FOR MENTAL HEALTH CLINICIANS

CLINICAL PRACTICE POINT

SUPPORTING COGNITION IN YOUTH MENTAL HEALTH

INTRODUCTION

Cognition refers to thinking skills including problem-solving, concentrating, judging, planning, remembering and reasoning, among others.

Social cognition refers to the perception, processing and interpretation of social information, including people's intentions, feelings and thoughts.

Mental ill-health can impact on a young person's cognition, and cognitive difficulties can impact on a young person's mental health. Cognition should be a focus of clinical care, particularly as difficulties in this area can directly influence a young person's recovery trajectory.

AIMS

This clinical practice resource is for anyone working in youth mental health to:

1. **understand the complex interplay between cognition, mental ill-health and functioning;**
2. **understand the rationale for clinicians to take an active role in cognition screening, assessment, psychoeducation, referral and treatment;**
3. **understand therapeutic support options to address cognitive impairments in young people; and**
4. **develop confidence incorporating cognitive strategies into daily therapeutic practice.**

COGNITIVE DEVELOPMENT AND YOUNG PEOPLE

During adolescence and young adulthood, the brain is going through multiple adaptions that are necessary to assist young people to learn new skills and meet expected developmental milestones. At the same time, adolescence is a time of increased vulnerability to mental ill-health.

Both mental ill-health and cognitive difficulties can disrupt social, emotional and functional development, with the potential effects continuing on into adulthood.[1] For this reason, it is important to integrate an understanding of cognition into your formulation when working with young people. This is especially important because during adolescence and early adulthood, the brain is able to adapt and change more readily than in later life stages, so early intervention strategies targeting cognitive difficulties are more likely to succeed.

HOW CAN UNDERSTANDING COGNITION HELP YOU IN YOUR CLINICAL ROLE?

You can use your understanding of cognition to:

- share information about cognition and mental health;
- normalise the young person's experiences;
- address misconceptions and myths – from young people and others – about cognitive difficulties;
- guide your formulation;
- identify appropriate interventions based on a young person's cognitive needs;
- collaborate with a young person on their goals around functioning and engagement; and
- consider therapeutic adaptions for language, environment, review of care, length and timing of sessions, and modality.

THE INTERPLAY BETWEEN COGNITION AND MENTAL HEALTH

Not all young people experiencing mental ill-health or neurodevelopmental disorders will have cognitive difficulties. However, mental ill-health and neurodevelopmental disorders, which are also likely to co-occur, are both associated with higher risk of experiencing cognitive difficulties in young people. Where present, these cognitive difficulties in turn significantly increase the risk of impaired symptomatic and functional recovery, leading to higher rates of disability.[2]

It's therefore important to understand both the impact that mental ill-health can have on cognition, and the impact that cognitive difficulties can have on a young person's recovery from mental ill-health.

The impact on cognition may:

- be minor or severe;
- be fleeting or long-lasting;
- resolve naturally;
- require simple adjustments;
- require compensation strategies that include utilising the person's strengths to compensate for areas of difficulty; or
- require intensive remediation strategies aimed at improving the brain's functioning.

HOW DO COGNITIVE DIFFICULTIES AFFECT YOUNG PEOPLE?

Cognitive difficulties in young people with mental ill-health may result in:

- limited coping strategies (due to limited cognitive flexibility);
- reduced adaptation and functioning in daily activities, education or employment;
- social difficulties, leading to feelings of isolation and frustration;
- reduced engagement in and responsiveness to psychosocial interventions (e.g. therapeutic services, supported employment and education, etc.);
- reduced medication adherence;
- reduced independence, leading to dependence on family members or others;
- tension in family relationships, particularly if the impact of cognitive difficulties is misunderstood or miscommunicated;
- reduced self-esteem and increased hopelessness (which may contribute further to mental ill-health); and
- persistent symptomatic illness, including ongoing difficulties with cognition even during symptom remission.

