ORIGINAL ARTICLE

INCLUSION OF FLOW EXPERIENCE ACTIVITY IN TREATMENT PORTFOLIO FOR DEPRESSIVE SYMPTOMS - PRELIMINARY FINDINGS

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ABSTRACT

OBJECTIVE
Flow experience is an intensely engrossing, pleasurable mental experience that comes from being completely absorbed in the activity the person is performing. The present study was conducted to develop flow experience, as a supplementary psychological treatment intervention and to examine its efficacy when added to the treatment portfolio for depressive symptoms.

STUDY DESIGN
A 2x2 longitudinal quasi experimental design was used to test the efficacy of flow experience as an intervention.

PLACE AND DURATION
The study was conducted in Karachi and Lahore from March 2018 to December 2019.

METHOD
Participants were recruited in the research on the basis of volunteer sampling from mental health set ups of Karachi and Lahore. Twenty-four (24) individuals meeting the sampling criteria consented and completed the research participation. Flow experience intervention was added in two treatment as usual (TAU) groups: TAU 1 where treatment as usual was psychiatric medication and TAU2 where treatment as usual was psychiatric medication and psychotherapy.

RESULT
Result shows a significant decline ($t=12.12$, $df = 4$, $p<.05$) in depressive symptoms when flow experience activity was added in TAU2 for a duration of four weeks.

CONCLUSION
The preliminary finding showed flow experience is a promising supplementary intervention for depressive symptoms when used in addition to psychiatric medication and psychotherapy. A more generalisable application of intervention is recommended.

KEYWORDS
Depression; Flow Experience; Positive Psychology; Psychosocial Intervention; Psychotherapy.

INTRODUCTION
Flow experience is an intense and pleasurable mental state in which an individual is completely immersed in the task or activity the individual is performing. The concept of flow has its origin in the 1960s in the work of Csikszentmihalyi, who was enthralled that creative people when engaged in their work persist single mindedly losing track of time and surroundings and completely lose interest when the project ends. This led to the research to understand the phenomenon of intrinsic motivation. It was first called autotelic experience or optimal experience and finally flow.[1] Flow occurs when the task is within one's ability to perform and it has clearly established rules for action like rituals, games or performing arts.[2] The experience of flow requires three preconditions:

1. Clear goals that give direction and purpose for the action or behaviour
2. Immediate feedback about the progress being made in the activity. Negative feedback is not likely to affect the enjoyment in the activity.
3. Perceived challenges or opportunities for action that match the skill level.[3,4]

It has been observed that during flow experience, there is a relative increase in neural activity in the left anterior inferior frontal gyrus and the left putamen and decreased activity in the medial prefrontal cortex and the amygdala. These neural changes reflect characteristic features of flow: increased outcome probability, enhanced sense of cognitive control, decreased self-referential processing, and decreased negative arousal.[5] Past research on the concept of flow has focused in the domains of work,[6-8] organisational citizenship,[9] leadership,[10] sports,[11] physical environment,[12] place and social identity,[13] online shopping,[14,15] gaming.[16-18]

Research and literature on the application of flow experience in clinical settings is not widely available. Clinical settings pose a relatively challenging context for creating flow experience or using it as a therapeutic intervention. Flow experience in medical treatment interventions has been explored.[19] The goal of such research is usually to improve the experience of a patient with treatment. If patients experience flow in treatment, they may be more likely to adhere to the treatment plan and recover. Flow experience in attentional training of patients with traumatic brain injury is reported to have improved cognitive functioning.[20] Riva et al[21] reported similar investigations. They summarised three lines of research in Italy. The goal of the first line of research was the association between flow experience and rehabilitation activities to promote treatment adherence, development of skills and

assimilation into community. Second line of research suggested developing a model of psychotherapy intervention. The third line of research proposed a model of psychotherapeutic treatment with the psychodynamic approach integrating positive psychology based practices and concepts.

Although Flow experience is still a scarcely researched area in positive clinical psychology, earlier reported attempts at incorporating flow experience in psychological treatment have been conducted by introducing flow experience with cognitive behaviour therapy. One of the earliest accounts of incorporating flow experience in therapy comes from a case reported by Fave and Massimimi.[22] An experience sampling method was used to get information about the activities that brought flow experience for the agoraphobic patient in her day-to-day life.Patient was encouraged to re-adopt activities that had brought flow experience in the past. Over a year into therapy using behavioural techniques and monitoring flow experience, there was an improvement in that patient's condition. Flow experience has been found associated with affective changes.[22,24] However, there has not been any attempt to formally develop flow experience into a therapeutic intervention based on evidence.

Objective of the study

The main objective of this study was to develop flow experience as an intervention. In addition, the efficacy of flow experience based intervention when added to different treatments was assessed.

