Cognitive

SYMPOSIUM

4582

Homelessness and cognitive functioning

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Homelessness is a major societal issue in most, if not all, countries. Although for some people homelessness is a short-term socioeconomic problem, for many it is a chronic socioeconomic state affecting much of their adult lives. During homelessness, people are at raised risk from a wide range of health challenges, including to psychiatric and neurological health. Such risks include high rates of victimization and violence, post-traumatic stress disorder, traumatic brain injury, exposure to contagious illness and pollution etc. In addition, some disorders such as developmental neurological problems, substance dependence and psychiatric illness may be factors that contribute to people becoming homeless. In accordance with these risk factors, neuropsychologists have observed that cognitive functioning in samples of homeless adults tends to be lower than might be expected. Given the wide range of pathologies and risk factors associated with homelessness, it is perhaps not surprising that the interpretation of this lower ability has not been simple. Cognitive function of homeless adults is sometimes considered as essentially normal, given their life contexts, or from a more medical-neuropsychological perspective it is usually considered as reflecting deficits in performance, suggesting acquired etiology. More recently the role of developmental disorders, such as being on the autism spectrum, has been recognized, with an over representation of undiagnosed developmental disorders within homeless adult populations. These different interpretations have implications for the care and potential treatment of homeless individuals. In this symposium the etiology of assumed lower cognitive ability is explored, as well as how homeless services can better use this neuropsychological knowledge to support homeless people.

Adult homelessness and language ability

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Several studies of have reported that neuropsychological test performance by homeless adults tends to fall below normative sample averages. The score distributions of groups of homeless adults tend to be about one standard deviation below the normative means. This is often taken in support of a cognitive impairment interpretation. Nevertheless, scoring below a normative average is not necessarily abnormal or pathological. In particular, homeless adults tend to come from low socioeconomic status (SES) family backgrounds, which is itself associated with lower than 'normal' cognitive test performance (when normal is defined by the estimated population mean). Many homeless adults may therefore be performing within the normal range for their childhood SES. One way within neuropsychology to approach this has been to use assessments that estimate premorbid function, such as the pronunciation of words that have unpredictable orthographical-phonological correspondence (i.e., forcing lexical reading). This allows a comparison of expected with actual observed performance. Here I review studies that have used this approach with groups of homeless adults. I also present new data on a sample of homeless adults who were assessed with the Boston Diagnostic Aphasia Examination. The results suggest that both primary language modalities, oral comprehension and oral expression, were significantly below what would be expected based on SES background or lexical reading ability. This is interpreted as indicating a pathologically lower language ability associated with homelessness, as it can not easily be explained by SES background or general premorbid ability. However, it remains unclear whether this reflects acquired impairments of language, or perhaps over representation of individuals with developmental language disorder within the adult homeless population. It does though suggest that whether acquired or developmental in origin, the language difficulties suffered by many homeless adults are not simply part of a normal variation of ability, but reflect language pathology.

Cognitive impairment and homelessness: Prevalence, risk factors and autism spectrum disorder

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This paper will present the findings of a scoping review on cognitive impairment in homeless populations before examining initial research findings on the link between autism spectrum disorders and homelessness. Cognitive impairments, including autism spectrum disorders (ASD) can affect an individual's ability to live independently and are disproportionately over-represented in homeless populations. Structural and personal factors including relationship breakdown, employment and welfare difficulties and susceptibility to abuse put this population further at risk of homelessness. Once homeless, persons with cognitive impairment often struggle to get appropriate support and difficulties are confounded by the complex interplay between cognitive impairment and mental health, substance use, and factors related to exposure and malnutrition. This presentation will begin by briefly presenting a scoping review which examined etiologies of cognitive impairments in homeless populations; delineating between acquired impairments, such as Traumatic Brain Injuries, and developmental disabilities. After outlining the search strategy this paper will discuss the difficulties of measuring prevalence of specific etiologies given presence of co-occurring disorders and overlap between symptoms. Nonetheless, the high prevalence of cognitive impairment in homeless populations as highlighted by this review will be discussed as both a risk factor to and perpetuator of homelessness. This paper will then present initial findings of a narrative study on ASD and homelessness. Using case examples, it will be argued that risk factors to homelessness are elevated in autistic adults who are susceptible to socioeconomic disadvantages such as social isolation and lack of employment opportunity. Homeless, autistic adults were found to be less likely to have received a diagnosis in childhood and subsequently missed out on support in education and employment. Furthermore, co-occurring developmental disabilities and mental illness compounded difficulties leading up to, and during, homelessness. This paper will conclude by arguing that service adaptation is critical for re-engaging and rehabilitating this population.

