Gametherapy: Playing Computer and Mobile Games for Problem Solving

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Abstract

The purpose of this theoretical study is to indicate that when gametherapy or game play therapy is applied, it can be of benefit to game players in giving them insight into their problems, resulting in a change of behavior or attitude. Gametherapy is a developmentally responsive intervention used by psychotherapists, psychologists, counselors, child therapists, medical and rehabilitation professionals, health care practitioners, and often parents as well; but often criticized for lacking an adequate research base to support its growing practice. Game play therapy can appear equally effective across age, gender, and presenting issue. Gametherapy, which can be conducted with individuals or groups, refers to the use of computer and mobile games to assist clients (especially children and young adults) in their healing process. It may be defined as the use of computer and mobile games to help others gain additional insight and to help them cope with everyday life. Most people have probably use games to determine how others have approached a delicate issue. This study suggests that gametherapy is a potentially powerful method for psychologists, counselors, librarians, school teachers, and parents to use on many levels. It begins with various definitions of gametherapy, continues with a discussion of some approaches to gametherapy (developmental, clinical, and interactive), then addresses the four basic stages of gametherapy (identification, selection, presentation, and follow-up), and finally discusses the benefits and limitations of gametherapy.

Keywords

Introduction

Computer, mobile and video games can be an exciting visual medium of information and support for clients or patients. They provide a visually rich source of learning for children and adults. The game also provides information that might serve a number of purposes for the psychiatrist or mental health professional in clinical practice. The history of game begins with Pong. Pong is one of the earliest arcade video games. It is a table tennis sports game featuring simple two-dimensional graphics. The game was originally manufactured by Atari, which released it in 1972 (Wikipedians, 2019, p.16). Prensky (2001, pp.118–119) states that computer games can be characterized by six key structural elements which, when combined together, strongly engage the player. These elements are:

o Rules;
o Conflict/competition/challenge/opposition;
o Goals and objectives;
o Interaction;
o Outcomes and feedback; and
o Representation or story.

Alessi and Trollip (2001) define seven critical factors that make and artifact a game:

• Goals (i.e., the end towards the player strives. "Goals" refers to game goal and not learning goal. The relationship between both should be of course be clarified and strengthened);
• Rules define actions, i.e., possibilities and constraints;
• Competition;
• Challenge which is adjusted to the current skill level;
• Fantasy, i.e. immersion in some kind of imaginary or real world;
• Safety; and
• Entertainment.

Computer and mobile games can motivate children and young adults to learn. Computer and mobile games, "used as learning tools, can:

o engage young people and adults who may lack interest or confidence in learning;
o deal with different levels of challenges that allow learners to progress;
o reduce the time spent by teachers in training or instruction by offering opportunities for practice;
o give instant feedback in a safe environment;
o help to teach manipulation of objects;
o help to improve skills in literacy and numeracy – educational games have been produced that have had positive results in helping poor readers to make progress;
o help to develop skills in visualization, experimentation, creativity, manual dexterity, strategic and tactical decision making; and

o help to develop critical thinking, problem-solving and decision-making skills" (Emerald Group Publishing Limited, 2005).

Jill Attewell, LSDA research manager, said: "Computer games can be a useful learning aid and their full potential has not yet been fully realized. There is evidence of positive benefits ranging from helping people to improve their literacy and numeracy, to developing complex skills that combine physical dexterity with advanced problem-solving. However, to be effective, educational games need to be carefully designed and deployed to appeal to, and meet the needs of, specific learners, taking into account their abilities, preferences, learning objectives and the context in which they are learning." (as cited in Emerald Group Publishing Limited, 2005).

Computer and mobile games can provide cognitive games to supplement treatment when people such as children or young adults need most help. Games (online, offline or application) can be categorized in terms of their primary function as follows:
o education, or information dissemination;
o peer-delivered therapeutic/support/advice (such as a self-help game); and
o professionally delivered treatment.

