# Additional file 2:

#### **Coder Manual for Identification of Reporting Elements in Reports**

of Group-Based Behaviour-Change Interventions (GB-BCIs)

As specified in Borek et al.'s A Checklist to Improve Reporting of Group-Based Behaviour-Change Interventions

# Introduction

The checklist for group-based behaviour-change interventions (GB-BCIs) can be used both as (1) guidance for reporting of group-based interventions, and (2) as a tool for assessing the quality of reporting in published articles. This coder manual includes guidelines for coding when using the checklist to assess reporting quality.

Our intention is not to generate total scores quantifying the quality of articles. We advise making cautious judgments about the overall quality of reports based on the calculations of 'scores' because the reporting elements have unequal weights.

When using the checklist as an assessment tool, it is important to remember that even when an element is not reported, it may have been delivered in the intervention; the omission may be in reporting rather than delivery.

The checklist does not allow comparisons to be made between articles in the extent and quality of descriptions, since it only indicates whether a particular reporting element is present or absent. For example, in one article the authors might only state that the facilitators were trained in delivering the manual-based intervention whereas in another the authors might provide a more extended description of the content, duration and who provided the training etc. In both cases, however, the reporting element '*Facilitators' training in intervention delivery*' would simply be coded as '*present*'. Hence, to assess quality of intervention descriptions requires a judgment about whether the level of description is sufficient to allow replication, as well as the identification of simple presence vs absence of the elements of description suggested here.

We propose that the checklist is used as a basis for identifying strengths and deficiencies in descriptions of group-based interventions. It can be used in systematic reviews to compare all included articles in a systematic and reliable way, to identify major omissions and to enable the assessment of the overall quality of reporting of selected GB-BCIs. It can also be used to identify examples of articles in which group interventions were reported particularly well.

To ensure consistent use of the relevant terms, we refer to (a) *participants* as people receiving the intervention (in the literature also referred to as 'patients' or 'group members'), (b) *facilitators* as people delivering group sessions in the intervention (also referred to as 'group leaders'), (c) *groups* as groups of two or more participants, and (d) (*group*) sessions as meetings of participants with at least one facilitator.

Below are the coding guidelines that we developed in the process of testing and revising the checklist, and that should facilitate reliable coding.

### **General coding guidelines**

- 1. Never infer that the element is reported. Unless you can identify the text that provides an unambiguous description you should not code reporting elements as 'present'. For example, even though it might be possible to infer that the participants were randomly allocated to the groups, or that the group composition was a representative sample of the intervention participants, you should not code it as 'present' unless it is clearly stated in the text.
- 2. Only code the information that refers to the intervention. Always ensure that text relating to the checklist's reporting elements refers to the intervention being assessed. For example, there might be a discussion about theories of behaviour change in the introduction to the article but this should not be coded unless the description explains that these theories shaped the intervention.
- 3. **Apply the checklist to each group-based intervention separately.** Where more than one different group-based intervention is delivered in a trial code the information that refers to each group-based intervention separately. However, if the differences between group-based interventions relate to the content only (e.g., different dietary recommendations or change techniques used) and not to the format or structure of the groups (e.g., number or frequency of sessions, delivery style) then the interventions can be coded as one.
- 4. **Code only clear and meaningful descriptions.** Only descriptions which could be used to compare interventions, for example in extracting data for a systematic review, or in replicating the intervention should be coded as 'present'. The question being asked is: would this description be sufficient and meaningful in data extraction for a systematic review? Overly generic or ambiguous descriptions (e.g., facilitators described as 'staff

members', intervention as 'theoretically-based') that leave the reader with little understanding of how the intervention was actually designed or delivered should not be coded.

