures. Next, the children were told that they would have the opportunity to earn additional time to play the game if they chose to give a 30-second speech to a co-worker of the interviewer following the initial game-play period. Children were asked to rate their nervousness about giving the speech on a visual subjective rating-of-distress (SUD) scale (0 = "Relaxed, no anxiety" to 10 = "Most anxiety ever") and whether they thought would choose to give the speech (yes/no). Next, children interacted with the game for up to 30 minutes while the interviewer observed and recorded the child's interaction with the game. After the initial game play time, children were asked to rate their anxiety about giving the 30-second speech using the same scale (0-10) and whether they chose to give the speech for additional game time. If the child declined the speech opportunity, the interviewer proceeded directly to the qualitative interview portion of the visit. If the child opted to give a speech, the interviewer stepped out of the room while the child started planning the speech with the parent and, on returning, stated that the co-worker could not be found. The child was then directed to give the speech to the interviewer and was allowed additional time to play the game.

The final portion of the session consisted of a semi-structured interview. The semi-structured guide followed guidelines for minimizing bias and increasing the reliability and validity of interview data [65,66]. All interviews were audio-recorded. First, children and parents learned more about the vision for the full version of the game including concepts for additional levels and linking unlocking levels to completion of real-life exposures. Next, children were asked to rate how much the game would help them complete exposures (0 = "The game would make it harder," 5 = "no difference," 10 "The game would make it easier"), their

preference for completing exposures with or without the game (0 = “without the game,” 5 = “no difference,” 10 = “with the game”), and how much exposure practice they would complete with versus without the game (0 = “much less,” 5 = “no difference,” 10 = “much more”). Parents were asked to rate how much the game would help them and their child complete exposures (0 = “much less,” 5 = “no difference,” 10 = “much more”), how much the game would motivate their child to complete exposures between therapy appointments (0 = “The game would be a distraction,” 5 = “no difference,” 10 = “the game would motivate my child”), and how much they would pay for a complete game with 10-15 levels with an open-ended question followed by a multiple-choice question with graduated pricing options. Both children and parents were asked to comment on what could make the game better, how they would use the game, their overall opinion of the game, , likelihood of recommending the game, and thoughts about doing exposure therapy in relation to the game.

Analyses

Quantitative analyses included calculation of descriptive statistics for children’s and parents’ ratings of the game’s usefulness for exposure therapy, changes in children’s ratings of anxiety and willingness to complete a real life exposure from before to after playing the game prototype, and parents’ reported willingness to pay for the game.

For qualitative data analyses, analysts with experience in qualitative data analysis identified themes, developed a coding strategy, and then coded interviews using methods of content analysis, i.e., systematic process of sorting and coding information based on themes [64,67]. QSR's NVivo 9 (QSR International, Doncaster, Victoria, Australia; NVivo 2010) qualitative data software analysis program was used to facilitate data coding and sorting.