Games can revolutionize patient care and patient communication. Computer and mobile games give all clients the opportunity for immediate communication to their therapists and provide an anonymity that is not possible in a face-to-face interaction with another person, regardless of geography, gender, race, religion, and in spite of many physical disabilities and illnesses.

Psychology professionals, counselors, and clinicians can develop a portfolio of useful computer and mobile games that provide games they consider of value for their clients or patients. Clinicians with their own online game websites make available specific games for their clients or patients.

Definitions of gametherapy

The term "gametherapy" is derived from two words – game (i.e., computer and mobile games and applications), and the Greek *therapeia* (healing, to serve or help medically, to attend medically) – and designates a form of supportive psychotherapy. It can be defined as the use of selected games for therapeutic adjuvants or purposes in the treatment of mental and nervous disorders. Gametherapy is a mode of communication. Computer and mobile games are media used to assist in establishing a means of communication and in reinforcing the therapeutic climate of treatment programs. In this study, various definitions of gametherapy are examined.

Gametherapy is sharing games with the intent of helping the client or patient deal with a personal problem. However simple this definition may seem to be, the practice of gametherapy is difficult to describe, defend, or debate. Gametherapy involves playing and mental processing of games that the "gametherapist" (defined as any qualified professional who is using the game as a

medium for practice) has carefully chosen to help the client or patient understand the societal influences that impact his or her personal experiences and to grow in self-awareness. Clinical psychologists, mental health professionals, counselors, and librarians often assign games to help individuals with psychological needs.

Gametherapy or "game therapy" is the employment of computer and mobile games (online or offline) and the playing of them in the treatment of mental and nervous diseases and disorders. Gametherapy is the modern alternative to bibliotherapy self-help treatments. "The term self-help is misleading. It implies that people are involved in an effort to help only themselves, where in fact a defining feature of self-help groups is that people help one another" (King & Moreggi, 1998). Self-help can frequently accelerate or enhance treatment outcome. Self-help can empower a client to greater problem-solving independence. Self-help materials can also enrich themes developed in psychotherapy by using complementary media such as computer and mobile games and books. The most contemporary and interactive source for self-help material is undoubtedly the Internet, and especially computer and mobile game (Noruzi, 2006). Traditional social games has long been recognized as having therapeutic value, as in game play therapy, where game playing is used as an adjunct to bibliotherapy and psychotherapy.

Gametherapy emphasis on recommended games for particular problems or issues. Here, the recommended game distributed via virtual social communities, social networks, e-mail exchanges, online forums, discussion groups, chat rooms, and online game websites is used to help solve personal problems or for psychiatric therapy (the use of games to help children and adolescents cope with emotional problems or mental illness). Some psychologists and clinicians may defend the practice of gametherapy as a rich and sensitive strategy for supporting the digital native generation of children through the difficult process of growing up.

Gametherapy is the use of online and offline games to help people solve problems or adjust behavior. A review of the literature in medicine, mental health and education finds that gametherapy can be applied therapeutically to an astounding range of problems and issues, including: addictions, adoption/foster care, aggressiveness, agoraphobia, anxiety, autism, behavior and communication disorders, child abuse/neglect, clinical depression, conflict resolution, cultural awareness and ethnic identity, darkness phobia, death and dying, dispute resolution, diversity awareness/valuation, drug and alcohol abuse, dysgraphia and dyslexia, emotional disturbance, family dissolution, family violence, giftedness, grief and loss, homelessness, maltreated preschoolers, mental disorders, mood disorders, night terrors, nightmares, obesity, obsessive-compulsive disorder, physical abuse and domestic trauma, relationship or family problems, self-destructive behavior, separation, divorce and loss, sexual workhorse, smoking, social phobias, socio-emotional difficulties, stress, talented and gifted children, etc.).