### Other practical coding tips

- 5. Familiarize yourself with the checklist by reading and re-reading the checklist with descriptions and examples. It is also useful to code a few articles initially, check the coding with another independent coder and discuss any discrepancies and uncertainties trying to identify why they occurred (e.g., misunderstanding or differences in interpretation of coding instructions, information missed in reading) and addressing these issues if possible (e.g., coming to an agreed interpretation, re-reading coding instructions, reading articles more carefully).
- 6. To minimize the risk of making inferences, the checklist reporting elements should be linked to particular fragments of text. This can be done by underlying the text and writing the name or number of the reporting element in the margin or by highlighting the text and inserting comments linked to the text (e.g. in a Word or pdf document). Software for qualitative coding can be also used effectively with the advantage of having all the references to the same reporting element at hand should this be required, for example, in writing up findings from this exercise as part of a review.
- 7. It is important to decide whether or not a reporting element is present or absent but when one feels that the decision is uncertain this could be qualified by inserting a question mark ('?'), or another agreed symbol. This highlights elements that warrant special discussion with another coder. It may also be useful to identify and highlight particularly good descriptions by inserting a plus ('+'), or another agreed symbol, next to very good and comprehensive descriptions.

- 8. Coding of the same fragment of text in relation to more than one reporting element may occur (e.g., writing action plans should be coded both as activities and change techniques) but should be avoided as much as possible. Careful consideration should therefore be given as to whether it is justified and necessary to code something in relation to more than one reporting element.
- 9. Prior to coding a decision should be made as to whether supplemental information referenced in the articles being coded should be included in the assessment of the reporting quality or not. For example, some might decide that if there are references to relevant details and the sources are publicly available (i.e., available online as supplementary information or included in earlier publications), the coder should include them in the assessment of the quality of reporting.
- 10. Although most of the reporting elements should appear in the methods section of an article, it is recommended that the full article is reviewed in the process of coding. This is to ensure that reporting elements which are described in other parts of the article are also identified. For example, theoretical background might be discussed in the introduction, group size and room setting might be included in the results sections etc.

Reporting **Description & Coding Examples** Elements Suggestions 1. Intervention Describes the source Reference to another program on which the intervention was based; description of the source or (origin) and/or methods used for developing the process of developing an original development methods intervention. intervention, e.g., including intervention mapping, PRECEDE-PROCEED model, A brief reference or findings from interviews or focus groups etc. simple indication is sufficient. "The Weight-Wise intervention was adapted from the Diabetes Prevention Program (Diabetes Prevention Program Research Group, 2002) and PREMIER lifestyle interventions (Svetkey et al., 2003)."<sup>1: 391</sup> "We modified the previously developed DPP intervention to be appropriate for Latino individuals at risk for type 2 diabetes. Focus groups [16] were conducted to assess unique knowledge gaps regarding diabetes prevention, attitudes toward prevention, and challenges to weight loss in this population.

**Table 1.** Coder guidelines for identification of reporting elements of group-based behaviourchange interventions.

		P	Additional focus groups were used to pre-test
		t	he acceptability of the intervention materials
		(	e.g., soap opera, goal sheets)." <sup>2: 337</sup>
2.	General	Reports the type of setting	A community setting, school, university,
	setting	where the group sessions	worksite, health care practice, hospital etc.
		were delivered.	
			"Sessions were delivered at the central
		Code references to the	hospital site where the nutrition clinic was
		setting where group	<i>located.</i> " <sup>3: 109</sup>
		sessions took place and not	
		the study setting where, for	"Most study activities (i.e., screening,
		example, the measurements	recruitment, group intervention sessions,
		were taken.	and follow-up assessments) were held at the
			Lawrence Senior Center, a centrally
		A simple but clear	located social service facility." <sup>2: 336</sup>
		indication is sufficient.	
3.	Venue	Describes the set up or	Sitting arrangements (circle, semi-circle);
	characteristics	configuration of the room	the type or size of the room (community
		(or other venue) where the	hall, classroom, lecture theatre); purposeful
		group meetings took place.	manipulations to the room setting to
			facilitate interaction or learning etc.
		A brief description is	
		sufficient.	"Tables might interfere with the open
			group set- up. Space restriction made
			provision of tables impractical." <sup>3: 116</sup>