Cognitive difficulties can influence self-esteem and self-concept at a time when young people are exploring their identity. Misattribution of cognitive difficulties can result in beliefs that the self is damaged or unintelligent.[3]

IMPACT OF COGNITIVE DIFFICULTIES ON TREATMENT: AN EXAMPLE

ATTENDING A MENTAL HEALTH APPOINTMENT

To attend a mental health appointment, a young person must first be able to:

- pay attention;
- understand the information given to them;
- remember other activities and appointments they have planned;
- organise these so as to schedule them without a clash;
- plan how to get to the appointment, which may involve negotiating with family or school;
- remember the appointment (e.g. by writing it down, and checking the calendar on the day);
- motivate and organise themselves to get ready on the day;
- possibly navigate public transport;
- read and follow a map;
- make sure they get there on time.

Therefore, before the young person has even met their treating practitioner, they have needed many cognitive skills including attention, language processing, memory, organisation, visual and spatial skills, initiation, sequencing and planning. Even if they are determined and willing to engage in mental health treatment, if these skills are not working well, it will be hard to get to the appointment.[4]

This may be even more difficult if the young person is stressed, tired or sedated; if they are feeling over-stimulated or distracted; if they are learning a new skill; if the task is complex; or, if they are required to manage several tasks at once.

If they miss appointments as a result of these cognitive difficulties, they miss the treatments which support functional recovery. On top of this, poor performance in these everyday tasks may impact confidence and self-esteem, which can exacerbate mental ill-health.

Case study above adapted from: Medalia A, Revheim N. *Dealing with cognitive dysfunction associated with psychiatric disabilities: a handbook for families and friends of individuals with psychiatric disorders*. New York State Office of Mental Health; 2002.

WHAT ELSE IMPACTS ON COGNITION?

MEDICATION

There is mixed evidence on this topic, which may reflect the fact that medications effect people differently and can depend on dosage and polypharmacy. Most research demonstrates:

- Small positive or negligible effects of antipsychotic medications on objective cognitive functioning.[5] However, subjective experiences in this population are highly variable across cognitive impairment, emotional blunting, motivation and sense of self.[6]
- Antidepressants have a modest, positive effect on certain aspects of cognition for depressed people.[7]
- Sedatives, such as benzodiazepines, used over long periods can be the most cognitively impairing.[8]

This highlights the importance of checking with the young person their subjective perceptions of the effects of medication, which may influence medication adherence.[9]

SUBSTANCE USE

All substances are associated with changes in cognitive functioning. Longer-term effects on cognition are variable depending on the amount, type and number of substances used.

Alcohol is particularly harmful to the brain and cognition – especially if used in high amounts. Consequences in adolescents include alterations in attention, verbal learning, visuospatial processing and memory, along with altered development of grey and white matter volumes and disrupted white matter integrity.[10] Rodent studies suggest that the functional consequences of alcohol on adolescents may include decreased cognitive flexibility, behavioural inefficiencies and elevations in anxiety, disinhibition, impulsivity and risk-taking.[10]

Young people may use cannabis to manage their symptoms. Though this may not affect cognition in the long term, it is associated with poorer cognitive functioning in the present.[11]

Providing psychoeducation on these impacts may be helpful in your work with young people.

COGNITIVE IMPAIRMENT IN DIAGNOSTIC CATEGORIES

Increasingly, cognitive difficulty is recognised as a primary symptom of mental ill-health rather than simply an effect of it. All young people with mental ill-health are vulnerable to cognitive difficulties as a direct result of their mental ill-health.[4] Poorer cognition is associated with poorer functioning regardless of diagnosis, however there appears to be some evidence for specificity in the pattern and severity of cognitive impairment between diagnostic categories. See Table 1 – Cognitive impairment in diagnostic categories.

TABLE 1 - COGNITIVE IMPAIRMENT IN DIAGNOSTIC CATEGORIES

Table 1 shows the severity of cognitive symptoms and their progression.