Gametherapy is the process of dynamic interaction between the personality of the client or patient and the game as a psychological field which may be used for personality assessment, adjustment, growth, clinical and mental hygiene purposes. Briefly, gametherapy is:

- healing through games;
- playing computer and mobile games to solve and better understand personal problems; and
- mutual sharing of games to structure interaction between a facilitator and a participant to facilitate personal development or problem resolution through games.

Multiple terms found in the literature virtually synonymous with the concept of gametherapy are game counseling, game guidance, game psychology, game therapy, game therapeutics, e-game-therapy, and online game therapy.

Gametherapy is growing and appears to be growing steadily. Gametherapy is an oxymoron, because psychotherapy is based upon both verbal and non-verbal communication. Gametherapy is under way and is likely to expand in the future. Self-help organizations and groups, psychologists, and non-profit game websites, and mobile games and applications attempt to provide quality mental-health services via the game.

The point of gametherapy is to provide the clients with models for effective coping and problem-solving. For example, recommending appropriate games (online or offline) for clients experiencing personal problems (e.g., achluophobia, the fear of darkness; nightmares; adaptation; child abuse; dyslexia; social phobia; divorce or bereavement) in the expectation that accounts of fictional character coping with similar situations and difficulties will help clients to find out an adequate solution. Thus, gametherapy is a guided game-playing approach, which helps clients gain insight, understanding of the self and environment, focus attention outside the self, provide relaxation and diversion, find solutions to problems, or learn from others.

One of the underlying assumptions of gametherapy is that the act of game playing itself is a naturally interactive process. By placing himself or herself in the shoes of a game's major characters, goes the notion, the client can extrapolate from their experiences and apply their ways of dealing with their fictional characters' ups and downs to his or her own life. Maybe, maybe not – but sometimes the mere act of absorbing top-notch game can have a positive effect. Anyone who plays good games has experienced the feeling of uplift and reassurance that comes from consuming a delicious slice of prose.

The idea of healing through games is not a new one – it can be traced far back in history, from the days of the traditional games and plays, and game play therapy. The use of traditional games and plays in healing, however, has been interpreted differently by classical scholars, physicians, psychologists, social workers, nurses, parents, teachers, librarians and counselors. There is, in fact, confusion in determining the dividing line between game-play guidance and gametherapy.

The purpose of this study is to indicate that when gametherapy is applied, it can be of benefit to clients or patients in giving them insight into their problems, resulting in a change of behavior.

Literature review

The word "gametherapy" is inspired by "bibliotherapy", i.e. the use of books to help patients. Gametherapy is a recent development when contrasted with the long history of therapists delivering treatment via plays, letters, telephone (e.g. Haas *et al.*, 1996; Padach, 1984; Wiederhold *et al.*, 2000), e-mail (Andersson and Kaldo, 2004; Carlbring and Andersson, 2006; Carlbring *et al.*, 2006; Eysenbach and Diepgen, 1998; Murphy and Mitchell, 1998; Stofle, 2001; Strijm *et al.*, 2000), web bibliotherapy, and webotherapy (Noruzi, 2006, 2007). The first documented use of bibliotherapy as an intervention technique was recorded in 1840 (Afolayan, 1992). And in 1916, the term "bibliotherapy" was used in a published article in *The Atlantic Monthly* to describe the process of presenting books to medical patients who needed help understanding their problems (Crothers, 1916).

A computer or mobile game is a computer-controlled game where players interact with game characters displayed on a screen for entertainment, learning, education, or therapy. Gametherapy is a relatively new form of therapy designed to help people access, process, and overcome trauma, pain, negative emotions, behaviors and habits. There now seems to be a growing societal shift toward using the game to inexpensively administer self-help treatment instructions, in combination with some sort of computer and mobile game human interaction. Computer and mobile games provide a unique possibility of an anonymous and confidential forum for participants to be able to examine and identify physical or mental illness, disease, pain, or discomfort, explore difficult emotions and seek support from others online, without the appearance-related pressure and self-consciousness typically associated with face-to-face interactions.

