A Taxonomy of Behavior Change Techniques Used in Interventions

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Objective: Without standardized definitions of the techniques included in behavior change interventions, it is difficult to faithfully replicate effective interventions and challenging to identify techniques contributing to effectiveness across interventions. This research aimed to develop and test a theory-linked taxonomy of generally applicable behavior change techniques (BCTs). Design: Twenty-six BCTs were defined. Two psychologists used a 5-page coding manual to independently judge the presence or absence of each technique in published intervention descriptions and in intervention manuals. Results: Three systematic reviews yielded 195 published descriptions. Across 78 reliability tests (i.e., 26 techniques applied to 3 reviews), the average kappa per technique was 0.79, with 93% of judgments being agreements. Interventions were found to vary widely in the range and type of techniques used, even when targeting the same behavior among similar participants. The average agreement for intervention manuals was 85%, and a comparison of BCTs identified in 13 manuals and 13 published articles describing the same interventions generated a technique correspondence rate of 74%, with most mismatches (73%) arising from identification of a technique in the manual but not in the article. Conclusions: These findings demonstrate the feasibility of developing standardized definitions of BCTs included in behavioral interventions and highlight problematic variability in the reporting of intervention content.

Keywords: behavior change, intervention, content, techniques, taxonomy, CONSORT

Do differences in the content of behavior change interventions have an impact on effectiveness? If so, which techniques or combinations of techniques enhance effectiveness? Answers to these questions are crucial to designers of behavior change interventions. Researching these questions depends on identification of common and distinctive techniques across evaluated interventions. For example, a reviewer might observe that some interventions use goal setting alone and others combine goal setting with self-monitoring and feedback (as might be suggested by control theory; Carver & Scheier, 1982). If the latter group were found to be consistently more effective than the former, this would indicate that the combination of these three techniques (rather then goal setting alone) was critical to effectiveness. Unfortunately, categorization of intervention content is problematic because a standardized vocabulary that defines intervention components has not been developed. Consequently, different reviewers use different approaches to categorizing intervention content (cf. Albarracín, Gillette, Earl, Glasman, Durantini, & Ho, 2005; Webb & Sheeran, 2006). This may mean that particular techniques or content characteristics that distinguish between interventions remain unidentified. If such “unseen” content differences are associated with effectiveness, then researchers will remain unaware of how intervention content determines effectiveness, thereby impeding the design of optimally effective interventions.

Meta-analysis has demonstrated that inclusion of particular intervention techniques is associated with effectiveness. For example, Albarracín et al. (2005) showed that 10 distinct techniques (e.g., provision of factual information, attitudinal arguments, and normative arguments) could be reliably identified in published descriptions of interventions designed to promote condom use. These reviewers identified which techniques were associated with effectiveness and how technique effectiveness was moderated by the recipients. For example, provision of normative arguments was found to be associated with effectiveness for audiences under age 21 but with ineffectiveness for older audiences. The results generated recommendations for intervention designers and allowed theory testing. Theories such as the theory of reasoned action (Fishbein & Ajzen, 1975) were supported for older audiences. The results generated recommendations for intervention designers and allowed theory testing. Theories such as the theory of reasoned action (Fishbein & Ajzen, 1975) were supported for older audiences.

By contrast, theories advocating use of fear appeals were not supported because inclusion of attitudinal arguments was associated with effectiveness, as was inclusion of normative arguments (for young people). Despite the importance of Albarracín et al.’s (2005) analyses, it seems unlikely that condom promotion interventions are generally

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Please see http://www.interventiondesign.co.uk for the coding manual and related research.

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composed of only 10 distinct techniques. Consequently, it is possible that associations between currently identified techniques included in interventions and intervention effectiveness could be overshadowed by uncategorized content differences. The need for more comprehensive categorization systems is further emphasized by reviews from other behavioral domains (e.g., Webb & Sheeran, 2006). For example, Hillsdon, Foster, Cavill, and Naidoo (2005) reviewed community-based physical activity interventions and identified techniques which were more frequently found in effective interventions, namely, instruction by means of written materials, encouraging self-monitoring and providing telephone support. Thus, a range of behavior change technique definitions is required to comprehensively relate effectiveness to intervention content across behavioral domains, thus illuminating when and how content matters to effectiveness.