Rationale of the study

This research purposed to include flow experience in the treatment portfolio for alleviating depressive symptoms. Interventions based on positive psychology have been developed and used successfully in treatment plans for depressive symptoms.[25] It is worth noting that interventions based on positive psychology are introduced after the patient has stabilised to some extent. The reason being patient needs some amount of energy to carry the activities prescribed as intervention. Application of flow experience is likely to add to the repertoire of interventions based on findings of positive psychology.

This research introduced flow experience in mild to moderately depressed individuals for a duration of 4 weeks. The effectiveness of flow as an intervention for depressive symptomswas gauged by comparing pretest and post-test scores on Centre for Epidemiologic Studies Depression Scales-Revised (CESD-R). It was anticipated if activities bringing flow experience into the life of individuals having depressive symptoms are appropriately identified and experienced, the symptoms are likely to improve. A complete treatment for mental health issues requires medication as per need and therapy to boost management and coping skills. Problematic thoughts and behaviours need to be identified and addressed for complete recovery and relapse prevention. Since flow experience is a condition that distracts individuals from surroundings during the activity, it is likely to be less effective if used without any conventional psychotherapy.

Based on the above premise following hypothesis was formulated:

* The inclusion of flow experience activity in a treatment portfolio will lead to a significant reduction of depressive symptoms after four weeks.

METHOD

Sample

The sample comprised 24 patients diagnosed and being treated for mild to moderate depression. Ages of the participants ranged from 17 to 60 years (Mean=32, SD=10.34). Education level of participants ranged from 3 to 16 years (Mean= 10, SD=3.20) of education. Participants were recruited from March 2018 to December 2019 from private and government hospitals of Karachi and Lahore, Pakistan.

The inclusion criteria were: a) individuals assessed by qualified mental health professionals for having mild to moderate depression; b)Individuals under psychiatric treatment in OPD for depression for at least one month; c) Individuals able to communicate in Urdu or English; d) Individuals having basic literacy skills; e) Individuals aged between 16 to 60 years of age; f) Individuals who consented to remain involved in the research project for one month.

The exclusion criteria were: a) Individuals with gender specific depressive illness like post-partum depression or premenstrual dysphoric disorder; b) Individuals diagnosed with any kind of terminal illness; c) Individuals hospitalised for depression; d) Individuals who attempted suicide during current span of illness; e) Individuals having some kind of comorbid psychiatric illness.

Instruments

All the instruments and informed consent form were presented in a bilingual format in English and Urdu languages

Demographic sheet

Personal details about the participants like age, gender, education, marital status, occupation, details about previous and current treatment were sought through demographic sheet.

Center for Epidemiologic Studies Depression Scale Revised (CESD-R)

Center for Epidemiologic Studies Depression Scale Revised (CESD-R) is a freely available atheoretical scale that is based on DSM-5 criteria for depression.[26] It comprises 20 items. CESD-R has 5 response categories, ranging from 0=Not at all or less than 1 day to 4= nearly every day for two weeks. Cronbach's α reliability of the scale is reported as 0.928. Cronbach's α reliability of the Urdu version was 0.88.

Flow Activity Identification Questionnaire (FAIQ)

Questionnaires in Urdu and English were constructed to identify the flow experience activity for the current study. Owen Schaffer reviewed and made recommendations on the initial drafts of the English version of the questionnaire. Owen Schaffer had experience of being supervised by Prof. Mihaly Csikszentmihalyi in his Masters in Positive Organisational Psychology and Evaluation at Claremont University. At the time of review, he was a PhD scholar at DePaul University. He is author of the Flow Condition Questionnaire and his PhD study was about flow and enjoyment of games. Final English version of the questionnaire was reviewed by Csikszentmihalyi, who is the author of the concept himself. As there were no experts of Flow experience in Pakistan at the time of study, the Urdu questionnaire was finalised using a committee approach using the feedback provided by experts on English version.

Both questionnaires comprise 12 items. Each item has 5 response categories, ranging from 1= Never to 5= Always. Cronbach's α is .80 and .81 for the English and Urdu versions, respectively. Both English and Urdu versions were validated for content and language in the local population.

Procedure

This study was conducted at multiple sites. The approval for conducting this research was granted by the Board of Advance Studies and Research, University of Karachi, Pakistan.

To recruit sample mental health facilities in three cities of Pakistan, namely Karachi, Lahore and Peshawar, were approached and permissions for data collection were acquired from respective departmental heads and research committees. Mental health practitioners (Psychiatrists, Psychologists and Social Workers) working in the mental health facilities were requested to facilitate contact with patients in their OPDs who meet the research sample criteria. Sample criteria were provided to the mental health practitioners in written form on a daily basis. Patients consenting to research participation were included in the research. Random assignment was not carried out due to ethical considerations.