Note that comorbidity is common, and the more presenting mental health difficulties, the more likely there are to be cognitive concerns.

DIAGNOSTIC CATEGORY	SEVERITY	PROGRESSION PRIOR	AFTER ONSET
Psychotic disorders	**Severe impairments:** • Moderate to severe and widespread impairment at all illness stages • 75% of people with psychotic disorders have their cognitive functioning impacted.[12,13]	Both cognitive lag and progressive decline occur between premorbid and first episode of psychosis (FEP).	Deficits are relatively stable over the first 5–10 years.
Major depression	**Mild to moderate impairments:** • mild to moderate impairments • less widespread.	Impairment can occur prior to onset.	Further progression of impairment evident during or shortly after onset. Some aspects of impairment may be state-related.[12]
Bipolar disorder	**Moderate impairments:** • widespread impairments • increasingly recognised as core illness feature[12] • up to 60% of people have their cognitive functioning impacted.[12]	Evidence is not clear.	Impairment occurs during or after the onset of full-threshold bipolar illness, with current evidence suggesting a stable trajectory.[12]
Anxiety disorders - obsessive compulsive disorder (OCD) and post-traumatic stress disorder (PTSD)	**Moderate impairments** • Selective impairments may be evident (e.g. reduced mental flexibility in OCD, and impaired attention, memory and executive function in PTSD).	Evidence is not clear.	Cognitive impairment can be a persistent feature of full threshold.

DIAGNOSTIC CATEGORY	SEVERITY	PROGRESSION PRIOR	AFTER ONSET
Eating disorders (ED) - anorexia nervosa (AN), bulimia nervosa (BN)	• Cognitive decline is associated with starvation. • Significant deficits in executive functions, such as set-shifting (the ability to move back and forward between different tasks), central coherence and decision-making. • AN often associated with a rigid thinking style.[14]	No research in groups at-risk of ED.	More research is required regarding stability and progression of impairments.
Personality disorders (PD)	There is limited evidence for cognitive impairment being a feature of all PDs, and it may be difficult to establish whether it is associated with the diagnosis or other factors such as trauma, alcohol use, low education.	Limited evidence.	Limited evidence.

SUPPORTING COGNITION IN PRACTICE

This section will cover the ways you can respond to young people with cognitive difficulties in your practice.

SCREENING

All young people presenting for mental health assessment and treatment should be screened for cognitive difficulties, irrespective of age or diagnosis. Screening can be via a formal tool, or it can be simply asking the young person general questions about changes in their cognition and performance in tasks. It's helpful to frame questions in a functional context – such as 'Can you watch a full movie?' rather than 'How is your concentration?' – in order to elicit the required information.

If you don't feel confident, the use of a structured screener may be helpful. You can refer to the **cognition screening toolkit**, which outlines questions you can ask.

Screening for cognitive difficulties best practice involves:

- corroborating information (for example, from a parent or teacher whenever possible);
- considering the young person's performance over time to ensure performance is not influenced by the young person's state (e.g. sleep deprived, anxious or substance-affected), influenced by environmental factors (e.g. distraction) or compromised by the task at hand, as the young person's capacity may vary between different tasks; and
- considering other factors that may influence performance, such as proficiency in English.

If you suspect some impairment following initial screening, further screening may be helpful. The following cognitive screening tools take 15–20 minutes to administer and will detect cognitive impairment:

- **Neuropsychiatry Unit Cognitive Screening Tool (NUCOG)** – refer to the **NUCOG in practice video** which demonstrates how to complete this assessment. This does not require any formal training. Please note, this assessment is only appropriate for 18+ age group.
- **The Montreal Cognitive Assessment (MoCA)** – also only appropriate for 18+ age group.

For more detailed information and to help you decide which tool to use, please see **Practical strategies for coping with cognitive difficulties module**.