Considerable progress has been made in standardizing the description of intervention evaluations through acceptance by journal editors of the CONSORT (Moher et al., 2001) and TREND statements (Des Jarlais, Lyles, & Crepaz, 2004), which specify information that should be included in published reports. Davidson et al. (2003) have augmented these guidelines by proposing that behavioral scientists should also report (a) the content or elements of the intervention, (b) the characteristics of those delivering the intervention, (c) the characteristics of the recipients, (d) the setting (e.g., worksite), (e) the mode of delivery (e.g., face-to-face), (f) the intensity (e.g., contact time), (g) the duration (e.g., number of sessions over a given period), and (h) adherence to delivery protocols. Such standardization combined with use of standard measures of behavior change (e.g., Semaan et al., 2002) should greatly accelerate the identification of factors associated with behavior change. Yet clarity concerning the “content or elements” of behavior change interventions remains problematic because although CONSORT guidelines specify that evaluators should report “precise details of interventions [as] . . . actually administered” (Moher et al., 2001, p. 1192), there is no standardized vocabulary with which to describe the techniques used by designers of behavior change interventions. Consequently, unlike descriptions of reinforcement schedules in Skinner’s (1938) experiments, intervention descriptions included in published evaluations of behavior change interventions are variable and subjective in both language and format.

Particular theory-based techniques and combinations of techniques have been clearly defined (e.g., motivational interviewing; Rollnick & Miller, 1995). In such cases, reviewers can reasonably assume that different research teams applying these techniques are using similar procedures and so are likely to be eliciting the same underlying change processes. Moreover, some published evaluations of health behavior interventions clearly list the techniques used in the intervention. For example, Inoue et al. (2003, pp. 157–158) noted the intervention involved “explaining the benefits of physical activity,” using a “decisional balance,” encouraging “goal setting [and] self-monitoring,” inviting participants to sign a “contract to maintain an active lifestyle,” and “control[ling] reinforcers encouraging physical activity.” This multicomponent intervention also included advice “to seek support of family and friends” and lessons on use of “positive self talk” and “relapse prevention” techniques. In this case, the content of the intervention is described in terms of discrete techniques that can be translated into practical delivery procedures and materials in an appropriate manual, thereby facilitating replication and adoption. Unfortunately, many published intervention descriptions focus primarily on modes of delivery and/or the type of person delivering the intervention component (Davidson et al., 2003), for example, “counseling sessions,” “classes,” “discussion groups,” “peer-led laboratories,” and so forth. Such descriptions mask procedurally and theoretically distinct designs and so fail to highlight techniques that may be critical to effectiveness. Consequently, reviewers may be limited to relating effectiveness to the settings in which interventions occur (e.g., worksite interventions; Proper et al., 2003) rather than to their content. Unsurprisingly, reviewers have continued to call for more precise, standardized descriptions of intervention content (e.g., Neumann et al., 2002; Semaan et al., 2002).

In addition to promoting identification of intervention techniques associated with effectiveness and facilitating theory testing through meta-analyses, standardized descriptions of intervention content would facilitate the fidelity of intervention operationalization in replication studies and applications. The present variability in intervention descriptions may inhibit faithful adoption of effective interventions (e.g., by health promotion agencies), thereby curtailing their contribution to evidence-based practice (Bellg et al., 2004; Michie & Abraham, 2004; Nation et al., 2003). This is especially likely if, as is often the case, detailed intervention manuals and assessments of adherence to protocols are not available. For example, if a technique associated with effectiveness is not identifiable in available intervention descriptions, then adopting agencies are likely to omit this technique. If the intervention is then found to be ineffective, this may be wrongly attributed to delivery failures rather than to (unnoticed) deviations from the original content.

Comparable challenges have been addressed in identifying and defining empirically supported psychological treatments for psychological and psychiatric conditions. For example, a task force established by Division 13 of the American Psychological Association sought to identify psychological treatments that had been found to be effective for particular conditions with a view to developing treatment manuals with which to train practitioners (Chambless & Ollendick, 2001). A foundational first step for such work is the definition and identification of commonly used change techniques.

The Present Research

Having established the need for a common vocabulary in terms of which content components of behavior change interventions can be defined and described, we set ourselves two objectives: first, to develop and extend existing lists of content components into a set of distinct, theory-linked definitions of behavior change techniques (BCTs) and, second, to test whether these definitions could be used to reliably identify techniques included in interventions on the basis of intervention descriptions. If such a reliable taxonomy was developed, it could be used to identify specific techniques included in a range of behavior change interventions, thereby clarifying differences and similarities in intervention content (e.g., among those targeting similar behaviors in similar settings). This detailed characterization would facilitate exploration of the impact of content differences on effectiveness. In addition, a taxonomy of techniques would provide the foundation for standardized descriptions
of intervention content in published articles and manuals, which would enhance replication fidelity.

