

from a clinical trial comparing once-daily OROS hydromorphone to oxycodone ER for the treatment of patients with osteoarthritis pain. The classic techniques involved using LOCF to replace missing values (including drop out) and change-score analysis to compare group by time differences. Modern techniques involved using the multivariate normal Bayesian MI with mixed model ANOVAs to analyze the group by time differences. Four databases were imputed to obtain efficiency near 95%, and auxiliary variables were used to help ensure the data were Missing At Random (MAR) rather than Missing Not At Random (MNAR).

Results: With classic techniques, two tests were significant at the .05 level, and the mean alpha was .251. With the modern techniques, two tests were significant but the mean alpha was reduced to .181. Additionally, standard error among alpha levels was more than half as small in the modern techniques group (.048) than in the classic techniques group (.113)

Conclusions: Modern missing data techniques provided more accurate and consistent results among patient-reported outcomes in a sleep instrument. With regard to the current clinical trial, the use of modern techniques demonstrated continued improvement of once-daily OROS hydromorphone treated patients over oxycodone ER treated patients.

A Model for Transferring Variables Between Different Data-sets Based on Imputation of Individual Scores

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It is an often encountered problem that variables of interest are scattered in different data sets. Given the two methodologically similar surveys, a question not asked in one survey could be seen as a special case of missing data problem (Gelman et al., 1998). The paper presents a model for transferring variables between different data-sets applying the procedures for multiple imputation of missing values.

The feasibility of this approach was assessed using two Dutch surveys: Social and Cultural Developments in The Netherlands (SOCON 2000) and the Dutch Election Study (NKO 2002). An imputation model for the left-right ideological self-placement was developed based on the SOCON survey. In the next step, left-right scores were imputed to the respondents from the NKO study. The outcome of the imputation was evaluated, first, by comparing the imputed variables with the left-right scores collected in three waves of the NKO study. Second, the imputed and the original NKO left-right variables are compared in terms of their associations with a broad set of attitudinal variables from the NKO data set.

The results show that one would reach similar conclusions using the original or imputed variable, albeit with the increased risk of making Type II errors.