			"The program was administered at Osaka
			Prefecture University and City Health
			Center using classrooms for the groups and
			also individual consultations." <sup>3:83</sup>
4.	Total number	The total number of group	"The weight loss intervention consisted of
	of group	sessions in the program is	22 group sessions led by nutrition and
	sessions	reported or it is possible for	behavioral counsellors, over 6
		this to be calculated.	<i>months.</i> " <sup>4:87</sup>
5.	Length of	Reports the length of group	"The duration of the first group session was
	group sessions	sessions (average and/or	1.5 hours and the remaining group sessions
		range).	were 1 hour." <sup>2: 337</sup>
6.	Frequency of	Reports the frequency of	Weekly, monthly, X sessions regularly
	group sessions	group sessions, i.e., how	delivered over Y months etc.
		often they were delivered.	
			"Each weight management group
		Code only specific	(maximum 12 men) meets weekly over 3
		(quantifiable) information	months for twelve 60-minute evening
		and not vague descriptions,	sessions." <sup>5: 72</sup>
		such as, "as needed".	
7.	Duration of	Reports the duration of the	"Participants attended closed group
	the	intervention.	sessions weekly during the intensive phase
	intervention		in the first six months. The less-intensive
		Code information in	phase consisted of biweekly meetings for
		relation to the period of	months 7–9 and monthly meetings for
1			

		time over which the group	<i>months</i> 10–12. " <sup>6: 151</sup>
		sessions were delivered and	
		not the duration of the study	"The health education intervention was
		(up to the last follow-up	received during the first 4 weeks." <sup>7: 426</sup>
		measurement).	
8.	Change	Describes how the	Health belief model, theory of planned
	mechanisms	intervention was intended	behaviour, empowerment, self-efficacy etc.
	or theories of	to work by identifying	
	change	change mechanisms or	"The intervention approach, based on
		under-pinning theories of	social cognitive theory, behavioral self-
		behaviour change.	management techniques, trans-theoretical,
			or stages-of-change, models and motivation
		It is not sufficient to	enhancement [27–31] was designed to be
		generally review theories or	supportive, participant-centered and
		use a theory to explain	interactive." <sup>4:88</sup>
		change processes post-hoc	
		as part of an evaluation of	
		the intervention. Code only	
		descriptions of theories or	
		mechanisms of change that	
		are directly linked to the	
		intervention, i.e., that are	
		described as being used as	
		a basis for the intervention.	
9.	Change	Describes the techniques	Encourage self-disclosure, provide

# techniques used in group sessions to information about behaviour - health link, prompt change. These may prompt goal setting and goal review, be derived from the provide encouragement, provide feedback mechanisms or theories of on performance etc. change on which the "The intervention content utilized BCTs intervention was based (see above), and may or may not [behaviour change techniques] found to be use established taxonomies associated with intervention effectiveness of behaviour change (Table 1)... For example, the BCTs of techniques e.g., 8, 9. intention formation and behavioral self-

Code only techniques that are explicitly named, i.e., can be linked to particular fragments of text. (Table 1)... For example, the BCTs of intention formation and behavioral selfmonitoring were presented initially, followed by specific goal setting and barrier identification in subsequent sessions – concluding with relapse prevention (Table 1)."<sup>10: 109</sup>

This may also include sets of techniques, such as motivational interviewing, and techniques that do not target behaviours directly, e.g., stress management. "Guided small-group activities followed the check-in and fostered problem solving, social support and relapse prevention planning. Group activities included calorie awareness activities, record-keeping skill development, nutrition and physical activity demonstrations and goal-setting modules. At the end of each session, each participant developed a plan for the upcoming week by

		setting food and exercise goals, and
		a specific action plan for achieving each
		goal." <sup>4:88</sup>
10. Session	Describes the content of the	Health problems related to obesity, process
content	sessions in terms of themes	of behaviour change, healthy lifestyle,
	or topics covered; i.e., what	dietary and physical activity
	the sessions were about.	recommendations etc.
	This can be described either	"Table 1 provides detailed information on
	generally or separately for	session titles, content focus, and learning
	each session.	basis of the DPP-adapted curriculum
		<i>[20].</i> " <sup>11: 308-309</sup>
	Note that the description	
	should be related to the	"Intervention content was topic driven
	thematic content of the	(nutrition, physical activity, psychology)
	group sessions and not just	and theory driven (problem solving,
	to the overall content or	stimulus control, managing high-risk
	targets of the intervention.	situations, skill building, reinforcement,
		self-monitoring, developing social support,
		identifying pros/cons, and self-efficacy)
		[16] Topics included lifestyle change,
		portion estimation, finding the fat, meeting
		dietary needs according to MyPyramid,
		activity adoption and maintenance,
		progressive relaxation and deep breathing

