Evidence based treatment approaches in behavioral addiction

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Summary
Behavioral addiction is relatively a new concept in psychiatry. But it has direct or indirect negative impacts on almost all phases of the life cycle. Not surprisingly, there is scarcity of summarized outline of evidence based treatment modalities for different types of behavioral addiction. This article aimed at fulfilling this scarcity. For this purpose, twenty two articles were selected through searching internet and reviewed. This article summarized the findings and indicated that targeted multimodal, bio-psychosocial approach of treatment including individual, group, family or conjoint therapy, use of medication when necessary and adjunct treatments such as self-help groups will be the most cohesive and effective way for behavioral addictions. Findings of this article will help our day to day clinical practice by providing an overview of treatment approaches for different types of behavioral addiction.

Introduction
Behavioral addiction, as a concept, is relatively new and revolutionary.1 It is a form of addiction that involves a compulsion to engage in a rewarding non-drug related behavior—sometimes called a natural reward despite any negative consequences to the person’s physical, mental, social or financial wellbeing.2 Growing evidence suggests that behavioral addictions resemble substance addictions in many domains including natural history, phenomenology, tolerance, comorbidity, overlapping genetic contribution, neurobiological mechanisms and response to treatment.3

Behavioral addictions are certainly the most controversial of the potential interactions among addictions.4 Still there are lots of debates about the use of the term ‘addiction’ as diagnostic and treatment purpose.5 But in 2010, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), added the term ‘behavioral addictions’ to the set of official psychiatric diagnoses.6 Debate is also high about the types of behavioral addiction. Existing data are most extensive for pathological gambling. Data are limited for compulsive buying, internet addiction, and video/computer game addiction and almost no data are there for other behavioral addictions such as sexual addiction, love addiction, pathologic skin picking, or excessive tanning.7 As a result, gambling disorder has been included in the Non-SRD category of substance related and addictive disorders in the DSM-5, being shifted from its previous categorization in “impulse-control disorders not elsewhere classified” in DSM-IV-TR under the name pathological gambling. Internet gaming addiction is included in the appendix as a condition for further study.6 Again there are conflicts about naming of the various types of behavioral addiction. For example- the term ‘eating addiction’ was suggested instead of ‘food addiction’;7 sexual addiction was described as excessive sexual appetite, hypersexuality, compulsive sexual behaviors and excessive sexual desire disorder.8,9 But there is no debate about the negative impacts of this behavioral addiction, directly or indirectly, on almost all phases of the life cycle of the individual and the family that prevent a normal human functioning.10 This article aimed to summarize available evidence based treatment modalities for different types of behavioral addiction considering its management a burning issue now a days.

Materials and methods
Study documents were identified through searching Google Scholar and Health Inter Network Access to Research Initiative (HINARI). Used searching keys were mainly ‘management of behavioral addiction’ and then search was done using management of different types of behavioral addiction as well as different treatment methods separately in different types of behavioral addiction. The purpose of the review was to summarize the key findings of the treatment of different types of behavioral addiction and suggest the recommendations for future research. So, full free articles focusing only on treatment of behavioral addiction both original and review types were
included. Articles associated with other topics like substance related disorder or comorbid illnesses as well as articles from books and different non-academic websites were excluded. Thus, total 22 articles were finally selected among 52 primarily selected articles and after reviewing, findings were summarized.

Results and discussion
Pathological gambling: A multimodal approach including Cognitive Behavioral Therapy (CBT), self-help groups and pharmacotherapy has been advocated for the treatment of pathological gambling in all of the journals reviewed here.\textsuperscript{11-14} But the effectiveness of these modalities is inconclusive due to scarcity of controlled treatment studies and long-term follow-up studies.\textsuperscript{11}