Note that while the mini-mental state examination (MMSE) is routinely used in (older) adult populations, it is not considered a useful screening tool to use with young people.

There are no evidence-based screening tools for adolescents under 18 years with mental health difficulties – this is an area of ongoing research. Consultation with a neuropsychologist is recommended for this population.

FOLLOW-UP OPTIONS

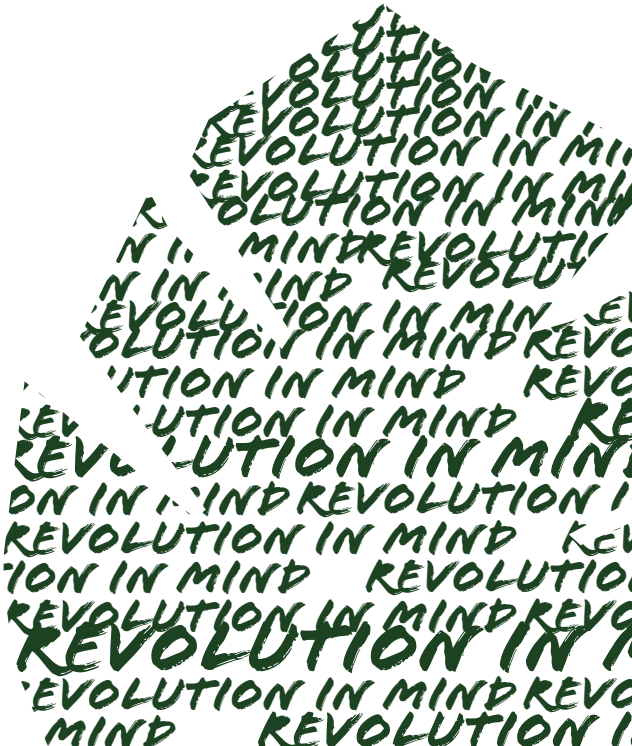
If cognitive impairment is present, follow-up options include:

- interventions to be included in routine therapeutic care (see 'Treatment' section below), including discussing any concerns in clinical team review or in supervision;
- secondary consult with a clinical neuropsychologist;
- psychosocial supports to include participation in groups (for support with social skills), referral for vocational support (for goals around employment) and increased support from school or university; and
- formal cognitive or neuropsychological assessment.

ASSESSMENT

A cognitive assessment may be undertaken by:

- an occupational therapist (OT), where assessment includes functional cognition (used to perform everyday activities);
- a clinical, educational, or developmental psychologist; or
- a clinical neuropsychologist, who can make recommendations specific to cognition (inclusive of functional recovery).



WHAT IS CLINICAL NEUROPSYCHOLOGY?

A clinical neuropsychologist is a psychologist with expertise in understanding, assessing and treating cognitive, emotional and behavioural symptoms in brain-based conditions. They use objective neuropsychological tests, systematic behavioural observation and clinical interviews. They might assess a range of cognitive domains or a specific domain (e.g. memory), depending on the presenting difficulties. They can then make recommendations related to cognition, mental health and functioning.

HOW DO I ACCESS A NEUROPSYCHOLOGIST?

A neuropsychologist may be available via NDIS, or accessed privately. Young people may also be able to access assessments through their school/educational department. In Australia, some headspace centres now employ a neuropsychologist.

Access to a neuropsychologist is not always possible. Barriers such as cost (if seeing privately), waiting times (if accessing through the public system) and even finding an appropriate neuropsychologist in the young person's area can prevent access.

YOUR ROLE Because access to neuropsychologists may be limited, it is important that you place an early focus on psychoeducation and compensatory strategies (see 'Treatment' section below) in your work with young people. These are the most immediate and achievable treatment options to address cognitive difficulties and promote functional recovery in young people.

TREATMENT

Addressing the impacts of cognitive impairment should be a standard aspect of practice in therapeutic care. Below are some options for you to integrate into treatment plans.