		for stress management, supportive
		environments, emotional eating, social
		support, and maintaining behavior
		<i>change</i> . " <sup>12: S53-S54</sup>
11. Sequencing of	Indicates whether there is a	Indicates that the content of the session is
sessions	logical (sequential)	progressive or repetitive; describes the
	progression of session	latter sessions as based on or related to the
	content or, alternatively,	content covered in the earlier sessions etc.
	that the content of all	
	sessions is the same, i.e.,	"The first session covered diabetes-related
	a repetitive , or "rolling",	definitions and the importance of physical
	program with no particular	activity. Subsequent sessions promoted
	start or end point.	eating more vegetables and fruits and less
		saturated fat and added sugar, setting
	Note that it can be assumed	goals, getting social support for behavior
	that the content is	change, and maintaining behavior
	sequential (code as	<i>change.</i> " <sup>13: 3</sup>
	'present') if the topics	
	and/or content are described	"The content was sequential, with each
	separately for each session,	session building on the foundation achieved
	e.g., in a table.	in the previous sessions." <sup>3: 84</sup>
12. Participants'	Reports what materials or	Participant's manual, information sheets,
materials	tools the participants used	food and physical activity diaries,
	during and outside the	pedometers, weighing scales or other
	group sessions.	equipment, newsletters etc.

	This refers to the materials	"Two educational booklets, one was on
	that were provided for the	menopause and CVD, the second one was
	participants by the	on diet were prepared according to the
	intervention staff.	updated American guideline for prevention
		of CVD in sedentary postmenopausal
	Note that a generic	women. Participants in the diet group
	description, such as	received these educational booklets." <sup>14: 523</sup>
	'intervention materials',	
	is insufficient.	"all participants received GLB
		participant handouts, weekly self-
		monitoring booklets, a fat- and calorie-
		tracking book, and a pedometer." <sup>15: 662</sup>
13. Activities	Describes what the	Discussing pre-sessional reading, small
during the	participants and the	group learning activities, discussions,
sessions	facilitators did during group	writing and reviewing action plans, group
	sessions, i.e., what	exercise, cooking demonstrations, lectures
	happened during the	or presentations from the facilitators etc.
	sessions.	
		"Each session began with a check-in
	Note that these activities	focused on accomplishments and barriers
	might overlap with the	with regard to each participant's individual
	change techniques (see	weekly goals. Guided small-group activities
	above) but may also include	followed the check-in and fostered problem
	descriptions of how change	solving, social support and relapse

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techniques (e.g., providing information, providing social support, prompting action planning) were used in the sessions. prevention planning. Group activities included calorie awareness activities, record-keeping skill development, nutrition and physical activity demonstrations and goal-setting modules. At the end of each session, each participant developed a plan for the upcoming week by setting food and exercise goals, and a specific action plan for achieving each goal... The intervention leaders reviewed the diaries each week and provided encouragement and support for keeping records. Participants were weighed at each group session."<sup>4: 88</sup>

"Each class consisted of lectures... presented by either a physician... or registered dietitians and physical trainers, while some classes... involved group support education, group dynamics and individual consultations. Dietary skills taught by dietitians included portion control, eating order (vegetables first and carbohydrates last) and glycemic index, dental care by dentists, and practical dayto-day exercises by physical trainers... In

		particular, the importance of diet self-
		management was emphasized during two
		cooking classes held in the first and fifth
		months of the education period meal
		planning or exercise plans and were
		expressed and discussed with group
		members during every class. Educators of
		each group wrote and gave feedback during
		all the classes, after monitoring the diaries
		of each participant" <sup>3: 83-84</sup>
14. Methods for	Reports methods used to	Session recordings, observations, checklists
checking	check the fidelity of	completed after the sessions etc.
fidelity of	intervention delivery, i.e.,	
delivery	methods used to check if	"Group leaders met together weekly to
	the sessions were delivered	discuss the progress of each group and to
	as designed.	assure the topics were covered in similar
		ways. To ensure that leaders conducted
	Note that the methods for	groups according to the session outlines,
	checking fidelity of delivery	we used a system of random observations.
	(e.g., session recordings,	Observers (lead interventionist, principal
	observations) may be	investigator, co- investigators and other
	different to methods for	outside experts) completed an observation
	ensuring fidelity (e.g.,	checklist and discussed any findings with
	facilitators' training,	the group leader in a debrief session. The
	manual). Only code	principal investigator regularly reviewed