Method

Developing a Theory-Linked Taxonomy of BCTs

Researchers have categorized messages included in health promotion videos (e.g., Herek, Ganzales-Rivers, Fead, & Welton, 2001) and leaflets (Abraham, Southby, Quandte, Krahe, & van der Sluijs, 2007), listed principles of social influence (Cialdini, 1995), and categorized techniques used to implement changes in professional practice (Leeman, Baernholdt, & Sandelowski, 2007), but there are few available lists of discrete BCTs used in health behavior interventions. We identified three potentially useful lists. First, the transtheoretical model (Prochaska, DiClemente, & Norcross, 1992) specified 10 processes of behavior change, namely, consciousness raising, self-reevaluation, self-liberation, counterconditioning, stimulus control, reinforcement, helping relationships, dramatic relief, environmental reevaluation, and social liberation. Second, in a review of interventions designed to prevent weight gain, Hardeman, Griffin, Johnston, Kinmonth, and Wareham (2000) used 19 behavior change methods to describe intervention content, namely, specifying a behavioral goal, self-monitoring, agreeing on a contract, providing incentives contingent on behavior, using graded tasks, increasing skills, rehearsal of skills, stress management, planning, use of prompts or cues, changing the environment, social support or encouragement, persuasive communication, information about behavioral outcomes, use of personalized messages, modeling or demonstrating a behavior, setting homework, personal experiments to gather data, and experiential tasks to change motivation. Third, in a meta-analysis of interventions designed to increase physical activity, Conn, Valentine, and Harris (2002) identified 20 separate intervention components. These were behavioral modification, cognitive modification, prompting greater commitment, use of rewards, agreeing on a contract, considering advantages and disadvantages of a behavior, providing a supervised class at a set time, behavioral prescription, providing feedback about performance, fitness testing, goal setting, providing health education information, providing health risk appraisals, relapse prevention training, self-management, self-monitoring, providing opportunities to watch others performing the behavior, social support, stimulus control, and thought restructuring. These lists usefully identify specific BCTs that could be widely applied (e.g., use of rewards or self-monitoring), and it is reassuring to note the considerable overlap in identification of BCTs used to promote physical activity and healthy eating. However, in these lists, specific techniques are mixed with general theoretical approaches (e.g., behavioral modification), modes of delivery (e.g., use of supervised classes), intervention settings (e.g., homework), and behavior-specific procedures (e.g., fitness testing must presumably affect behavior change through the mechanism of feedback), thus cutting across the classes of characterization proposed by Davidson et al. (2003). We aimed to refine these lists into a set of theory-linked techniques that could be used to characterize intervention content across behavioral domains, separately from the other characteristics defined by Davidson et al. (2003).

A pilot study (Michie, Abraham & Jones, 2003) was conducted to identify techniques listed by Hardeman et al. (2000) that had been used in interventions included in a Cochrane review of rigorously evaluated interventions to promote physical activity (Hillsdon, Foster, Cavill, Crombie, & Naidoo, 2005). A standard definition of each BCT was developed, and intervention descriptions in primary studies were coded for inclusion or exclusion of defined BCTs. Discussion during this inductive process resulted in refinement of technique definitions and identification of additional techniques. Following conceptual and theoretical analyses of technique definitions, a five-page coding manual was written (and is available on request). This includes coding instructions on how to identify techniques in intervention descriptions and definitions of 26 BCTs. This manual can be used to ascertain whether an intervention description refers to any or all of the 26 defined BCTs. Abbreviated definitions are provided in Table 1. In addition to individual change techniques, the list includes four commonly applied sets of techniques, namely, relapse prevention (Technique 23, e.g., Marlatt & Donovan, 2005), stress management (Technique 24), motivational interviewing (Technique 25), and time management (Technique 26).