Games have the potential to serve as a medium for psychological and behavioral treatments. Therefore, gametherapy can be used as an alternative to patient-therapist contact, two principal obstacles being the need to find out more about treatments, and to receive training in their use. On the other hand, in gametherapy the focus of the treatment does not shift into technology but remains on the traditional process of psychotherapy. The traditional setting could move into a virtual or synthetic environment without affecting the basic principles and phases of treatment (Castelnuovo, Gaggioli, Mantovani & Riva, 2003). Although the main problem for the success of gametherapy is organizational rather than technical, there are technological limitations that need to be considered, such as insufficient image quality, low Internet speed, flickering and delays that make working in front of a computer game unattractive, and fatigue. However, the quality of technology in this area and development of three dimensional games are increasing.

Gametherapy can be divided into four categories:
   (1) self-administered therapy or pure self-help;
   (2) predominantly self-help (i.e., therapist assesses and provides initial rationale, and teaches how to use the self-help tool);

(3) minimal contact therapy (i.e., active involvement of a therapist, though to a lesser degree than traditional therapy); and

(4) predominantly therapist-administered therapy (i.e., regular contact with therapist for a number of sessions, but in conjunction with self-help material (Scogin, 2003; Carlbring & Andersson, 2006).

Game-based self-help plus minimal therapist contact via e-mail or telephone is a promising new treatment approach for people suffering from physical or mental illness, disease, pain, or discomfort. Specifically, the treated participants achieved significant improvement on measures of social anxiety, fear, avoidance, depression and general anxiety. However, "the constant availability of online support may decrease some clients' interest in face-to-face psychotherapy, as ease of use and accessibility of the Internet may become a more attractive alternative to more traditional methods of support" (Tate & Zabinski, 2004).

An advantage of gametherapy especially online games is the ability to use the power of the Internet to feed relevant supplementary material to clients quickly and easily. Links to educational, learning and stimulating games, video games, video clips, documents, and assessment tools are readily supplied via all online therapy modalities (Grohol, 2000; Rochlen *et al.*, 2004). Whereas traditional game play therapy takes place in the therapist's office, limiting the therapist to whatever games he or she has on the desktop computer, online gametherapy always takes place in a context with limitless games.

Gametherapy is *potentially more secure, confidential, and private* than traditional face-to-face therapy. Because of the unique qualities of the gametherapy, therapeutic change can take place in an anonymous or pseudonymous context. Gametherapy can be a *more powerful, quicker change agent than traditional psychotherapy*. Gametherapy is a new type of psychotherapy. It is simply not psychotherapy transplanted computer and mobile games, no more than telephone interventions are simply psychotherapy transplanted to the telephone, crisis intervention is psychotherapy done quickly, or play therapy is psychotherapy done with toys. Gametherapy uses the *richness of images, sounds, voices and words* to help bring about change in the client's life.

Gametherapy can be feasibly delivered and can achieve improvements in unhealthy attitudes. Given that the intervention can be easily and inexpensively disseminated, it may be an appropriate first line of treatment in a stepped-care approach for a large number of treatments.

People can use computer and mobile games as an adjunct to their efforts in recovery from various disorders. Because, it makes another great "opportunity to share experiences with others" with "the convenience of being in your own home" (Dubin *et al.*, 1998). The variety of the games is one of the most beneficial values gained from being involved the game. Games which therapists have either located or actually created and uploaded on the Internet or on their desktop computers can be shared directly with clients. Clients with hearing impairments can participate

in text-based chat counseling sessions, and blind clients who might not otherwise get services can use audio applications (Kirk, 1997).

The purposes of gametherapy like bibliotherapy are diverse:
- to provide insight;
- to rebuild thought structures;
- to impart information;
- to refocus the emotions;
- to stimulate discussions (actions, attitudes and behaviors) about problems;
- to redirect the will;
- to communicate new attitudes and values;
- to teach new solutions to problems;
- to enhance self-esteem; and
- to furnish relaxation and diversion (Cronje, 1993).

