Supplementary Material

Switch, a new Intervention that targets Motivational Negative Symptoms in people with Schizophrenia: an uncontrolled Pilot Study

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1. Switch's model

Figure S1.

Switch's model (simplified version) that can be used by therapists and patients/clients.

The model on which the Switch intervention is based is described in detail in the Introduction of the article. Figure S1 presents a simplified and more practical version of that model, which can be used in the therapeutic context. Instead of showing the (neuro)cognitive, emotional and behavioural processes that are related to motivation and goal-directed behaviours (see Figure 1 in the article), this model provides a type of compass that guides the choice of strategy that can be used to tackle the various challenges found on the way to goal attainment. The strategies are briefly explained in the article. An extensive manual is available in French from the first author.

2. Supplementary results

2.1. Secondary outcomes

Measures

The results presented in Table S1 include secondary analyses on the motivation subscales (Anhedonia, Asociality and Avolition) of the Brief Negative Symptom Scale (BNSS; Kirkpatrick et al., 2011; French version: Mucci et al., 2019) , as well as on the positive subscale of the Brief Psychiatric Rating Scale (BPRS; Ventura et al., 1993; French version: Mouaffak et al., 2010), which were both rated based on interviews (for a description of these two scales, please refer to the main part of the article). Self-rating

scales were used to evaluate changes in functioning and life satisfaction, as well as in processes believed to be related with motivational deficits and goal-directed behaviours.

The Social Functioning Questionnaire (Questionnaire de Fonctionnement Social – QFS; Zanello, Weber Rouget, Gex-Fabry, Maercker, & Guimon, 2006) is a 16-item self-report questionnaire that evaluates social functioning during the two preceding weeks. Eight domains are addressed: activity (professional, educational, volunteering), household, leisure, family and couple relationships, other social relationships, financial and administrative management, general health, and society and information (e.g., checking the news). For each domain, two questions are asked, one that evaluates the frequency of the behaviours (e.g., "how often have you engaged in leisure activities?") and the other that evaluates the degree of satisfaction with each domain (e.g., "how satisfied have you been with your leisure activities?"). Each question is rated on a 5-point Likert scale ranging from 1 ("never" or "very unsatisfied") to 5 ("everyday" or "very satisfied"), where higher scores indicate better functioning. The QFS is very simply phrased and is easy to use. It was used in this protocol in order to have the participants' view on their functioning, whereas the Functional Remission for General Schizophrenia (FROGS; Llorca et al., 2009) was administered to informants.

The General Self-Efficacy scale (GSE; Schwarzer & Jerusalem, 1995; French translation: Dumont, Schwarzer, & Jerusalem, 2000) evaluates the extent to which participants view themselves as capable to achieve various behaviours (e.g., new or challenging tasks). The ten items of the GSE are rated on a 4-point Likert scale, ranging from "Totally false" to "Totally true". Thus, the higher the score, the higher the feeling of self-efficacy.

The Dysfunctional Attitude Scale (Weissman & Beck, 1978; French translation: Bouvard et al. 1994) is a 40-item self-rating scale that produces a total score representing cognitive distortions (assumptions and beliefs) in seven value systems: approval, love, achievement, perfectionism, entitlement, omnipotence and autonomy. Each item is rated on a 7-point Likert scale with higher scores indicating elevated dysfunctional beliefs.

The Savouring Beliefs inventory (Bryant, 2003; French version: Golay, Thonon, Nguyen, Fankhauser, & Favrod, 2018) is a 24-item self-rating measure designed to assess attitudes towards and tendency to savouring positive experiences, in the three temporal orientations, past, present and future (8 items each). Half of the items are positively-phrased (e.g., "I can feel joy of anticipation"), while the other half are negatively-phrased (e.g., "I don't like to look forward too much"). Participants indicate, on a 7-point Likert scale, the extent to which they agree with the different statements. For each subscale – past, present and future – the sum score of the negatively-phrased items was subtracted from the sum score of the positively-phrased items.

Results

Table S1

Clinical characteristics, functioning, and processes related to motivation, before the intervention (T0), at 6 months (T1), at the end of the intervention (T2), and 6 months after the intervention (T3). Paired sample t-tests and Cohen's d effect sizes.