The participants were given signed participant data sheet with information about the study and professional contact details of the researchers to be used, if they felt the need for further facilitation regarding intervention or their treatment choices. All the queries of the participants and accompanying care givers regarding the research were answered. A time and day was scheduled according to the convenience of the participant for the completion of the questionnaire. All participants provided written informed consent and were free to terminate participation in the research at any point. Caregivers of the participants were involved in the decision to consent. Verbal assent was obtained from the parent accompanying participants under the ageof 18 for inclusion of the participant in the research.

Participants were recruited from two treatment as usual (TAU) groups, i.e. TAU1, where treatment as usual was psychiatric medicines only and TAU 2 where treatment as usual comprised psychiatric medicines and psychotherapy. Participants opting to participate in the intervention committed to spend at least 90 minutes per week in the flow experience activity that was individually identified. All participants were contacted on a weekly basis on phone or SMS, as per their preference. Participants in the intervention groups were requested to provide feedback about their participation in the activity, whereas participants in treatment as usual groups provided feedback about their adherence to treatment routine. Participants completed follow-up questionnaires after one month. An incentive to enter draw for PKR5000 were offered to participants who completed participation. It was awarded to one participant. All data was anonymised and was analysed using IBM SPSS version. [20]

Intervention Details

Step 1: Participants completed the Flow Activity Identification Questionnaire (FAIQ) developed specifically for this research. Completion of the questionnaire resulted in identification of a specific activity for each participant that was found to bring flow experience for them in the past. Identified activities varied for each participant. Some examples of identified activities were: Playing Cricket, Reading Books, Painting, Stitching, Gardening, Analysing International Relations, Developing business plans, Doing research, and Gaming.

Step 2: Participants were encouraged to come up with four goals related to their "identified activity". They had to complete those goals on a weekly basis. Goals varied for each individual according to their personal choice and expertise level. For example, 4 goals for the activity "developing business" could be 1. Identifying target market areas, 2. Identifying organisations to approach, 3. Arranging contact information of the key persons in the organisations, 4. Scheduling meetings with the key persons.

Step 3: Goals were arranged in increasing order of difficulty with the most difficult task scheduled for the last week.

Example: A participant who had identified playing cricket as a flow generating activity came up with the following weekly goals.

Goal 1 for week 1: Making a plan to play cricket. Plan will include how the players will be accessed. How the place and other things will be arranged.

Goal 2 for week 2: Team Building. Approaching people in the vicinity with the invitation to make teams to play cricket.

Goal 3 for week 3: Arranging a trial match for their own team
Goal 4 for week 4: Having a match with another team in the area

Step 4: Participants were asked to come up with a day of the coming week when they would start working on their goal 1 of the first week. They were instructed to spend at least 90 minutes to complete the goal each week. Goals were adjusted during the intervention. If a predetermined goal was accomplished in a lesser time, the participant started the next goal on the list. If the goal took more time than anticipated, time than the goal was continued next week instead of moving on to the next goal.

Step 5: Consent was taken from the participants to be contacted via phone call or SMS to inquire about the weekly goal completion. Researcher contacted the participants weekly through their preferred mode of communication. Through the first call/SMS, the participants were reminded about the initiation of intervention and their first goal. During subsequent weekly contacts, an update was obtained about the completion of the previous week's goal and the next goal on their specific list was reminded.

RESULTS

Table 1
Demographics of Study Sample (N=24).

		f	%
Age	15-20	2	8.3
	21-25	6	25
	26-30	2	8.3
	31-35	7	29.2
	36-40	3	12.6
	41-45	0	0
	46-50	2	8.3
	51-55	0	0
	56-60	2	8.3
Gender	Male	10	41.7
	Female	14	58.3
Education	1-5	3	12.6
	6-10	13	54.2
	11-15	6	25.0
	16-20	2	8.3
Marital Status	Married	16	66.7
	Unmarried	8	33.3
Profession	Business/Self employed	5	20.8
	Home maker	8	33.3
	Skilled Laborer	4	16.7
	Student	2	8.3
	Unemployed	3	12.5
	Teacher	2	8.3
Duration of current treatment in months	1-6	17	70.9
	7-12	4	16.7
	13-18	0	0
	19-24	1	4.2
	25-30	0	0
	31-36	1	4.2
	Above 37	1	4.2

Table 2 shows a significant (t= 12.12, df =4, p<.05) decrease in depressive symptoms after a gap of 4 weeks in the experimental condition, where individuals with depressive symptoms were getting exposed to medication, psychotherapy and flow experience. There was a non-significant (p>.05) difference between pretest and posttest score in other experimental conditions.

Table 2
Paired Sample t test for Depressive Symptoms before and after the Flow Experience Intervention across experimental conditions (N=24).