Our 26 defined BCTs reflect a variety of theoretical accounts of behavior change. Theories that specify the same process of behavior change (or mediating mechanisms) imply the same BCTs. For example, providing information about the consequences of an action may affect attitudes toward a target behavior. Thus, Technique 2 could be derived from theories such as the theory of reasoned action (Fishbein & Ajzen, 1975), the theory of planned behavior (Ajzen, 1991), social–cognitive theory (Bandura, 1997), and the information–motivation–behavioral skills model (Fisher & Fisher, 1992). Other theories represented by the 26 BCTs include control theory (Carver & Scheier, 1998) and related goal theories (e.g., Austin & Vancouver, 1996; Gollwitzer, 1999; Locke & Latham, 2002), as well as operant conditioning (Skinner, 1974), theories of social comparison (e.g., Festinger, 1954), theoretical accounts of the impact of social support on health-related behaviors (cf. Berkman & Syme, 1979), and explanations of the importance of stress management and relapse prevention to behavior change (e.g., Marlatt & Donovan, 2005). Further work on the translation of theories relevant to behavior change into specific change techniques would greatly facilitate theory testing and development (cf. Michie, Johnston, Francis, Hardeman, & Eccles, 2007).

Table 1 shows how we mapped defined BCTs onto these various theoretical frameworks and so illustrates how meta-analyses of intervention content and effectiveness could be used to test a variety of behavior change theories. For example, if interventions including Techniques 2–4 (provide information on consequences, provide information about others’ approval, and prompt intention formation) were found to be noticeably more effective in promoting a specified behavior than interventions that did not include these techniques, this would support the theory of reasoned action (and related theories); however, if such interventions were clearly ineffective, this would imply that the theory of reasoned action did not provide a useful basis for designing interventions to change the targeted behavior. Similarly, if interventions including Techniques 10–13 (specific goal setting, self-monitoring of behavior, use of prompts or cues, self-management, planning, use of prompts or cues, stimulus control, helping relationships, social support or encouragement) were found to be effective, this would constitute an endorsement of control theory, whereas ineffectiveness among such interventions would imply that control theory was not a useful foundation for intervention design in that domain. Such analyses could...
identify important mediators of behavior change and highlight theories likely to be most useful to intervention designers (Albarracin et al., 2005; Bartholomew, Parcel, Kok, & Gottlieb, 2006).

### Three Systematic Reviews

To assess whether these 26 defined BCTs can be used to characterize core components of behavior change interventions, we conducted a series of content analyses (Boyatzis, 1998; Weber, 1990) of published intervention descriptions using articles from three systematic reviews. We undertook two reviews using similar search strategies to identify evaluations of interventions designed to increase physical activity (PA) and healthy eating (HE) among adults living in the community with no known mental or physical health problems. In both these reviews, interventions providing only information or targeting specialized populations (e.g., pregnant women, athletes, or those engaged in dieting or fitness programs) were excluded, and only evaluations using experimental or quasi-experimental designs were included. Outcome measures were objective or validated self-report measures of behavior. A comprehensive search strategy was implemented, using Medline,
Results

Reliability of identification of 26 BCT definitions was tested. Disagreements occurred when one coder identified a technique in an intervention description and the other coder judged the technique to be absent. Agreements arose when both coders identified the same technique or judged it to be absent. Cohen's (1960) kappa statistic was used to assess interrater reliability for each of the 26 techniques for each of the three reviews, resulting in 78 reliability tests. These are presented in Table 2, with the percentage of agreements recorded for each technique definition.

In 7 of 78 tests, both coders agreed that there were no instances of a technique in any of the intervention descriptions included in one of the three reviews. Such judgments represent 100% agreement but prohibit calculation of kappas. None of the HE interventions used Techniques 9 (model or demonstrate the behavior), 17 (prompt practice), 21 (prompt identification as a role model), or 22 (prompt self-talk). Technique 3 (provide information about others' approval) was only used in intention/behavior interventions included in the third review, and none of the interventions in this review used Technique 25 (motivational interviewing).

Among the other 71 tests, kappas ranged from 0.1 to 1.0 with a mean and median value of 0.79 ($SD = 0.17$). Apart from two, all kappas were significant at $p < .01$. The percentage of disagreements per technique, per review, ranged from 0% to 38% with a mean of 7.3%, that is, an agreement rate of 93%. Landis and Koch (1977) suggested that kappa values of 0.4 indicate "moderate" interrater reliability, those of 0.6–0.79 indicate "substantial" reliability, and those above 0.8 are "outstanding." However, by convention, 0.7 is often regarded as indicative of acceptable or good interrater reliability. Of the 71 tests, 51 (72%) produced kappas of more than 0.7 and only 10% ($N = 7$) fell below 0.6. Of these, two fell below 0.40. These results indicate that independent coders can use our coding manual to reliably identify the same defined techniques in published intervention descriptions.