Gametherapy is a type of brief intervention in which clients or patients receive audio-visual materials and games on the harmful effects of a given problem and guidelines for reducing it. These interventions represent a potentially powerful and cost-effective tool for the early treatment of people in a variety of settings. Therefore, gametherapy can effectively play the role of bibliotherapy and webotherapy.

The main difference between the present study and the previous studies is that this study suggests the computer and mobile games as an adjunct or the modern alternative to play therapy, bibliotherapy and traditional psychotherapy.

The purposes of gametherapy

Games and gametherapeutic intervention may be undertaken for various reasons:
- to help a person encounter and solve a problem virtually via computer or mobile games;
- to show an individual that he or she is not the first or only person to encounter such a problem;
- to show an individual that there is more than one solution to a problem;
- to develop an individual's self-concept;
- to increase an individual's understanding of human behavior or motivations;
- to foster an individual's honest self-appraisal;
- to provide a way for a person to find interests outside of self;
- to relieve emotional or mental pressure;
- to help an individual plan a constructive course of action to solve a problem;
- to increase coping skills and adaptive functions;

- to reduce negative emotions, such as anxiety, stress and loneliness;
- to develop personal and social judgment;
- to improve tolerance for ambiguity and accuracy in perceiving self and others;
- to identify and overcome overpowering emotions;
- to develop self-esteem, self-expression and self-understanding;
- to develop personal creativity;
- to strengthen interpersonal communication skills; and
- to help an individual to reduce the fear of something (e.g., fear of nighttime) (Noruzi, 2007).

Therapists and counselors can prescribe gametherapy, through stories of life transformation via computer and mobile games, to their clients as a way of coping with problems, understanding that others have overcome similar life situations (problems or disorders), and learning new skills and solutions. Games can educate the client about the problem or disorder itself or be used to increase the client's understanding and acceptance of a proposed treatment and to promote a stronger sense of personal responsibility for health care.

Benefits of gametherapy

Gametherapy may help the client to develop insight into his or her problems and it encourages the externalization and projection of the problem into a virtual situation. It serves as an indirect communication channel between the client and the gametherapist. If the client realizes that his or her problems are not unique, it may reduce his or her feelings of isolation. Gametherapy has many practical advantages; among these are easy access to a wide variety of online or offline games, flexibility in application to various settings, and use with a range of problems and clients, convenience and increased access for both clients and therapists.

Gametherapy also has the potential to serve people with limited mobility, physical disability, time restrictions, and limited access to mental health services (Rochlen *et al.*, 2004). Clients or patients living in remote areas, physically disabled clients with restricted mobility, or clients who are reluctant to seek face-to-face therapy because of anxiety or fear of stigmatization may be reached through the game.

Pehrsson and McMillen (2006) list the benefits of bibliotherapy that are most frequently mentioned by experienced therapists, which also can be considered as benefits of gametherapy:
- provides a window – increases awareness of and empathetic understanding for other cultures, lifestyles and lived experiences;
- provides a mirror – increases appreciation of, pride in and identification with one's own ethnic/cultural identity;
- promotes coping skills;

- provides information and alternatives;
- stimulates encounter and interaction of problems, feelings, solutions and ideas;
- increases enjoyment of game and playing; and
- enhances insight and integration.

Gametherapy can also be examined as a low-cost option for people with both depressive and anxiety disorders. Its effects can be enhanced with re-enforcement and support by psychotherapists, clinicians and practitioners. It is a client-friendly, high-tech, low-cost, easy to use, inexpensive, self-implemented and non-invasive technique to heal the emotional wounds of illness.

Stages of gametherapy

Gametherapy is an adjunct to other therapies, consisting of four stages:

(1) Identification of the client's needs, emotions and issues.