Psychological treatment: Major limitations of psychological treatment studies are the lack of long-term follow-up and high drop-out rates. Behavioral therapies: Different forms of aversion therapy—electrical aversion therapy, imaginal desensitization, imaginal relaxation, behavioral monitoring, covert sensitization and spousal contingency contracting were used previously, which are now no longer used. Among them imaginal desensitization had the best outcome.\textsuperscript{12} Cognitive behavioral therapies (CBTs): Now regarded as the ‘intervention of choice’ for the treatment of problem gambling. It acts through a common mechanism of generating therapeutic change via the reprogramming of maladaptive core beliefs,\textsuperscript{13} such as gamblers’ beliefs in randomness and chances, the false notion that they can control and predict outcome.\textsuperscript{12,13} This is also known as ‘second-wave CBT approach’. Ultimately, patients become able to ‘self-intervene’ and to control and modify cognitive distortions.\textsuperscript{13} Other treatments often incorporated in cognitive—behavioral packages include—training in assertiveness, problem-solving, social skills, relapse prevention and relaxation. Statistically and clinically significant improvement on many outcome measures was found in different studies which were maintained in 1 year follow-up studies.\textsuperscript{12} Problem gamblers who received ‘third-wave CBT approaches’, that is, mindfulness—enhanced cognitive behavior therapy demonstrated significant improvements in levels of gambling severity, gambling urges, and emotional distress. Though advocated invariably, CBT does not appear to be an effective or accessible treatment for all problems in gambling patients as well as high relapse rates were also found in long-term follow-up data. Mindfulness therapy: Weekly mindfulness therapy sessions can lead to clinically significant change among individuals with gambling problems. But the findings are not out of questions as because of using mindfulness as an adjunct to other more conventional therapeutic techniques in these studies.\textsuperscript{13}

Medication: No drug has been approved in the United Kingdom or United States of America to treat pathological gambling\textsuperscript{12,14} and no clear guidelines are currently available.\textsuperscript{12} No trials have demonstrated superiority of any group of drugs over others. Higher doses are required often and side-effects are therefore more common. There is no clear evidence on how long to continue treatment, though most articles recommended that initial treatment should be at least 4-6 months initially which could be maintained thereafter.

Patients should be informed of off-label use and the empirical basis for considering medication for pathological gambling. The basis of use of medication may be the similar characteristics between pathological gambling and substance abuse, like—repetitive or compulsive engagement despite adverse consequences, diminished control, an urge or craving prior to do, and a hedonic thrill when taking part in the behavior.\textsuperscript{14}

Selective Serotonin Reuptake Inhibitors (SSRIs): Trials of SSRIs, although promising, have been inconclusive.\textsuperscript{14} Fluvoxamine, citalopram, paroxetine, sertraline and fluoxetine have all been tried with some success in treatment trials for pathological gamblers.\textsuperscript{12} Response to antidepressants usually means fewer thoughts about gambling, less participation in the behavior and improved social and occupational functioning.\textsuperscript{14} Opioid antagonist: Naltrexone reduces the intensity of urges to gamble, thoughts about gambling, and the behavior itself when given in high doses ranging from 50 to 250 mg/day; with mean dose: 157 mg/day. Naltrexone was found more effective in gamblers with more severe urges than moderate. Naltrexone’s clinical use, however, is limited by its side effects such as nausea and its tendency to elevate liver enzymes.\textsuperscript{12,14} Nalmefene also demonstrated same statistically significant improvement like naltrexone but not associated with hepatotoxicity.\textsuperscript{14} Mood stabilizer: Mood stabilizers might be helpful for some pathological gamblers, but still not highly approved\textsuperscript{14} while some case reports have shown lithium and carbamazepine to be effective. Others: Other drugs, which have been shown some success, include olanzapine, bupropion, topiramate and nefazodone.\textsuperscript{12}

Support group: Gamblers Anonymous: Gamblers Anonymous is a self-help group modeled on Alcoholics Anonymous which uses a medical model of pathological gambling with total abstinence as the treatment goal. Despite its popularity; very little research evidence exists to support the efficacy of Gamblers Anonymous. From a clinical perspective one should be offered Gamblers Anonymous in conjunction with other treatments.\textsuperscript{12}