Cond	n	Pretest		Post test				95% CI		Cohen's d
		M	SD	M	SD	t(df)	p	LL	UL	
TAU 1	9	29.44	7.65	21.33	15.86	1.85(8)	.101	-1.98	18.20	0.61
TAU2	5	28.40	8.11	21.40	15.96	1.68(4)	.168	-4.55	18.55	0.75
TAU1+F	5	26.40	5.13	23	13.27	.591(4)	.586	-12.56	19.36	0.26
TAU2+F	5	25.60	6.80	7	9.75	12.12(4)	.000*	14.33	22.86	5.41

Note: Cond=Conditions, M=Mean, SD= Standard Deviation, CI=Confidence Interval, *p<.001, TAU= treatment as usual, TAU1=Medication, TAU2= Medication and Psychotherapy, F= Flow

DISCUSSION

The aim of this study was to devise flow experience as an intervention and test its efficacy as a supplementary treatment intervention for depressive symptoms. Questionnaires in English and Urdu were specifically developed for this research to identify the individual flow experience inducing activities in single sitting. These questionnaires made it possible to transform flow experience into a testable, replicable treatment intervention. Previously, the method being used for identifying flow experience was experience sampling method.[22,27] Experience sampling method has its importance in identifying the activities that boost flow experience, but it is quite a laborious process with multiple observations spread over days. Questionnaires created for this research made it possible to reduce this time. An initial plan for using flow experience activity as intervention was developed and tested.

Result shows there was significant decline in depressive symptoms over the period of 4 weeks when flow experience was introduced in the treatment as usual group where treatment as usual was medication with psychotherapy. Cohen's d showed a large effect size.[28] Although there was a decline in depressive symptoms in other experimental conditions as well but the difference was not significant. No previous research is available that explores flow experience as intervention for depressive symptoms but support for this finding comes from previous research reporting association of flow experience with positive mood changes.[29] Nolan[24] reported strong correlation between flow experience and mood. The underlying assumption proved in research carried by Futterman Collier etal[30] is that flow experience enhances mood, reduces rumination and improves overall wellbeing. Holt reported fluctuations in mood over time when participants were made to practice activity that was high on flow experience but flow experienced was found associated with well-being.[31]

Our research shows non-significant change in depressive symptoms where flow was added in TAU1, which was medication only. This finding points to the importance of psychotherapy for depressive illness. Medication can alleviate physiological symptoms but relapse preventions requires a look into the social triggers of depression present in the patient's environment. This also might be the case for the experimental condition TAU1 where participants had chosen

to take psychiatric medication only. There was non-significant change in the TAU2 condition as well where research participants were taking psychiatric medication and psychotherapy. The reason for this could be that the duration of research was just four weeks. Four weeks is a small duration to gauge effects of psychotherapy. Psychotherapeutic treatment has its highs and lows. It requires the patient to make changes in life that can be quite challenging.

Adding flow experience activity in TAU2 was highly effective because it provided a much needed pleasurable distractor during the time when patients were struggling with their improvement. All participants who participated in flow experience intervention groups informed researchers that they felt happy that they could restart a pleasurable activity that they had left due to depression. When patients planned to start participation in intervention, they were not sure that they will be able to carry it for four weeks. When they started participation, they were intrinsically motivated to carry out the participation week after week. At the end of the research, they had plans to continue.

Use of flow experience as a therapeutic intervention requires caution. Decision to include it in treatment portfolio requires careful consideration. Social triggers of illness need to be addressed through therapy. Previous research reports the use of immersive gaming that induces flow to escape woes and is associated with depression. There may be chances of depressive symptoms to prolong if flow experience activity is not supplemented by psychotherapy.[32]

CONCLUSION

A clear procedure of how to identify individual flow experience activity and use it for depressive symptoms was developed and outlined. It was concluded that flow experience significantly alleviates depressive symptoms when added to treatment having medication and psychotherapy. It is essentially a distractor technique and was found helpful for patients experiencing depressive symptoms.

Limitations

This research was carried out on a very small number of participants without random assignment to the treatment conditions. Small number of participants in each experimental condition made it difficult to carry more sensitive data analysis. Future research may be carried out on a larger sample that makes it possible to assign participants to treatment as usual and waiting list control conditions. A larger sample will also permit use of statistical procedures that allow comparison of changes in groups over time. The participants were assessed pretest-posttest only. Future research may test the efficacy of flow experience as intervention over a longer duration of time using multiple research observations. Due to scarcity of volunteer participants, traumatic life events were not controlled in this research. Traumatic life events like losing a loved one pose a temporary threat to the mental health of an individual but can influence the research findings.

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2.	Dr. Amena Zehra Ali	Associate Professor Department of Psychology University of Karachi	Supervised the research designing and Data Analysis Reviewed Manuscript	