

> North Warwickshire NHS Trust

Using robust algorithms to conduct clinical research

The situation

North Warwickshire NHS Trust provides community, mental health and learning disability services to the three areas: North Warwickshire, Nuneaton and Bedworth, and Rugby. Specialist learning disability services are provided on a sub-regional basis through centres at Brooklands, Birmingham, and Lea Castle, Kidderminster, and various community sites. The trust works closely with other agencies to ensure comprehensive and integrated health care is delivered to local people.

The Health of the Nation Outcome Scales for People with Learning Disabilities (HoNOS-LD) is the result of collaboration between the Royal College of Psychiatrists, the British Psychological Society and the Department of Health. HoNOS-LD measures global outcomes (improvement or deterioration) in people with learning disabilities who have additional mental health needs.

The challenge

As with all clinical and scientific experiments, the variables measured must be robust and reliable. The main goal for North Warwickshire NHS Trust was to calculate whether each of the 18 items in its psychometric scales – used to determine improvement or deterioration – had acceptable inter-rater reliability (ie, whether the scoring between different raters or assessors was consistent throughout).

David Martin, Clinical Audit Co-ordinator at Brooklands North Warwickshire NHS Trust, explains: “The scales are an aid to clinical effectiveness among this vulnerable group of people. We knew the psychometric scales were easy to use, but we had to be confident that the same scores would occur regardless of who the assessor was.”

□ “With SPSS Inc. software, the potential is there to improve the clinical effectiveness of interventions for a vulnerable group of people, and therefore their quality of life could improve measurably”

– David Martin
Clinical Audit Co-ordinator,
Brooklands North Warwickshire NHS Trust

At a glance

Country: UK

Industry: Public sector

Date founded: NHS founded 1948

Company type: Health service

Application

Clinical research

Solutions used

PASW® Statistics Base

The solution

With the help of SPSS Inc. software, the researchers recruited 26 field sites throughout the United Kingdom and gathered data on more than 700 people, each of whom had a learning disability and an additional mental health problem.

“After entering data, we could easily reject the cases that did not meet the agreed methodological criteria. We were then left with 372 pairs of ratings. Each rating had been made independently by two assessors scoring at the same time, in the same setting, and using the same information source. We measured the extent to which the pairs of assessors agreed with each other’s scores,” Mr Martin continues.

For some 40 years, SPSS Inc.’s data analysis software has enabled clinicians and researchers to conduct tests and experiments with the most robust statistical procedures available on the market. “If it wasn’t for PASW® Statistics* software, we would probably have used Microsoft® Excel or similar software, and we would have had to calculate only Pearson’s correlation co-efficients, which would not be as reliable for our purposes as other statistical tests. It would also take hours to complete, because spreadsheets aren’t designed for this type of research work – which we can complete using PASW Statistics in a matter of minutes.”

The results

With the aid of PASW Statistics software, North Warwickshire NHS Trust found that by calculating Cohen’s Kappa for each of the 18 items, the Health of the Nation Outcome Scales for people with Learning Disabilities was shown to have good inter-rater reliability and was reproducible. This meant that the HoNOS-LD could be considered for routine use to improve clinical effectiveness among this often-overlooked group of people. “You can imagine that wrong or inconsistent scoring would be problematic and negatively affect the welfare of this group of people. But by using SPSS Inc. software we are confident of our results,” Mr Martin says.

Commenting on this continuing (but so far successful) project, he adds: “We do not yet know what savings that this work has gained for the National Health Service or other organisations that help people with learning disabilities and who have additional mental health needs. With SPSS Inc. software, the potential is there to improve the clinical effectiveness of interventions for a vulnerable group of people, and therefore their quality of life could improve measurably.”



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