Sexual addiction:
Best practices of different modalities of treatment for sex addiction are based upon numerous uncontrolled studies, case reports, a sound theoretical framework, consensus among
practicing clinicians and expert opinion rather than significant placebo-controlled double-blind studies. During treatment, one article suggested the clinicians to bear in mind that sex addiction has an intricate web of addictions, compulsions, and avoidance strategies. Another article indicated that the physician must decide whether the sexually excessive behavior is situational or part of a pattern. If situational, then the focus should be on the patient’s response to the situation and while it is a pattern, the physician must rule out the compulsivity and other mental health issues. Treatment is mainly outpatient basis. But while a patient is with high-risk, life-threatening sexual practices or when failure at an outpatient level occurred, inpatient treatment is needed.

**Psychological treatment:** Individual psychotherapy for compulsive sexual behaviors is varied but the two most common approaches are cognitive behavioral therapy (CBT) and psychodynamic psychotherapy. **Psychodynamic therapy:** Long-term and multimodal psychotherapy may also be required to address the deeper causes of sex addiction. For this an article suggested psychoanalytic, object relations oriented, interpersonal, and other modes of insight-oriented psychotherapy for sex addiction patients who are generally not good at sex. Psychodynamic psychotherapy in compulsive sexual behaviors explores the core conflicts, commonly - themes of shame, avoidance, anger, impaired self-esteem and efficacy and those drive dysfunctional sexual expression. **CBT:** This focuses on identifying triggers to sexual behaviors and reshaping cognitive distortions about sexual behaviors; e.g., “I’m not really cheating on my spouse if I go to a massage parlor.” **Sex therapy:** It is well-known that, the sex addicts perform poorly in the bedroom. Therefore, in addition to addiction treatment, they need sex and conjoint therapy but in a modified format. Sex therapy can be commenced only after the patients have their dysfunctional behaviors under control. Again, conjoint treatment is generally required to promote healthy relationships and satisfying sexual experiences during recovery. **Family therapy and couple therapy:** This may restore trust, minimize shame/guilt and establish a healthy sexual relationship between partners. **Others:** Motivational interviewing (MI) and Dialectical Behavioral Techniques (DBT) are also advocated by one recent journal.

**Medication:** **SSRI:** It is highlighted in an article that, citalopram showed a moderate and significant reduction in masturbation and pornography use. This article also supported the use of medications causing increase of serotonin, like the selective serotonin reuptake inhibitor (SSRI) and serotonin/norepinephrine reuptake inhibitor (SNRI) to reduce desire, arousal and orgasm. But another article opposed the superiority of any single drug over others though admitted that SSRI has demonstrated superior efficacy to another group. **Anti-anxiety agent:** It was suggested that, anti-anxiety agents may be helpful when sexual acting out is triggered by anxiety. But because of their tendency towards multiple addictions, benzodiazepines need to be judiciously prescribed. Buspirone may be useful due to non-addictive effects but might increase sexual desire. **Opioid antagonist:** Treatment with naltrexone and nalmefene may be effective for some patients with sex addiction by decreasing sexual compulsivity. **Mood stabilizer:** Mood stabilizers and anti-impulsive medications such as lithium, valproic acid, carbamazepine and lamotrigine may be useful, particularly when manic or impulsive features are prominent or when promiscuity is a major presenting feature by sexual suppression. **Antipsychotic:** Antipsychotics may be indicated when disturbed reality testing, thought disorders, or severe agitation are prominent clinical features. Antipsychotics may exert their benefit by reducing sexual desire, arousal and orgasm.

**Anti-androgens and surgical intervention:** These are the rarely used, mostly theoretical and temporary options for treatment of sex offenders. Antiandrogens, such as medroxyprogesterone acetate (300–500mg per week, intramuscularly) or cyproterone acetate (300–600mg per week, intramuscularly), lower serum testosterone levels and diminish sexual drive and desire. But, literatures suggested its indication only in extreme cases of sexual acting out, e.g., sentenced sex offenders.