PSYCHOEDUCATION

Provide information to young people and families that:

- introduces and normalises the role that mental health has in cognition, and the effects of cognition on a person's functioning (and goals);
- normalises practical (compensatory) approaches as universal, irrespective of mental ill-health, and are not indications of failure or ineptitude;
- relates what has been observed by others and reported by the young person in a collaborative discussion around cognition;
- promotes lifestyle factors which can improve cognitive health (see 'Lifestyle factors' below);
- normalises the recovery trajectory and provides options for support; and
- considers the role of language - ensuring that it remains hope driven, capacity- and strengths-based, relates to a young person's goals, and is easily understood or relatable.

LIFESTYLE FACTORS

Exercise, good diet and sleep hygiene all support cognitive functioning.[9]

COGNITIVE REMEDIATION AND COGNITIVE COMPENSATION

These are the two main evidence-based approaches to address cognitive impairment in mental ill-health:

1. Cognitive compensation focuses on improving daily functioning using aids and strategies to target functioning directly, and minimise the impact of cognitive difficulties.[15]
2. Cognitive remediation is a behavioural training intervention targeting cognitive deficit (attention, memory, executive function, social cognition, or metacognition), using scientific principles of learning, with the ultimate goal of improving functional outcomes.[16]

You can refer to Orygen's **Cognitive compensation and cognitive remediation fact sheet** for more information.

MODIFYING YOUR CLINICAL APPROACH TO SUPPORT A YOUNG PERSON WITH COGNITIVE IMPAIRMENT

PRE-SESSION

- Prior to starting therapeutic interventions, spend some time focusing on supporting a young person to independently attend appointments.

IN SESSION

- Review discussions or content from last session.
- Early on, focus on the most achievable goals so as to raise motivation and hope for more challenging goals.
- Make sure that functional goals are being considered.
- Break therapeutic goals down into smaller sub-goals, and review them more regularly.
- Use pocket cards with a key goal or theme to remember.
- Enquire about and normalise the impact of cognitive difficulties on how the young person might be feeling.
- Adapt your language and approach to engagement (e.g. break large amounts of information down into shorter more manageable pieces, vet vocabulary, etc.)
- Check in more often to ensure that the young person understands the concepts that have been discussed.
- Adapt the length of sessions (e.g. 60 minutes might be too much).
- Allow extra (latent) time for the young person to process information and make decisions.
- Consider the time of appointments (e.g. the young person might concentrate better in the afternoons). Help them to use this information when they are planning other activities outside of appointments.
- Adapt the therapeutic interventions (e.g. behavioural approach rather than cognitively heavy) and expectations for homework between sessions.
- Establish routines (e.g. the same time for appointments; the same structure to sessions; structure in breaks).
- Facilitate planning.
- Facilitate practicing.
- Celebrate wins.

POST-SESSION/BETWEEN SESSIONS

- Use prompts to remind the young person about tasks they are to follow-up on between appointments.
- Advocate to family members, schools and workplaces (with consent) around the impact on cognition, with recommendations or support for adaptions.

TABLE 2: COMPENSATORY STRATEGIES TO HELP YOUNG PEOPLE WITH COGNITIVE IMPAIRMENT - SPECIFIC AREAS OF DIFFICULTY

Table 2 provides some examples of compensatory strategies by area of difficulty.