(2) Selection of appropriate games that directly address the client's socio-emotional difficulties, that allow the client to identify personally with the game's main character, and that provide correct solution and information about a presenting problem (the therapist should play the game before recommending it to a client; the therapist should be aware of the complexity and length of the game and should take into account the client's age, gender, background, computer literacy, education level, and interests). The selection process takes skill and insight, as the games must provide correct solution and information about a problem while not imparting a false sense of hope.

(3) Presentation of games carefully and strategically so that the client is able to see similarities between himself or herself and the characters in the selected games, and applying the technique through developmentally appropriate strategies by holding discussions with the client by asking the following questions:

- o What is the game about (goals and objectives)?
- o How does the game make you feel?
- o Who is the main character?
- o What problem did the main character encounter?
- o How did the main character solve the problem?
- o If you faced a similar problem, what might you do? (Sullivan & Strang, 2003).

These discussions provide therapists with the opportunity to determine whether the client adequately understands the selection's message; and

(4) Follow-up of the client after playing the games (e.g., replaying of the game, analyzing decisions of characters, role-playing, creative problem-solving, discussing right and wrong, morals, the strong and weak points of the main character, resolving the story in a different way), encouraging the client to think about how he or she relates to the self. Each of these stages must be carefully considered by the therapist.

The main criteria to select a game are as follows:
- o the game should offer useful content on the problem area covered;
- o the game should focus on one or more of the clinical or psychological topics covered in the game; and
- o the game should be clearly appropriate to the implementation of the gametherapeutic process.

As an alternative to traditional medication, doctors can refer clients or patients who are struggling through bouts of stress, depression and anxiety to a gametherapist at a hospital library, at a public library, or an online gametherapist. The gametherapist will then scan the game to create a customized course of games designed to cure each client's particular problem. The goal is to pair clients or patients with games that will serve as an inspiration for them to get better or at least cheer them up. The assumption is that playing particular games can cheer patients up. The idea is that gametherapists should talk to clients, find out what kind of games they normally like to play, why they are stressed or ill, and then prescribe them an individual list of games. Gametherapists should maintain lists of games that they think might help people in different situations. The goal for gametherapists is to know this material in case someone wants it.

Types of gametherapy

Based on the types of bibliotherapy and play therapy, there are three types of gametherapy. Whichever approach it involves, gametherapy requires careful planning.

Developmental

Developmental gametherapy involves helping clients in their normal health and development. It focuses on helping clients cope with developmental needs rather than relying on a clinical or individualized approach. The advantage of this approach is that therapists can identify the concerns of their clients and address the issues before problems arise. It is defined as the use of games and facilitative processes by skilled helpers to assist individuals in dealing with life transitional and normal developmental issues (Pehrsson & McMillen, 2006). Simple society games can be accessible and enjoyable to players of all ages (Wilkinson, Ang & Goh, 2008).

Clinical

In clinical gametherapy, skilled practitioners use gametherapeutic methods to help individuals experiencing serious emotional and behavioral problems. It is defined as the use of games and facilitative processes by skilled mental health or medical clinicians in meeting a deliberate therapeutic goal for the purpose of assisting individuals in dealing with severe disorders and traumatic life experiences (Pehrsson & McMillen, 2006).

Interactive

In interactive gametherapy, participants engage in activities that help them reflect on what they

play, such as computer and mobile games. The player becomes part of the unfolding intellectual and emotional process of the story, and in struggling to understand what is being communicated at the deepest levels, the player responds by making a positive alternation or modification in behavior or attitude (Myers, 1998).

Discussion

An advantage of gametherapy materials is their online and offline accessibility. They can be delivered and distributed through the Internet and mobile phones. Games are one of the means used to purge emotions, heal or comfort each other, creator and game player alike. As an example, a game can give perspective, hope and determination to other potential patients diagnosed with the same problems (e.g., achluophobia (the fear of darkness), communication disorders, socio-emotional difficulties, grief and loss, relationship or family problems, death of a loved one, separation and divorce, social phobias, etc.).