**Support group:** Peer-support groups are helpful. There are five self-help fellowships modeled after Alcoholics Anonymous, which are - Sex Anonymous, Sexaholics Anonymous, Sex Addicts Anonymous, Sex and Love Addicts Anonymous, and Sexual Compulsives Anonymous. Partners and couples may attend S-Anon Family Groups, Co-Dependents of Sex Addicts, and Recovering Couples Anonymous. Besides these, another article mentioned some support organizations including - The National Council on Sexual Addiction and Compulsion (NCSAC), American Foundation for Addiction Research (AFAR), Recovering Couples Anonymous (RCA). But the reviewed articles highlighted the variation of their activities according to the local culture, sexual orientation of the participants and the group’s approach to abstinence, celibacy, and masturbation. There is almost no data evaluating their efficacy or effectiveness. But participation in these groups is usually recommended because of providing a place for fellowship, support, structure, and accountability and they are free of charge.

In another study, treatment of sex addiction in three phases was advised, which are shown on the table 1. Despite all these, results are not as much as expectation. The results indicated that, brief interventions did not produce the desired results and recovery is a long-term process as well as dependent on patient follow-through. Similarly, individual therapy without the support of the patient’s partner or a 12-step fellowship significantly reduces desired outcome.
Table 1: Three phases in treatment of sex addiction\textsuperscript{15}

<table>
<thead>
<tr>
<th>Phase I Intervention</th>
<th>Phase II initial treatment</th>
<th>Phase III Extended therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey extent of problematic behavior</td>
<td>12-Step attendance</td>
<td>Complete steps 2 – 4 of 12-step process</td>
</tr>
<tr>
<td>Teach about illness step process</td>
<td>Complete first step of 12-</td>
<td>Developmental issues</td>
</tr>
<tr>
<td>Referral to 12-Step Program</td>
<td>Agree on writing an abstinence definition</td>
<td>Family-of-origin issues</td>
</tr>
<tr>
<td>Confront denial</td>
<td>Written relapse-prevention plan</td>
<td>Grief resolution</td>
</tr>
<tr>
<td>Agree on behavior contract</td>
<td>Complete period of celibacy</td>
<td>Marital and family therapy</td>
</tr>
<tr>
<td></td>
<td>Develop a sex plan</td>
<td>Career issues</td>
</tr>
<tr>
<td></td>
<td>Partner and family involvement</td>
<td>Trauma therapy</td>
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<td></td>
<td>Multiple addiction assessment</td>
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<tr>
<td></td>
<td>Trauma assessment</td>
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<td></td>
<td>Group therapy</td>
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<td>Shame reduction</td>
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**Food addiction:** A multimodal approach is advocated by an article including motivational talks, cognitive behavioral therapy, problem-solving program, 12-step approach, medication etc. Regarding medication, a drug named niconapram has mentioned whose impact is still being tested on animals. But there was no discussion in details about the approaches, which is a major limitation. This article also suggested some guidelines to follow for improving the effect of treatment, where the headings were: 1) we should not starve 2) Eat only when you feel hungry and stop when you feel satiety 3) Avoid stress, control emotions and 4) Regular exercise.\textsuperscript{10}

**Internet addiction:** A multimodal treatment approach is also advised here. A six-week group counseling program, including CBT, social competence training, training of self-control strategies and training of communication skills was shown as effective.\textsuperscript{17}

A special model of CBT, named as cognitive behavioral therapy-Internet addiction (CBT-IA) was highlighted by an article which is based on harm reduction therapy (HRT) and has three phases. In first phase, a Daily Internet Log is to be maintained with a view to decrease amount of spending time on internet. The second phase is to apply CBT to address and to restructure the maladaptive cognitions. Then, applying HRT to identify and treat coexisting issues is the third phase.\textsuperscript{18}

**Community Reinforcement and Family Training** and interventions with family members or other relatives found to be useful in motivating an addict to cut back. **Reality therapy (RT)** was also effective where addicted individuals committed to change their behavior, trained up in time management and introduced alternative activities.\textsuperscript{17} **Acceptance & Commitment Therapy** (ACT) protocol was also mentioned which included several exercises for better adjustment to sufferers from problematic internet pornography viewing.\textsuperscript{17}