Coding was found to be reliable for each review independently. Modal and mean kappa values and average percentage of disagreements were, respectively, 0.79, 0.80, and 8.2% for the PA review; 0.81, 0.82, and 6.7% for the HE review; and 0.75, 0.74, and 7.0% for the third, general intention/behavior review. No significant differences between kappa distributions were found across reviews or between review pairs (Mann–Whitney $U$s = 245.00, $p = .70$, for PA vs. HE; 262.00, $p = .33$, for PA vs. general; and 202.50,
suggesting that technique definitions can be equally well applied to interventions with different behavioral targets and by psychologists who had and had not been involved in developing the technique taxonomy.

Good reliability was not demonstrated for 3 of the 26 technique definitions. Technique 6 (provide general encouragement) generated two of the lowest kappas (0.46 and 0.39). Technique 17 (teach to use prompts) was rarely observed, and although the authors agreed that no instances were observed in the PA and HE reviews, poor reliability was observed between Charles Abraham and the postdoctoral coder in applying this definition to studies in the third review. Finally, kappas for Technique 2 (provide information on consequences) fell below 0.7 (i.e., 0.53, 0.68, and 0.61) in all three reviews, indicating only moderate intercoder reliability.

Only 13 manuals were coded, and missing data prohibited calculation of kappas for many techniques, so only percentage of agreement is presented in Table 2. For each technique, 1 disagreement (out of 13) resulted in 92% agreement, 2 disagreements in 85% agreement, and so forth. Agreement rates ranged from 62% (5 disagreements) to 100%, with a mean and mode of 85% agreement. Only 4 of 26 technique definitions resulted in greater than 2 disagreements, namely, prompt intention formation, use follow-up prompts, prompt identification as a role model (all 69% agreement), and plan social support/social change (62% agreement).

Finally, comparisons of BCTs identified (by the same coder) in each of the 13 manuals and a published evaluation of the same intervention generated a correspondence rate of 74%, ranging from 31% to 100% across techniques. Moreover, in the 73% of in-
stances when inclusion/exclusion of a technique was judged differently when examining an article compared with the matching manual, this was due to identification of the technique in the manual but not in the article. On average, 9.07 techniques were identified in manuals, but only 6.07 techniques were identified in articles, paired \( r(25) = 2.4, p = .033, \) two-tailed.

**Discussion**

The present research is the first systematic analysis that identifies potentially effective techniques included in behavior change interventions across behavioral domains. We have defined a set of theory-linked BCTs that can be used to characterize and differentiate between intervention content and so facilitate communication between intervention designers, adopters, and reviewers. We have shown that psychologists can reliably judge inclusion and exclusion of these techniques from published articles and intervention manuals and have illustrated how inclusion of these techniques can be linked to theory testing. This work demonstrates the feasibility of characterizing interventions in terms of common BCTs and provides a model for standardizing published descriptions of intervention content in terms of defined techniques that can be linked to mediating processes implied by theory. Standard categorization of intervention content could facilitate theoretical development by clarifying (e.g., through meta-analyses) which techniques, or combinations of techniques, are associated with effective behavior change within and across behavioral domains. Standardization would also facilitate the design of effective behavior change interventions and accurate replication of intervention content.

Reliability in identifying BCTs from 195 descriptions in published articles was good for 23 of the 26 defined techniques, indicating that currently available intervention descriptions can be readily and reliably profiled in terms of combinations of discrete techniques. Technique 6 (provide general encouragement) was included to describe the use of rewards and encouragement that were not contingent on behavioral performance. However, the definition appears to be too broad to allow identification of clearly equivalent behavior change procedures in interventions. Technique 15 (teach to use prompts or cues) was rarely observed, showed poor reliability between Charles Abraham and an independent psychologist, and requires further consideration or redefinition. Technique 2 (provide information on consequences) showed moderate intercoder reliability, and further clarification of this technique definition and retest reliability is required. Thus, 23 definitions represent discrete BCTs that psychologists can be easily trained to identify.

The same coding instructions were used by two psychologists not involved in development of the taxonomy to categorize BCTs in a small sample of detailed intervention manuals from a separate behavioral domain. Good reliability was observed (85%), suggesting that our instructions and definitions can be applied reliably to these much more detailed descriptions of intervention content after only brief training. Further testing will clarify whether elaboration of certain BCT definitions (e.g., plan social support/social change) is required to fully adapt our coding instructions for use with intervention manuals.