	T0	T1	T2	T3	T0-T1		T0-T2		T0-T3	
	n = 8	*n* = 8	*n* = 7	*n* = 7	*t*	*d*	*t*	*d*	*t*	*d*
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*df* = 7		*df* = 6		*df* = 6	
BNSS Anhedonia	4.04 (0.55)	2.83 (1.15)	2.43 (1.29)	3.43 (0.99)	2.52**	**1.34** [1.06; 1.62]	4.10***	**1.62** [1.39; 1.84]	1.62	**0.76** [0.49; 1.02]
BNSS Asociality	2.69 (1.03)	2.13 (0.83)	2.79 (0.70)	2.43 (0.89)	1.20	**0.60** [0.34; 0.86]	0.179	0.08 [-0.18; 0.35]	0.89	**0.46** [0.17; 0.75]
BNSS Avolition	2.88 (0.69)	2.19 (1.03)	2.50 (1.38)	2.64 (0.99)	1.768	**0.78** [0.55; 1.01]	0.795	0.26 [0.07; 0.45]	0.55	0.17 [-0.01; 1.84]
BPRS - Positive	1.62 (0.70)	1.77 (.46)	1.43 (0.24)	1.53 (0.43)	-0.52	0.24 [0.00; 0.49]	1.20	**0.37** [0.13; 0.61]	0.59	0.16 [-0.11; 0.34]
LARS-p	-12.50 (7.73)	-17.88 (6.85)	-15.43 (7.25)	-15.57 (10.23)	2.07*	**0.74** [0.55; 0.92]	0.63	**0.39** [0.05; 0.73]	0.88	0.34 [0.13; 0.56]
QFS – Frequency	3.59 (0.35)	3.77 (0.45)	3.55 (0.57)	3.75 (0.45)	-0.86	**0.43** [0.17; 0.69]	0.16	0.09 [-0.21; 0.38]	-0.72	**0.39** [0.10; 0.69]

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QFS – Satisfaction	3.50 (0.42)	3.59 (0.50)	3.54 (0.65)	3.70 (0.62)	-0.45	0.20 [-0.03; 0.44]	-0.14	0.07 [-0.19; 0.33]	-0.77	**0.38** [0.11; 0.65]
GSE	2.69 (0.33)	2.75 (0.14)	2.80 (0.44)	2.86 (0.46)	-0.48	0.24 [-0.02; 0.51]	-0.60	0.29 [0.03; 0.56]	-0.77	**0.43** [0.13; 0.73]
DAS	3.74 (0.83)	3.28 (0.81)	3.25 (1.04)	3.30 (1.09)	1.10	**0.57** [0.30; 0.84]	1.14	**0.53** [0.28; 0.78]	0.81	**0.45** [0.15; 0.76]
SBI – Anticipation	0.25 (2.38)	1.25 (2.07)	0.64 (1.71)	0.75 (2.48)	-0.90	**0.45** [0.19; 0.71]	-0.35	0.19 [-0.10; 0.48]	-0.38	0.21 [-0.09; 0.50]
SBI – Present	-0.25 (2.11)	0.16 (1.28)	0.61 (3.03)	0.79 (3.16)	-0.47	0.23 [-0.03; 0.49]	-0.61	**0.33** [0.04;0.63]	-0.72	**0.39** [0.09; 0.69]
SBI – Past	2.66 (1.72)	1.37 (1.37)	1.64 (1.65)	2.04 (2.20)	1.65	0.82 [0.56; 1.09]	1.12	0.60 [0.31; 0.89]	0.59	0.32 [0.02; 0.61]

Sig. (2-tailed): * *p* < .10; ** *p* < .05; *** *p* < .001

Note: BNSS = Brief Negative Symptom Scale (mean); BPRS – Positive = Brief Psychiatric Rating Scale, Positive subscale (mean); LARS-p = patient version of the Lille Apathy Rating Scale (total score); QFS = Questionnaire de Fonctionnement Social (mean); GSE = General Self-Esteem (mean); DAS = Dysfunctional Attitude Scale (mean); SBI = Savouring Beliefs Inventory (sum score of the negatively-phrased items subtracted from the sum score of the positively-phrased items).

2.2. Qualitative data

At the end of the Switch intervention, participants reported that they used a number of different strategies that were included in Switch. Taken together, participants reported using all the strategies except for reminiscence and initiation strategies (post-its, alerts, implementation intention). The strategies that were reported to be most often used by participants were cognitive restructuring and planning one's goals.

Participants were asked an open-ended question about how they benefitted from Switch. Comments resulting from this question were grouped into the following themes:

Self-esteem and agency: "I have power over things", "I realize I have goals", "I am able to take action/to have an effect on my life", "I can actually manage my illness", "I have those qualities" (referring to an exercise that asked the participant to identify his/her strengths).

Cognitive restructuring: "The program allowed me to put things into perspective", "It opened my eyes for certain things".

Cognitive defusion: "I still have negative thoughts, discouraging ones, but I do not pay attention to them in the same way", "The craving dissipates", "The (unpleasant) emotions flow past", "I am more anchored in the present"

Positive focus: "Switch = forget the bad things and focus on the positive!", "The therapy was centred on the future more than on the past. That was good."

Therapeutic relationship: "You took the time to respond to my messages, not just with a standard message. Your response was personalised". "It was good to be taken as we are, without overly insisting when there are difficulties… without blaming".

Neurocognitive: "I can concentrate better", "I have a better memory".

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