	descriptions of methods	the observation checklists." <sup>4:88</sup>
	used for checking the	
	fidelity of group delivery.	"For process evaluation, CSREES
		educators completed a brief weekly
		questionnaire about attendance, participant
		engagement with the classes, and ability to
		carry out the intervention as designed. In
		addition, study personnel observed 1 class
		at each site to assess fidelity to the
		<i>intervention.</i> " <sup>16: 1273</sup>
15. Group	Provides information on the	Single-gendered groups, groups with
composition	composition of the groups	people of similar ethnicity or age, groups
	in the intervention, i.e., who	representative of intervention participants,
	were the participants in the	groups with participants' 'significant
	groups or whether there	others'.
	were any differences in the	
	participants' characteristics	"Same-sex groups were requested by about
	between groups.	20% of participants Given the central
		role of the family, we actively sought family
	This is related to the	support by inviting family members to
	characteristics of the	attend all sessions and activities
	participants in the groups	Participants who agreed to the lifestyle
	and not just to the general	intervention were allocated to groups of
	characteristics of the study	their choice; either mixed gender or all
	participants.	<i>female</i> . " <sup>11: 309-310</sup>

16. Methods for	Describes methods used to	Participants could select a group to attend;
group	allocate the participants to	participants were purposefully allocated to
allocation	different groups.	different groups by the intervention staff;
		participants were allocated to groups as
		they were recruited (opportunistically).
		"Patients providing written consent were
		referred to the research team to schedule
		attendance at the first intervention
		session." <sup>3: 109</sup>
		"The 34 eligible and interested participants
		each selected one of two weekday evening
		meeting times for which they were
		available, and then the group meeting times
		were cluster randomized to either the
		Catholic-Tailored ( $n = 17$ ) or the Standard
		Behavioral ( $n = 17$ ) condition. " <sup>17: 383</sup>
17. Continuity of	Indicates whether there was	Closed / open group sessions; participants
participants'	continuity in participants'	could attend group meetings at different
group	membership in a group	times/days etc.
membership	throughout the program or	
	if participants could attend	"Participants attended closed group
	different groups.	sessions weekly during the intensive phase

		<i>in the first six months.</i> " <sup>6: 153</sup>
18. Group size	Reports the number of	"Each group (20–25 participants) met
	participants per group	weekly for 90min." <sup>4: 88</sup>
	(average and/or range).	
		"Grown size was set at eight to ten
		Group size was set at eight to ten
	Only code quantifiable	members in order that the sessions were
	information, i.e., the	manageable without diminishing the
	number of participants	opportunity for expression and
	(average/range), and do not	individualization within each group." <sup>18:83</sup>
	code general descriptions,	
	such as 'small group'.	
19. Number of	Reports the number of	"Sessions lasted 90 min and were delivered
facilitators	facilitators delivering the	by one researcher with 7 years of
	sessions, i.e., how many	<i>experience</i> " <sup>19:3</sup>
	facilitators delivered each	
	of the sessions.	
	Note that this refers to the	
	number of facilitators per	
	session not the overall	
	such as of fosilitators in the	
	number of facilitators in the	
	intervention (i.e., team	
	size).	
20. Continuity of	Indicates whether there was	"The trained study nurse facilitated all
facilitators'	continuity in facilitator's	core-curriculum sessions." <sup>11: 310</sup>