A virtual patient in a game can recommend and share his or her experiences with people who fall ill. Thus, the game offers a medium and a context for the exchange of experiences, advice and opinions from virtual fellow patients in the game. In fact, gametherapy is a playing therapy technique. As a patient plays, she or he is typically playing what she or he is encountering and feeling. This in turn has the potential to impact on himself or herself as she or he plays, and so impact on what she or he plays next. Therefore, game playing is an *audio-visual mirror and an externalizing mechanism* for clients or patients to see themselves in games. There they are, looking at themselves. This process allows clients or patients to develop some distance from their problems and to see themselves and their relationships as distinct from the problem itself.

Gametherapy can be used as an adjunct to individual or group therapy and is a form of self-administered treatment in which games provide a means of self-improvement or help to alleviate distress, to increase awareness and enhance lifestyle changes. Griffiths (1997) suggested that computer game playing for most children is a fairly absorbing and harmless activity but that, for a small minority of children, it may be problematic.

Conclusion

Gametherapy is a suitable way to learn new skills in problem-solving, coping and troubleshooting. It promotes spirituality and self-help and leads to mutual help. It is worth noting that a single gametherapeutic session is not sufficient to effect real change in clients. Therefore, a variety of follow-up activities can be used to help clients bridge the gap between their games and personal application to their own lives. Gametherapists can establish online games' list and discussion groups to be used by clients with mental disorders, providing access for clients to state their questions or comments and receive replies from other clients or health care professionals.

Gametherapy has a broad range of applications with individuals of all ages, and is used for health maintenance, and among populations requiring treatment for various situations (children, adolescents, families with problems, the learning disabled, the elderly, the physically challenged, and survivors of violence, abuse and incest). However, since gametherapy cannot be used with all clients, for all purposes, or in all settings, practitioners must be selective in its use. The therapist must be aware of the limitations of the gametherapeutic approach. Inevitably, responses to gametherapy differ from client to client. Consequently, every client needs his or her game. In addition, future studies need to compare gametherapy interventions with traditional generally face-to-face bibliotherapeutic and play therapy approaches in order to determine whether gametherapy approaches could replace play therapy and bibliotherapy, or whether it should be viewed as an adjunct to play therapy and bibliotherapy.

The use of self-help gametherapy as a means to treat problems, can improve behavioral change outcomes. However, game-based self-help treatment does not suit all patients, and we could present cases for which the treatment did not work as well. Moreover, there are very few behavioral and cognitive psychotherapists who know how to treat problems via games, and thus dissemination of gametherapy for behavioral disorder is particularly important. For example, games can be a practical and promising means of delivering cognitive behavioral interventions for preventing depression and anxiety to the general public.

Clients or patients who receive the gametherapy treatment may substantially reduce their symptoms, including depression, anxiety, distress and annoyance. The treatment can be beneficial. However, we suggest that in order to be able to determine if the game can be used more regularly, there is a need to compare game treatment with ordinary treatment within the same study. But there is a risk that clients or patients may take a short cut to use games rather than obtaining professional advice from medical practitioners. However, such risks should not be overstated, as there is little evidence to suggest that clients or patients use the game as an alternative to consultation with medical practitioners. These concerns may be matched by the positive benefits of gametherapy, which include encouragement that other clients or patients have coped with a similar problem, and the ability to share humour and express frustration at the perceived inadequacy of professional advice. While it is clear that there is a need for mutual support and sharing of information between patients, it is important that this information is accurate and sensible.

We should facilitate access to quality child and adolescent games by introducing and linking other games in an online format which seeks to:
- o   evaluate games for gametherapeutic work with children and adolescents;
- o   find evaluated games for certain age groups and issues; and
- o   learn more about the use of games in therapy.

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