Neuropsychology at homelessness services: Suitability and challenges for practice and research

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Homelessness has long been a key topic of sociology, as if this issue was considered a social condition. However, over recent decades, a growing amount of research from medical sciences points to the fact that homelessness is also accompanied by specific health conditions. Some of these health issues limit follow-up and rehabilitation opportunities: this is particularly the case with cognitive functioning. According to some authors, over 80% of the homeless population suffer from cognitive impairments. Little is known about the etiology of these cognitive impairments, but they seem to be linked to different factors (such as traumatic brain injuries, childhood traumas or psychiatric disorders) to which people are exposed before and/or during homelessness. Thus, it is likely that homelessness is reinforced, if not triggered, by cognitive disorders. The homeless population may require special attention by neuropsychologists. In spite of these facts, cognition remains under-explored in the research on homelessness and barely investigated by institutions working with the homeless population. The lack of research on this topic can be explained by some methodological challenges which seem to be difficult to circumvent. The lack of consideration of cognitive impairments in the follow-up of homeless people can be explained by staff ignorance of the issues and

prefrontal cortex: 0.012 ± 0.041 vs. -0.011 ± 0.031 umol/L, $p < .1$), while there was no significant difference between groups during the resting state. The yoga group demonstrated significantly higher functional connectivity in the executive state than the control group but lower connectivity in the resting state. Conclusions: Neural activation in the prefrontal cortex during the Stroop task and the enhancement of prefrontal cortex–motor cortex functional connectivity in the brain are positively related to yoga practice.

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The longitudinal and transdiagnostic nature of anxiety- and depression-linked interpretation biases

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Biases in cognitive processing, such as in the emotional interpretation of ambiguous stimuli, are integral to cognitive theories of Depression and Anxiety. In contemporary psychopathological approaches, interpretation bias is considered a common process that transcends disorder diagnoses – i.e., a 'transdiagnostic' construct – making it a potential treatment target to address comorbidity. Interpretation bias is thought to drive both the maintenance and development of said disorders, as previously argued via experimental manipulation studies, though there still is a lack of longitudinal research demonstrating this causality within a naturalistic setting. Moreover, despite growing notions that the well-documented overlaps between Depression and Anxiety may be partly due to transdiagnostic processes such as Rumination and Worry, it remains relatively unknown how much biased interpretations of depression- or anxiety-specific content may in turn influence the other disorder dimension. We aim to address these pertinent research gaps by recruiting a sample of university students, and charting their longitudinal progression of various psychopathology-related constructs over 6 months. At each of three data collection time points, participants will perform a task examining their interpretation biases pertaining specifically to social, anxiety-linked, and depression-linked concerns. Their anxiety and depressive symptomology along with related transdiagnostic constructs will be assessed via questionnaires. Correlational and predictive relationships between all variables will be examined using structural equation modelling. We hypothesize that interpretation biases should predict the development of psychopathological symptoms at later time points. Moreover, given that the overlap between anxiety and depression is not unilaterally mirrored, we surmise that anxiety-linked biases may be more predictive of depressive symptoms than depression-linked biases are of anxiety symptoms. This may suggest that increasing focus on anxiety-related biases may facilitate intervention efficacy. By elaborating on the causal and transdiagnostic relationships between interpretation biases and anxiety/depression-related constructs, our findings will hopefully inform treatment efforts moving forward.