In particular, **SSRIs** are advocated for the co-morbid psychiatric symptoms.\textsuperscript{17}

The reSTART program, a recent approach was highlighted in a review journal. It is an inpatient internet addiction recovery program, in an individualized, holistic approach, combined with technology detoxification, Cognitive Behavioral Therapy (CBT), Acceptance and Commitment Therapy (ACT), brain enhancing interventions, animal assisted therapy, Motivational Interviewing (MI), Mindfulness Based Relapse Prevention (MBRP), Mindfulness Based Stress Reduction (MBSR), interpersonal group psychotherapy, individual psychotherapy, experiential adventure based therapy, drug and alcohol treatment, 12 step work, individualized treatments for co-occurring disorders, psychoeducational groups, aftercare treatments and continuing care as outpatient treatment.\textsuperscript{17}

**Compulsive Buying Disorder (CBD):** All articles admitted that there are no standard treatments for CBD. But, all of them suggested some treatment modalities based on studies with small samples.\textsuperscript{19-21} In a review article, author highlighted the focus on antidepressant medication, cognitive behavior therapy as treatment option in studies. Among these, feasible options are informing patients that medication are unreliable, patient should have to admit they have CBD, shop with a friend or relative not having CBD, find meaningful other options to spend leisure time.\textsuperscript{19}

CBT was found effective especially in group therapy. Exposure and response prevention therapy was also advocated in
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different studies as well as marriage (or couples) counseling, financial counseling on need basis,\textsuperscript{20} Antidepressants alone\textsuperscript{20} or in combination with mood stabilizers,\textsuperscript{21} with or without depression,\textsuperscript{20} was found effective. Fluvoxamine showed promising result while results with citalopram or escitalopram were not significant.\textsuperscript{20,21} Self-help books are available and helpful. Self-help groups, like - 'Debtors Anonymous' patterned after 'Alcoholics Anonymous'; and 'Simplicity circles', a voluntary groups encouraging people to adopt a simple lifestyle; also may be helpful.\textsuperscript{20}

Exercise addiction: There is scant literature on actual treatment of exercise addiction. Returning to moderate exercise is the goal of treatment rather than abstinence from exercise. CBT is the preferred option, while contingency management is also effective. A new form of exercise may be recommended, like the runner becomes swimmer. Again, the person may continue to perform same exercise in controlled manner.\textsuperscript{22}

Excessive tanning: No empirical literature on the treatment of excessive or pathological tanning other than the importance of targeting the underlying psychopathology was found. However, a number of interventions are suggested, which were - providing printed information on the risks of excessive sun exposure, presenting an ultraviolet photon demonstrating skin damage, enrolling participants in a sun-protection program that incorporates media personalities endorsing paleness.\textsuperscript{23}

Love addiction: Therapeutic options discussed in an article included the use of self-help books, 12-Step organizations, and individual or couples therapy. Self-help books exist on gaining awareness and cognitive restructuring of love addiction-related disturbances. Again, motivational interviewing may help love addicts to understand maladaptive functions of love objects. Some interventions, like - signing up for community courses, participation in meditation or exercise, and making same sex non-sexual, non-romantic friendship have been suggested as helpful.\textsuperscript{24}

Conclusion
This article likes to summarize that management of behavioral addictions has a common set of treatment approach, with some differences according to their types. In general, a targeted, multimodal, biopsychosocial approach of treatment that includes individual, group, family or conjoint therapy; use of medication when necessary and adjunct treatments such as self-help groups, will be the most cohesive and effective. Among psychological intervention, Cognitive-Behavioral Therapy (CBT) is the most researched and evidence-based, so most advocated approach. No medications are currently approved. Effectiveness of all of the approaches is yet inconclusive and needed more and more controlled treatment studies and also long-term follow-up studies.

Despite several methodological limitations, this work gives a brief summarized format of the current state of evidence based treatment approaches from a practical perspective and can therefore be seen as an important and helpful paper for further research as well as for day to day clinical practice in particular.

References


