



Understanding Anhedonia

With the development of brain chemistry, we now hear more often the word “anhedonia”. What is anhedonia? Psychiatrists define anhedonia as the inability to experience pleasure, to enjoy life. This term appeared in the mid 20th century as one of the major characteristics of schizophrenia.

In fact, anhedonia is a core clinical symptom for various mental disorders including schizophrenia, major depressive disorder, bipolar disorder, and substance abusers. It has been thought to be an important predictor of functional outcome and disease liability. Traditionally, anhedonia was defined as a reduced ability to experience joyful events or an intention to approach rewards. However, recent advances in clinical and affective neuroscience suggested that such a traditional conceptualization of anhedonia as a sole diminished capacity for pleasure may not sufficiently characterize the affective abnormalities that occur in these mental disorders, especially schizophrenia. The beliefs about pleasure may have an important role in articulating the internal experience of pleasure to external observable behavioral deficits of anhedonia, e.g., beliefs that engaging in social interaction is not pleasurable may finally lead one not to take part in any social activities

generally. However, there is no available measure for us to capture this kind of belief about pleasure in both clinical and general populations.

To bridge such a gap of knowledge, Dr. Raymond CHAN from the Neuropsychology and Applied Cognitive Neuroscience Laboratory, CAS Key Laboratory of Mental Health, Institute of Psychology, and the Department of Psychology, the University of Chinese Academy of Sciences, has collaborated with his international colleagues to conduct a series of studies to specifically examine low-belief about pleasure in both clinical and non-clinical samples. In the first study, they developed the Belief About Pleasure Scale (BAPS) and validated it a group of 373 college students. Findings from exploratory factor analysis showed the BAPS items loaded onto four factors, namely the “Devaluation of Pleasure”, the “Pleasurable Activity Expectancies”, the “Negative outcomes Expectancies”, and the “Attention to Pleasure”. These factor scores demonstrated good internal consistency and test-retest reliability at a six-week interval. Moreover, the BAPS also correlated significantly with measure capturing experiential pleasure.

In the second study, they administered the BAPS to a group of 838 patients with schizophrenia and 349



Table 2
Factor loadings from the pattern matrix of the BAPS items (N = 373).

Items	Factors			
	I	II	III	IV
12. It is not important at all to make myself happy.	0.826	-0.103	0.014	-0.003
14. I should not waste money on making myself happy.	0.741	-0.102	-0.044	0.178
8. Pleasure is not a necessity for living.	0.580	0.112	-0.027	-0.020
5. Leading a happy life makes no sense.	0.556	0.303	-0.082	-0.063
21. I don't deserve to be happy.	0.554	0.201	0.101	-0.201
2. Immersing myself in happiness is a waste of time.	0.527	0.010	0.192	0.086
19. No matter what I do, I will not feel happy.	0.075	0.851	-0.021	-0.213
17. Happy things will never happen on me.	-0.029	0.731	0.133	-0.049
3. Pleasant things won't bring any change to my life.	0.030	0.620	-0.040	0.135
18. Even if I felt happy, it would not be from the heart.	0.116	0.607	0.011	0.021
4. Pleasant things are often of little value.	0.136	0.593	-0.153	0.144
22. It takes too much energy to cheer myself up.	-0.115	0.546	0.194	0.127
9. Bad things would happen once I feel happy.	0.076	-0.104	0.890	-0.036
10. "Extreme joy begets sorrow" is something that often happens on me.	-0.033	-0.045	0.834	-0.007
11. Things will get worse, no matter how good it is in the beginning.	0.048	0.081	0.722	-0.005
20. I always screw up things that are supposed to feel good.	-0.101	0.171	0.518	0.127
7. Even if I felt happy someday, that would only be accidental and unlikely to happen again next time.	0.067	0.256	0.395	0.142
15. There are many things that are worth more of my concern than just being happy.	-0.168	-0.017	0.042	0.820
13. I should pay attention to things that are more important than my own happiness.	0.012	0.122	-0.089	0.801
1. I should not take my own happiness too seriously.	0.116	0.024	-0.104	0.648
6. No matter how pleasant things might be, one should still focus on those that need to be improved.	0.039	-0.207	0.155	0.524
16. I should not think about happy things all the time.	0.121	0.092	0.149	0.461

Notes: Factor I, Devaluation of Pleasure; II, Pleasurable Activity Expectancies; III, Negative Outcomes Expectancies; IV, Attention to Pleasure.

healthy controls. Confirmatory factor analysis suggested a bi-factor model similar to the four-factor solution in study 1 was replicated. The derived factor scores could discriminate patients with schizophrenia from healthy controls significantly. More importantly, the BAPS total score was correlated significantly with anhedonia subscale of clinical ratings conducted by psychiatrists.

Finally, they further examined whether such a low pleasure belief about pleasure would be demonstrated in individuals across the spectrum of the disorders. In so doing, they recruited 65 patients with first-episode schizophrenia, 65 individuals with social anhedonia, and 65 healthy controls to examine their belief about pleasure. The findings showed that there was a significant difference among the three groups in the BAPS total score and the four BAPS subscale scores. In particular, patients with first-onset schizophrenia reported significantly higher than controls on the BAPS. These patients also reported higher than the individuals with social anhedonia on the BAPS devaluation of pleasure subscale score. On the other hand, the individuals with social anhedonia reported significantly higher than healthy controls on the BAPS total score, and the subscale scores, except the attention to pleasure subscale.

Taken together, these findings provided preliminary evidence for the presence of low-pleasure beliefs in both clinical and subclinical groups and suggested

that the BAPS has promising initial psychometric properties. These findings highlight the important of the belief system withheld by patients with anhedonia such as schizophrenia, major depressive disorder, bipolar disorder and substance abusers. The BAPS may serve as a very useful tool to elucidate the efficacy of psychological interventions targeting anhedonia.

Dr. Raymond CHAN's team is now conducting a cross-cultural study to compare and contrast the reported belief about pleasure in healthy volunteers from different countries. Moreover, they are also examining the underlying neural correlates of such a low-belief about pleasure in both clinical and subclinical samples. They hope to provide a new direction for mental health assessment and intervention for people suffering anhedonia in the near future.

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