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Cognitive reserve, cognition and quality of life in first-episode schizophrenia spectrum disorders

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The objective: Cognitive reserve (CR) is a hypothetical construct designed to explain differences between pathology and clinical manifestation of a condition such as cognitive dysfunction. As such, CR may contribute to the explanation of the heterogeneous nature of cognitive deficit observed in schizophrenia. This pilot study aimed to explore the relationship between cognitive reserve, cognitive performance and quality of life (QoL) in first-episode schizophrenia patients (FES). Methods: 137 patients with an ICD-10 F20.X and F23.X diagnosis and 62 controls completed an extensive neuropsychological battery measuring six cognitive domains: speed of processing, attention, working memory, verbal memory, visual memory, and executive functioning. The cognitive reserve index was calculated as a proxy of participant's employment, highest attained education, parental education, and premorbid IQ with the CR composite score being the average of the z-transformed variables. Quality of life was assessed with WHOQOL-BREF questionnaire. Results: A MANCOVA showed that in FES patients, CR was significantly ($p < .05$) related to cognitive functioning in all domains except for speed of processing, explaining 50.6% of the variance observed in cognition. Higher CR scores were associated with better cognitive performance. In controls, effects of CR were limited to two domains: executive functioning and working memory. Multiple linear regression showed that CR significantly predicted social construct of QoL in FES patients. Conclusions: These preliminary results suggest that CR might be related cognitive heterogeneity well as the symptoms severity and quality of life in FES patients. Further investigations into the time-course of these relationships are recommended.

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Children's narrative comprehension: Effects of working memory and sustained attention

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Text comprehension involves the construction of a coherent mental representation. For children, this is a cognitively demanding task. The purpose of this study is to analyze the role of working memory (WM) and sustained attention (SA) in the comprehension of narratives in 5- and 6-year-old children. For this, 100 children were administered two WM tasks and one SA. To assess comprehension, they were asked 18 questions of literal and inferential content about three stories previously narrated by a professional storyteller. A correlation analysis showed that literal comprehension associated with forwarding digit span (Rho = 0.37), backward digit span (Rho = 0.37), and the SA task (Rho = −0.37). Inferences correlated with forwarding digit span (Rho = .36), backward digit span (Rho = 0.46), and the SA task (Rho = −0.37). A comparison analysis indicated significant differences between 5- and 6-year-olds in SA ($t(98) = 3.08$, SEM = 5.41, $p < .01$), literal comprehension ($t(98) = 4.05$, $p < .001$), and inferences ($U = 750.50$, $p < .001$), but not in forward digit span ($t(98) = 1.43$, $p = .16$) and backward digit span ($U = 1043.50$, $p = .14$). Finally, a path analysis was conducted with age as an independent variable, comprehension as the dependent variable, and WM and SA as mediating variables, being comprehension, a latent factor formed by literal information and inferences, and WM another latent factor formed by forwarding digits and backward digits span. The path analysis showed a good fit of the data to the model (c2(1.93, $p = .86$; AGFI = .97, CFI = .99, TLI = .99, RMSEA = .00). The analysis showed that age had a significant effect on all measures except WM, and both WM and SA play a role in comprehension. This suggests that, in 5 and 6-year-olds, age has an effect on the comprehension of general information and the ability to generate inferences, but this effect is mediated, in part, by the child's ability to SA on the narration and to temporarily store the information received while listening to it.

7664
Measuring altruism in a Chinese context: A revised scale

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Although altruism may be a universal virtue across all societies, there is no universal measurement because specific altruistic actions are influenced by many factors, such as culture and social customs. The Self-report Altruism Scale (SRA), which was developed by Canadian scholars, has become a widely used measure of altruism. Non-western scholars have revised and developed several versions of the Scale for various cultural contexts. The present study aims to develop a Chinese version of the Scale that is better adapted to Chinese culture and more suitable to assess the altruistic behaviour of adults in China. The study was