AREA OF DIFFICULTY	POSSIBLE INTERVENTION
Attention/ concentration	Self-management strategies: • self-instruction or self-verbalisation of task steps to keep on track; • schedule rest breaks in line with attentional threshold; and • focus on one task at a time. Environmental supports or modifications: • remove or reduce distractions in environment (e.g. turn tv or music off when visitors arrive or when studying, adjust the lighting); and • prompts, cues or alerts (e.g. labels, checklists or alarms such as vibrating watch/ reminder on phone).
Processing speed (i.e. slowness)	Find a more efficient way of doing the task: • some tasks can be broken down into steps repeated multiple times. • short-cuts can sometimes be found that don't compromise quality of output; and • over-learn task via repeated practice so it becomes more automatic (i.e. faster). Environmental supports or modifications: • deliver less information (i.e. one instruction at a time); • deliver information more slowly; and • consider special consideration for a student (e.g. more time in exams).
Learning/ memory	External memory aids ('second brain'): • write information down (notepad and pen in pocket or by the phone, take photos on phone); • make 'to-do' lists and tick off tasks when complete; • training in use of a diary, organiser, calendar or mobile phone; • voice recorder; • camera; and • phone apps (e.g. Woolworths app, train timetables). Environmental supports or modifications: • signs and labels; • checklists; • alarms; • Dosette box; • environment organised to provide reminder (e.g. tablets next to toothbrush); and • everything has its place ('memory spot'). Mnemonic strategies (internal memory aids): • repetition; • paraphrasing (ask young person to repeat back what was said in their own words); • association (e.g. when learning someone's name); • visual imagery (e.g. when remembering a shopping list); • chunking or categorising (e.g. when remembering a phone number); • repetition and spaced retrieval, expanded rehearsal (e.g. for studying); and • over-learn task so it becomes automatic. Mode of delivery may help: • verbal or visual information (based on person's cognitive strengths or learning style).

AREA OF DIFFICULTY	POSSIBLE INTERVENTION
Executive dysfunction (e.g. poor planning, problem-solving, organisation, concrete thinking)	Strategies include: • routine (make things predictable); • daily use of calendar, diary or organiser; • to-do lists or checklists; • everything has its place ('memory spot'); • develop 'rules of thumb' to prevent problems or respond to common problems (e.g. not putting notes in register until change has been given to avoid being accused of giving wrong change); • learn how to recognise and get help when problems arise (troubleshooting); • recognise signs something is wrong; • identify trusted 'problem solver' or 'helper'; • skills training to practice asking for help; • break complex tasks down into smaller manageable steps; and • practice 'stop, think, do' for impulsivity.

INTEGRATING OTHER INTERVENTIONS WITH COGNITIVE GOALS

Like any treatment plan, integrate other relevant interventions. Some key areas relating to cognition include:

- Liaison with schools or tertiary institutions, which can play a crucial role in adapting the environment or tasks to support young people with their functioning. It may also be important to address common myths and misconceptions about cognition.
- Vocational supports – cognitive impairment predicts poorer employment outcomes.[17] For example, it is estimated that 40% of young people with FEP are unemployed, with that figure climbing to 70% in those with a chronic psychotic illness.[17] Early intervention in this domain has the potential to minimise adverse effects on their long-term employment trajectory. Early functional recovery, such as returning to work, is a more important predictor of long-term health and functioning than early symptomatic recovery.
- Additional psychosocial supports, such as group programs or occupational therapy.
- Medication - check the young person's subjective perceptions of the effects of medication, and whether this may be affecting medication adherence. You can support the young person with practical strategies to help them remember to take their medication.

In some cases, assessment and intervention by a clinical neuropsychologist will be indicated – this may be necessary for clinical complexity, where there is a role for a clear treatment plan around cognitive and functional recovery, or where treatment as usual has not been successful.

RECOVERY TRAJECTORIES

Cognitive recovery is complex and can be difficult to predict. Some young people may not return to their previous cognitive ability, so it is important to provide clear information that is realistic while remaining hope driven. Adopt an approach that views recovery as a gradual process. It's okay to be honest, in that you don't know the specific trajectory for that young person's cognition, but that there are treatment options for assessment and intervention that can be explored together.

CONCLUSION

An awareness of the impact of cognition on a young person's well-being, functioning and recovery is integral to optimum care. It will guide you in providing appropriate screening, assessment, referral, psychoeducation and therapeutic intervention for young people and families. Importantly, incorporating some of the simple strategies from this resource into your work with young people is likely to have a significant impact on functional outcomes and the young person's sense of hope about the future.

