
Potentially the strongest evidence for a stage theory would be to show consistently in randomized experimental studies that stage-matched interventions are more effective than stage-mismatched interventions in moving people to the next stage in the sequence [1, 2]. Only a few such studies have been conducted to date. The study reported by Dijkstra et al. [3] is the first to find clear evidence for positive matching effects in the domain of smoking cessation. The key results are reported in their Tables 2 and 3. Among smokers who were in the pre-contemplation stage at baseline, 34.1% of those who received information designed to increase the pros (perceived advantages) of quitting had moved to a later stage at 2-month follow-up, compared with 18.9% among those who received information designed to reduce the cons (perceived disadvantages) of quitting, and 10.8% among those who received information designed to increase self-efficacy for quitting. By contrast, those who were in the contemplation stage at baseline benefited most from the cons information. The authors argue that, from a theoretical viewpoint, information about the pros was matched to smokers in the pre-contemplation stage and information about the cons was matched to smokers in the contemplation stage. Significant forward stage movement still occurred in the mismatched conditions but, without a no-information control condition, it is not possible to say whether the mismatched information was counter-productive.

The results for the preparation and action stages were less clear-cut. Smokers in the preparation stage appeared to benefit equally from the pros and the cons information; efficacy information was marginally significantly less effective. This pattern of findings is difficult to explain. Participants in the action stage benefited most from efficacy information, although this was only marginally significantly more effective than the other two types of information.

We need more experimental match–mismatch studies to test hypotheses from well-specified stage theories. Future studies should include measures of the variables that are being targeted in the different stage-matched interventions in order to demonstrate that information designed to increase the pros of quitting, for example, does indeed increase the perceived pros of quitting and, ideally, does not influence the perceived cons of quitting or self-efficacy. Put simply, does a particular stage-matched intervention influence the variables that it is intended to influence? This may require pre-testing of the interventions before conducting the main match–mismatch study. Wherever possible, mediation analysis should be conducted to test whether the effect of a stage-matched intervention on forward stage movement is mediated by the theoretical determinants.

The stage theory used in this study can be regarded as a variant of the transtheoretical model (TTM; [4]), which is the dominant stage theory in this field. The ‘Dutch version of the TTM’, as I have referred to it [2], or the Social Cognitive Stage Model (SCSM), as Dijkstra et al. [3] refer to it, improves on the TTM in at least two ways. The model is specified more clearly with respect to the variables that are postulated to influence each of the stage transitions, and the way in which the stages are defined and operationalized avoids the logical flaws of the TTM staging algorithm. An important difference between the two versions is that the processes of change are an important component of the TTM but do not feature in the SCSM. Although fundamental problems with the TTM have been identified, leading to a recent call for the model to be abandoned [5], the study by Dijkstra et al. suggests that there may yet be mileage in trying to develop better stage theories and testing predictions from them using strong research designs.

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References