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▶ Examining differential effects of psychosocial treatments for cocaine dependence: an application of latent trajectory analyses.

Stulz N., Gallop R., Lutz W. et al.
Drug and Alcohol Dependence: 2010, 106(2–3), p. 164–172.
Request reprint using your default e-mail program or write to Dr Stulz at niklaus.stulz@psy.unibe.ch

Advanced statistical techniques applied to data from a landmark US cocaine therapy study revealed three typical recovery trajectories; at the extremes patients who fared best and worst did so whatever the therapy, but in the middle a consistent approach (in this case, 12-step) which matched cultural expectations worked best.

Summary The featured report sought to differentiate cocaine-dependent patients based on how well they responded to psychosocial therapies, and then to assess whether different therapies were more or less effective for these groups of patients. The aim was to go beyond, 'Is treatment A better than treatment B?', to 'Which treatment works best for which types of patients?'

Data for the featured report derived from a landmark US study described in an earlier Findings analysis, which confounded expectations by showing that well structured drug counselling can better professionally delivered psychotherapies.

In the original trial, 487 patients were randomly assigned to different manual-guided treatments. For six months all received group drug counselling weekly based on 12-step principles. For some this was the sole treatment, for others it was supplemented by one of three individual treatments: drug counselling also based on 12-step principles; cognitive psychotherapy; or supportive-expressive psychotherapy. Each individual treatment was provided over the same weekly or twice weekly schedule in the first six months then monthly for the next three months.

Whether the measure was overall drug use, the frequency of cocaine use, or the proportion of clients altogether avoiding cocaine, over the year following the intensive six-month treatment phase, patients receiving combined individual and group drug

counselling tended to fare better than those receiving either of the psychotherapies, which were no better than basic group counselling. For example, 38% of the combined counselling clients managed three months without using cocaine compared to around 20% of the psychotherapy clients and 27% of those receiving just group counselling.

The featured report re-analysed this data using an advanced statistical technique which divided up the patients in to groups with characteristic trends during the first six months of treatment both in the number of days they had used cocaine and the severity of their overall drug and alcohol use. This meant narrowing the analysis to the 346 (of 487) patients who completed at least five monthly assessments during this phase. Typically they were employed white men in their 30s who lived alone; over 8 in 10 smoked crack cocaine.

Main findings

Three groups emerged from the analysis:
• *Common and fast responders* constituted about half (52%) the sample. At the start of the study their cocaine and overall drug/alcohol use was moderate and during treatment rapidly fell to very low levels. By the end of the six months the drug/alcohol problems of nearly 70% had 'reliably improved' beyond the point which might have been due simply to measurement error.
• *Moderate responders* constituted about a third (35%) of the sample. They differed from the first group in their slower and less complete (41% reliably improved) remission in overall cocaine and overall drug/alcohol use.
• *Severe users* constituted just one in eight (13%) of the sample. They were using most heavily at the start of treatment (especially on the overall drug/alcohol scales). Although they improved to about the same degree as the moderate responders, this still left them using cocaine and alcohol and other drugs most often at the end of the six months. They were also most likely to leave treatment early.

These three types of response to treatment were equally common whatever the therapy. Moreover, trajectories apparent during treatment generally persisted post-treatment to 18 months after the study started, when the fast responders maintained low levels of substance use, while severe users consumed cocaine relatively often, though still less than at the start of the study or during the active treatment phase.

Next the analysts probed for links between 26 patient characteristics and which of the three groups patients belonged to. After overlaps between characteristics had been accounted for, few statistically significant associations remained. Two involved the degree to which the patient endorsed the 12-step philosophy on which group counselling was based, another two the degree to which they experienced support for their recovery from family, friends, or other people with whom they shared a home. The more they endorsed 12-step beliefs and the more support they had, the less likely they were to be in the two groups who responded least well to treatment. Another link was between a relatively low level of resistance to treatment and being in the severe user group (thought likely to reflect the fact that such users had been forced to acknowledge the severity of their problems and their need for help).

Finally was the issue of whether any of the three groups of patients responded (within the confines of their group profile) relatively well to a particular therapy, assessed

primarily in terms of the overall severity of their alcohol/drug use problems. Broadly there were two such links, of which the most clinically relevant was that 'moderate responders' did best when the group 12-step counselling all patients received had been supplemented by individual counselling along the same lines; their drug/alcohol problems remitted more rapidly during treatment than moderate responders offered other therapies, and they also tended to end this phase with better substance use outcomes (more reliably improved in their drug/alcohol problems and greater reductions in cocaine use) and to continue to do better after treatment ended.