FURTHER RESOURCES

Fact sheet: Introduction to cognition and mental health

Fact sheet: Cognition and psychosis

Module: Practical strategies for coping with cognitive difficulties

Fact sheet: Cognitive compensation and cognitive remediation

Toolkit for clinicians: Screening cognition in young people

Mythbuster: Cognition and mental health: sorting fact from fiction

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REFERENCES

1. Giedd J. The amazing teen brain. Scientific American. 2015.
2. Santesteban-Echarri O, Paino M, Rice S, González-Blanch C, McGorry P, Gleeson J, et al. Predictors of functional recovery in first-episode psychosis: A systematic review and meta-analysis of longitudinal studies. Clinical Psychology Review. 2017;58:59-75.
3. Morey-Nase C, Phillips L, Bryce S, Hetrick S, Wright A, Caruana E, et al. Subjective experiences of neurocognitive functioning in young people with major depression. BMC Psychiatry. 2019;19(209).
4. Medalia A, Revheim N. Dealing with cognitive dysfunction associated with psychiatric disabilities: a handbook for families and friends of individuals with psychiatric disorders. New York State Office of Mental Health; 2002.
5. Keefe R, Bilder R, Davis S, et a. Neurocognitive effects of antipsychotic medications in patients with chronic schizophrenia in the CATIE trial. Archives of General Psychiatry. 2007;64(6):633-647.
6. Thompson J, Stansfeld J, Cooper R, Morant N, Crellin N, Moncrieff J. Experiences of taking neuroleptic medication and impacts on symptoms, sense of self and agency: a systematic review and thematic synthesis of qualitative data. Social Psychiatry and Psychiatric Epidemiology. 2020;55:151-164.
7. Prado C, Watt S, Crowe S. A meta-analysis of the effects of antidepressants on cognitive functioning in depressed and non-depressed samples. Neuropsychology Review. 2018;28(1):32-72.
8. Crowe S, Stranks E. The residual, medium and long-term cognitive effects of benzodiazepine use: an updated meta-analysis. Archives of Clinical Neuropsychology. 2018;33(1):901-911.
9. Wright AL, Phillips LJ, Bryce S, Morey-Nase C, Allott, K. Subjective experiences of cognitive functioning in early psychosis: a qualitative study. Psychosis. 2019;11(1):63-74.
10. Spear L. Effects of adolescent alcohol consumption on the brain and behaviour. Nature Reviews Neuroscience. 2018;19:197-214.
11. Scott J, Slomiak S, Jones J, Rosen A, Moore T, Gur R. Association of cannabis with cognitive functioning in adolescents and young adults: a systematic review and meta-analysis. JAMA Psychiatry. 2018;75(6):585-595.
12. Allott K. Staging of cognition in psychiatric illness. UK: Cambridge United Press; 2019.
13. Carruthers S, Gurvich C, Sumner P, Rheenen T, Rossell S. Characterising the structure of cognitive heterogeneity in schizophrenia spectrum disorders: a systematic review and narrative synthesis Neuroscience and Biobehavioral Reviews. 2019; 107: 252-278.
14. Fuglset T. Set-shifting, central coherence and decision-making in individuals recovered from anorexia nervosa: a systematic review. Journal of Eating Disorders. 2019;7(22).
15. Allott K, van-der-el K, Bryce S, Parrish E, McGurk S, Hetrick S, et al. Compensatory interventions for cognitive impairments in psychosis: a systematic review and meta-analysis. Schizophrenia Bulletin. 2020; sbz134.
16. Cognitive Remediation Experts Working Group. 2010
17. Allott K, Cotton S, Chinnery G, Baksheev G, Massey J, Sun P, et al. The relative contribution of neurocognition and social cognition to 6-month vocational outcomes following individual placement and support in first-episode psychosis. Schizophrenia Research. 2013;150(1):136-143.

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