group	assignment to a group	
assignment	throughout the intervention,	"For each phase of the intervention, the
	i.e., if the same or different	same registered dietitian and clinical
	facilitator(s) delivered the	psychologist were in charge of the group."
	sessions to the same group	20: 959
	of participants.	
21. Facilitators'	Reports facilitators'	Health care professionals, dieticians,
professional	professional background,	nutritionists, physical activity trainers,
background	status as a non-professional	psychologists, health educators,
	or qualifications.	researchers, lay leaders, community
		members, peer educators etc.
	Only code specific	
	references to the profession	"Each site is an American Diabetes
	or other status (e.g. as a lay	Association–recognized DSME program,
	person, peer), including	with nurse and dietitian diabetes educators
	relevant qualifications or	who participated in this project. All but one
	specializations, and do not	of the educators was a certified diabetes
	code generic descriptions,	<i>educator</i> ." <sup>15: 661</sup>
	such as 'staff', 'providers',	
	'experienced / trained in	"health educators from the study staff
	delivering the intervention'.	taught the curriculum with the assistance
		of church lay leaders." <sup>21:71</sup>
22. Facilitators'	Reports relevant personal	"A female research nurse…" <sup>3: 209</sup>
personal	characteristics of the	
characteristics	facilitators, i.e., who they	"All study-related procedures were carried

were in terms of age,	out by trained bilingual personnel who
gender, ethnic or cultural	were racially and ethnically identified with
background, education	<i>the community.</i> " <sup>11: 308</sup>
level, socio-economic status	
etc.	
Reports what training	"The nurse received training (1.5 days in
facilitators were provided	duration) on how to deliver the manual-
with in delivering the	based intervention." <sup>3: 109</sup>
intervention.	
	"The PREDIMED food and nutrition
A simple and clear	professionals Each was a registered
indication is sufficient.	dietitian (RD) trained and certified to
	deliver the PREDIMED intervention
	<i>protocol.</i> " <sup>22: 1136</sup>
Reports what training the	"One component of the [training]
facilitators were provided	workshop focuses on leading groups"
with in group facilitation	15: 661
methods, i.e., how to work	
with and facilitate groups.	"training in motivational counseling and
	group management skills. The training
A simple and clear	included role-playing and mock
indication is sufficient.	intervention sessions and was led by
indication is sufficient. Also code references to	intervention sessions and was led by a behavioral psychologist and a senior
indication is sufficient. Also code references to training of facilitators in	intervention sessions and was led by a behavioral psychologist and a senior registered dietitian, who also provided
	were in terms of age, gender, ethnic or cultural background, education level, socio-economic status etc. Reports what training facilitators were provided with in delivering the intervention. A simple and clear indication is sufficient. Reports what training the facilitators were provided with in group facilitation methods, i.e., how to work with and facilitate groups. A simple and clear

	interpersonal or counselling	
	skills, e.g., motivational	
	interviewing / counselling.	
25. Facilitators'	Reports whether the	Intervention manual, script for the sessions,
materials	facilitators were provided	discussion guides, presentation slides etc.
	with materials and/or	
	written instructions to be	"Group leaders followed standardized
	used to guide delivery of	session outlines." <sup>4:88</sup>
	the sessions.	
		"the educators were provided with
	This relates to the materials	a taped DVD series of the GLB to allow for
	or written instructions	review before delivery of the program as
	designed specifically for the	needed." <sup>15: 661</sup>
	facilitators, and other than	
	verbal instructions included	
	in the training in	
	intervention delivery (see	
	above) or in the general	
	intervention protocol.	
26. Intended	Describes the intended style	Didactic sessions, lectures, presentation-
facilitation	of, or approach for, the	based, interactive sessions, discussion-
style	session delivery and group	based, collaborative, participant-centered,
	facilitation.	supportive, encouraging; descriptions of
		group processes and group atmosphere; use
	This refers to any	of humor to facilitate positive group

descriptions indicating atmosphere etc. whether the sessions were interactive or didactic, to "The intervention approach ... was what extent individual designed to be supportive, participantcentered and interactive." 4:88 tailoring of ideas or discussion should be incorporated, and/or what "Finally, the use of humor is perhaps most techniques were used to valuable in forging relationships between achieve a particular group members [41] and allowing the men facilitation style or group to raise sensitive issues that they might otherwise find difficult or embarrassing to atmosphere. discuss [42,43]." <sup>5:73</sup> A brief description is sufficient.

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