The authors' conclusions

The findings suggest there are important differences in how different types of cocaine-dependent patients react to psychosocial interventions and to particular therapies. Three distinct groups were identified based on the initial severity of their substance use and how rapidly and completely this remitted during treatment.

Over half started treatment using moderately and then within the first month greatly reduced both cocaine and overall drug/alcohol use regardless of the type of therapy, gains sustained after treatment. This suggests that for many patients the type of psychosocial therapy is immaterial; they do well even offered just weekly group drug counselling. For these patients, cost rather than the overall effectiveness of the therapy may prove to be the more important criterion of treatment allocation.

Compared to other therapies, the superiority found across the whole sample of adding individual to group 12-step counselling is revealed by this re-analysis as primarily due to its greater impact among the third of patients who (like the good responders described above) started treatment with moderate substance use problems, but then did not improve as rapidly or completely as most of the sample. They differed from other patients in being less strongly affiliated to 12-step philosophy and practice and in enjoying less social support for their recovery. It suggests that these type of patients who are prone to only moderate remission of substance use are best allocated to drug counselling rather than psychotherapy.

In this sample (which excluded patients being medicated for psychiatric problems and those who complied poorly with the study), severely problematic substance users who benefited only moderately from treatment were in the minority. They too differed from other patients in being less wedded to 12-step philosophy and practice and in enjoying less social support for their recovery, but also more fully acknowledged their addiction and need for treatment. At this extreme, as at other end among the fast responders, the type of therapy was immaterial; they did relatively poorly (especially in terms of cocaine use) in all the options tested by the study. Perhaps they would have benefited from more intense or longer therapy or special measures to counter their tendency to leave treatment early.

It should be borne in mind that the three patient groups, their proportions in the sample, and how they responded to the therapies, emerged from a single study which excluded some of the more problematic and non-compliant patients and offered them highly controlled therapeutic programmes. Whether these patterns would be replicated in routine practice remains to be seen.

FINDINGS As the authors acknowledged, this analysis is best considered as exploring

the data for patterns which require confirmation in a study designed for this purpose. In particular, the statistically significant findings were few relative to the number of possibilities tested by the analyses, risking some

achieving significance purely by chance.

It seems counter-intuitive that patients least affiliated to 12-step principles did best when their therapy was completely based on these principles, rather than mixing these with cognitive or supportive-expressive approaches. One way to make sense of this finding is that these mixtures further weakened their affiliation to 12-step philosophy yet did not consistently replace it with an alternative, leaving them without a clear account of their 'illness' or a clear route out of it, among the 'common factors' which underlie effective therapy. While this effect was statistically significant only among the moderate responders, it was also apparent among the majority of the sample who responded rapidly and well to treatment.

The advantage gained in some situations by consistency and therefore clarity in therapeutic philosophy also seemed visible in the major US DATOS addiction treatment study, in which cocaine use reductions were associated with regular frequent attendance at 12-step meetings only after treatment in modalities more closely allied to 12-step philosophy. A similar consistency effect has been reported in other US studies (1 2) of different populations and drug problems.

Across the whole sample and whatever therapy they had been allocated to, patients in the featured study who strongly endorsed what in the USA is the most culturally accepted understanding of how to recover from addiction (and a common thread in all the treatments in the featured study) did best in terms of sustaining abstinence from cocaine during treatment.

While this study was unable to pinpoint what it was about 12-step adherence which made the difference, others have identified attendance at and participation in 12-step meetings and associated activities which offer the user a ready-made pro-abstinence social network to replace previous drug-focused networks. Such mutual aid is gaining prominence in the UK as the recovery agenda forefronts persisting abstinence-based peer support as a way of sustaining the gains made during what are likely to be less prolonged or less intensive treatment episodes.

Apart from the caveats put forward by the authors, it is worth adding that the therapies tested by the study were a small subset of the available psychosocial therapies, and in particular did not include 'contingency management' approaches which manipulate material and/or social rewards and punishments for abstinence or pro-recovery activities. And apart from their conclusions, it is worth drawing the lesson from this study (as from others) that dependence on crack cocaine is not uniquely or even particularly difficult to emerge from when patients are convinced enough of the need for change to seek and enter treatment. The more difficult problem is not stopping (which often happens 'naturally' even without treatment), but staying stopped in the same environment which led to dependent use, seemingly apparent in the featured analysis in relatively poor substance use outcomes among patients with less social support for recovery from dependent substance use.

Thanks for their comments on this entry in draft to independent trainer and consultant Aidan Gray of Hum

based in London, England. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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