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Defeatist performance beliefs

Introduction

Defeatist performance beliefs are over-generalised negative thoughts about one's ability to successfully perform goal-directed behaviour. This prevents the initiation of and engagement in social and employment opportunities and therefore is considered a possible contributing factor to negative symptoms and poor functional outcomes.

Neurocognitive deficits in memory and attention for example may contribute to unsuccessful goal attainment, which over time can give rise to dysfunctional attitudes, including defeatist performance beliefs. These dysfunctional attitudes, in turn, lead to a decrease in motivation for future goal-related activities, which may contribute to functional outcome deficits. Reduction in goal-directed behaviour reinforces further disengagement with the social world.

Method

We have included only systematic reviews with detailed literature search, methodology, and inclusion/exclusion criteria that were published in full text, in English, from the year 2000. Reviews were identified by searching the databases MEDLINE, EMBASE, and PsycINFO. Reviews with pooled data are prioritized for inclusion. Reviews reporting fewer than 50% of items on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA[1]) checklist have been excluded from the library. The evidence was graded guided by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach[2]. The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found one systematic review that met our inclusion criteria[3].

- High quality evidence suggests significant but small relationships between increased defeatist performance beliefs and worse negative symptoms and functional outcomes (general functioning, quality of life, life skills).

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Defeatist performance beliefs

Campellone TR, Sanchez AH, Kring AM

Defeatist Performance Beliefs, Negative Symptoms, and Functional Outcome in Schizophrenia: A Meta-analytic Review

Schizophrenia Bulletin 2016; 42: 1343-52

View review abstract online

Comparison	**Relationship between defeatist performance beliefs and negative symptoms and functional outcomes in people with schizophrenia.**
Summary of evidence	**High quality evidence (large samples, consistent, precise, direct) suggests significant but small relationships between increased defeatist performance beliefs and worse negative symptoms and functional outcomes.**
Negative symptoms	
A significant, weak relationship between increased defeatist performance beliefs and increased negative symptoms; 10 studies, N = 858, r = 0.25, 95%CI 0.17 to 0.32, $p < 0.001$, Q = 9.03, $p > 0.05$ Meta-regressions revealed that age and sex were not related to the effect size.	
Functioning and quality of life	
A significant, weak relationship between increased defeatist performance beliefs and decreased functioning; 8 studies, N = 702, r = -0.27, 95%CI -0.38 to -0.17, $p < 0.001$, Q = 6.88, $p > 0.05$ Meta-regressions revealed no association between age and the effect size, but studies that included more men found a stronger relationship (r = -0.97, p = 0.03).	
Consistency in results‡	Consistent
Precision in results§	Precise
Directness of results‖	Direct

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Explanation of acronyms

CI = Confidence Interval, N = number of participants, *p* = statistical probability of obtaining that result (*p*< 0.05 generally regarded as significant), Q = test for heterogeneity, *r* = Pearson's coefficient, vs. = versus

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Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; reporting bias – selective reporting of results; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small[4].

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified (100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre- to post-treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. Less than 0.4 represents a small effect, around 0.5 a medium effect, and over 0.8 represents a large effect[4].

Relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, a RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. A RR of 1.00 means there is no difference between groups. A medium effect is considered if RR > 2 or < 0.5 and a large effect if RR > 5 or < 0.2[5]. Odds ratios (ORs) are similar to RRs, but they are based on the probability of an event occurring divided by the probability of that event not

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occurring. ORs and RRs are similar in size when the event is rare, such as with schizophrenia. lnOR stands for logarithmic OR where a lnOR of 0 shows no difference between groups. Hazard ratios (HRs) measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship between variables. They can provide an indirect indication of prediction, but do not confirm causality due to possible and often unforseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (*b*) regression coefficients indicate the average change in the dependent variable associated with a one unit change in the independent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of effect across studies (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent considerable heterogeneity and over this is considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula;[4]

$$I^2 = \left(\frac{Q - df}{Q}\right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, these criteria should be relaxed.[6]

‖ Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and/or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available and is therefore inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.

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