All interventions included in the PA and HE reviews were self-management interventions designed for adults living in the community without specialized histories in relation to the target behaviors. Yet these interventions varied markedly in their content. After resolving disagreements between coders through discussion of definitions, our categorization showed that the 29 PA interventions included between 1 and 14 of the 26 defined techniques (with a mean of 8 techniques per intervention), and the 22 HE interventions included between 1 and 13 techniques (with a mean of 6). Some techniques were commonly included in both types of interventions. For example, Technique 2, provide information about consequences, was included in 19 PA interventions (65%) and 10 HE interventions (45%). Other frequently included techniques were Technique 4, prompt intention formation (18 PA = 62%, 16 HE = 73%), and Technique 5, prompt barrier identification (15 PA = 52%, 10 HE = 45%). These data highlight the complexity of intervention designs and remind us that even interventions designed to change the same behavior among very similar target populations can differ markedly in their content. This further emphasizes the need to precisely categorize intervention content and so unmask such content differences.

Only two thirds of the techniques identified in intervention manuals were also identified in descriptions of the same interventions in journal articles by a trained coder previously found to apply the technique definitions in a reliable manner. Although larger samples are required to confirm this finding, the data indicate that pressure on journal space may curtail intervention descriptions in published articles. This may threaten replication fidelity because detailed manuals are not always accessible and are not presented in standardized formats. It also means that reviewers synthesizing findings on the basis of published evaluations may not be able to accurately and comprehensively identify intervention content.

The taxonomy presented here is not exhaustive. Other techniques with a range of application across behavioral domains could be defined, for example, use of fear appeals (Albarracin et al., 2005), and some BCTs may be especially important to one behavioral domain and not others. Nonetheless, this taxonomy provides a foundational first step toward standardization and accuracy of descriptions of behavior change intervention content, as called for by CONSORT. BCTs may be operationalized differently in different interventions and detailed procedures and materials should be available in manuals so that replication is possible. Intervention designers may also combine and modify techniques so that new definitions need to be established. However, identification of such variations and combinations depends on having initially established common definitions of techniques, just as the periodic table is critical to understanding molecular structure and chemical interactions.

In the longer term, the main implication of this research is not that existing intervention descriptions can be accurately characterized as distinct combinations of BCTs. Rather, by developing taxonomies of defined theory-linked BCTs, future intervention descriptions can include lists of consensually understood techniques, thereby establishing a common terminology in terms of which intervention content can be understood and compared across interventions, behavioral domains, and research teams. This would clarify links between inclusion of techniques and theory-specified change processes, links that are not always clear in published intervention descriptions at present (Bartholomew et al., 2006; Michie & Abraham, 2004). Detailed intervention manuals could then provide information on the operationalization of the BCTs.
listed in standardized published descriptions, including specific materials. Audience characteristics are crucial to effectiveness (Albarracin et al., 2005; Duranti, Albarracin, Mitchell, Earl, & Gillette, 2006), and mode of delivery, type of materials, fidelity of implementation in relation to manual specifications, and the extent to which interventions are tailored to individuals or groups are all potentially important determinants of effectiveness (Davidson et al., 2003). However, specification of content is also critical, and at present, inadequate specification leads to uncertainty regarding when, and in what respects, differences in content affect effectiveness. This slows preparation of evidence-based guidelines for intervention designers and increases the risk that ineffective or unproven interventions may be adopted (cf. Nicassio, Meyerowitz, & Kerm, 2004). Developing standardized theory-linked taxonomies of BCTs is foundational to resolving the current variability in intervention description.

In conclusion, the present work provides a crucial first step toward establishing a common language in terms of which intervention designers, reviewers, and practitioners can clearly specify the content of behavior change interventions across domains and so clarify content differences between them. Adoption of such a taxonomy of BCTs could also facilitate theory testing through meta-analytic review of intervention effectiveness. In combination with this work, three related steps could accelerate progress in the science of behavior change. First, a supplement to the CONSORT and TREND statements could require authors to list BCTs included in their interventions, specifying links between included techniques and theoretical frameworks used to conceptualize potential change mechanisms. Second, authors could be required to describe all intervention features listed by Davidson et al. (2003). Third, standardization intervention manuals should be prepared for all published intervention evaluations (e.g., to be posted on journal Web sites) so that researchers and practitioners can discover how techniques constituting the content design of interventions were operationalized in practice.

References


