

**To evaluate the psychometric properties of a tool used to assess a new model of brief behaviour change counselling in the South African context**

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## **Abstract**

### **Introduction**

Brief behaviour change counselling (BBCC) in primary care can address many of the behavioural risk factors underlying the burden of disease such as unhealthy eating, physical inactivity, tobacco smoking and alcohol use. A new model combined the 5 As (Ask, Alert, Assess, Assist, Arrange) with a guiding style of communication. Training and evaluation of this new model requires a valid and reliable assessment tool.

### **Aim**

To evaluate the validity and reliability of a tool used to assess a new model of BBCC in the Western Cape, South Africa.

### **Methods**

Exploratory sequential mixed methods included initial qualitative feedback from an expert panel to assess validity, followed by quantitative analysis of internal consistency, inter- and intra- rater reliability. Six raters assessed 33 randomly selected audiotapes from a repository of 123 tapes of BBCC at baseline and 1 month later.

### **Results**

Changes to the existing tool involved, item changes, added items, as well as grammatical and layout changes. The 'ABC tool' had good overall internal consistency (Cronbach alpha 0.955), inter-rater (Intra-class correlation (ICC) 0.813 at follow up) and intra-rater reliability (Pearson's correlation 0.899 and  $p < 0.001$ ). Sub-scores for the Assist (ICC 0.784) and Arrange (ICC 0.704) stages had lower inter-rater reliability than the sub-scores for Ask (ICC 0.920), Alert (ICC 0.925) and Assess (ICC 0.931).

### **Conclusion**

The ABC tool is sufficiently reliable for the assessment of BBCC in clinical settings or research studies. Minor revisions may further improve the reliability of the tool, particularly for the sub-scores measuring Assist and Arrange.

## Declaration

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## Introduction

Lifestyle is one of the main determinants of people's health.[1] It is vital to find effective disease prevention and health promoting strategies that enable behaviour change in patients.[1] Behavioural risk factors associated with non-communicable diseases (NCD) have been clearly described globally and have been confirmed in the South African (SA) context.[2]

Thirty eight million people die each year around the world from NCDs and 47% of these deaths occur in low and middle income countries (LMIC), such as SA.[3] The burden of disease from NCDs in LMIC is increasing worldwide and the rise in morbidity and mortality has implications for the delivery of on-going or chronic care by health services.[3]

Echoing the World Health Organization's recommendations, the South African Department of Health has a strategic plan to address NCDs with cost-effective and feasible interventions.[3,4] Brief behaviour change counselling (BBCC) has been described as one of these interventions and is advised for the four major behavioural risk factors for NCDs seen in primary care; namely tobacco smoking, excessive alcohol use, unhealthy diet and physical inactivity.[3,4] Training primary care practitioners (PCPs) in communication skills needed for BBCC is essential for the prevention and control of NCDs at primary care level.[3,4]

Current health services in SA are not well equipped to deliver BBCC and little research has been done on the capacity of PCPs to adequately deliver BBCC.[5] There is a significant gap regarding BBCC in the under- and post-graduate training of nurses and doctors in the Western Cape.[5,6] "There is a focus on theory rather than modelling and practice, as well as a lack of both formative and summative assessment".[5]

Most of the research that evaluates training interventions for PCPs to deliver BBCC is from high income countries, with only a few local studies.[6] Recent situational analysis in the Western Cape showed that PCPs have inadequate training as well as a lack of confidence and skills to deliver BBCC.[5] Therefore a need was identified to train doctors and nurses in effective BBCC, using the 5 As (Ask, Alert, Assess, Assist, Arrange) with a guiding style, in a new model of BBCC developed in SA.[5,6,7,8] Training in this model of BBCC has been shown to change clinical practice in primary care.[8] This model of BBCC has been shown to be effective in smoking cessation amongst pregnant women in our SA context.[9]

The 5 As approach is one of several evidence-based approaches to BBCC.[10] It is a user friendly and feasible approach.[11] Although tools have been developed to assess the 5 As elsewhere, they are not entirely suitable for the new model of BBCC developed in SA.[8,10,12,13] In particular they do not assess the guiding style adequately and there is a need to validate the tools.

The guiding style that was integrated into the model of BBCC in South Africa was derived from motivational interviewing (MI). MI is an approach to behaviour change counselling with a strong evidence base in the field of addictions.[14] MI however usually requires longer, multiple sessions and is not designed as a brief intervention for the primary care consultation. MI as a style of communication is characterised by collaboration, empathy, evocation, respect for patient autonomy and a clear focus or direction.[15] Assessment tools include the Behaviour Change Counselling Index (BECCI), the Motivational Interviewing Skills Code (MISC), the Motivational interviewing Assessment Scale (MIAS/EVEM) and the Motivational Interviewing Treatment Integrity tool (MITI).[1,16,17,18] None of these are directly applicable to BBCC using the 5 As.

The previous work on designing, developing and implementing a new model of BBCC in the SA context recommended that the tool used to assess clinical practice be fully evaluated and validated for wider use.[8]

### **Aim and objectives**

The aim was to evaluate the psychometric properties of a tool that is used to assess a new model of BBCC. Objectives included:

- To determine the content and construct validity of the tool.
- To determine the internal consistency of the tool.
- To evaluate the intra-and inter-rater reliability of the tool.

## **Methods**

### **Study design**

This was an exploratory sequential mixed methods validation study. Initial qualitative feedback on the content and construct validity of the tool by an expert panel informed the revision of the tool, which was then quantitatively analysed for internal consistency and reliability.

### **Setting**

A draft tool was previously developed and piloted in the Western Cape, at Stellenbosch University, as part of previous doctoral research.[5,6,7,8] The tool was developed to assess a new model of BBCC and the previous study recorded 123 consultations from 41 primary care practitioners (23 nurse practitioners, 12 family medicine registrars, 2 general practitioners and 4 family physicians) with standardised patients over a 6-week period. The audio recordings were made during a BBCC training course that involved all the practitioners. Recordings were made before, immediately after and then 6 weeks after BBCC training.

The model of BBCC integrates five steps that are referred to as the 5 As (Ask, Alert, Assess, Assist, Arrange) with a guiding style (collaborative, evocative, empathic, respectful, focused) derived from motivational interviewing (MI).[8] The first A (Ask) would include asking about a certain risk factor as well as asking permission to talk about the risk. The second A (Alert) would include alerting the patient about relevant dangers to health of the specific risk present. The third A (Assess) is an important step to assess whether a patient would be ready to change his risky behaviour, this vital step would determine the course of the following two steps; assist and arrange. The fourth A (Assist) refers to assisting the patient in their decision to make a change or not, by mentioning challenges to overcome and goals to identify. The last A (Arrange) refers to arranging further help and follow-up sessions to continue change and the motivation thereof. A guiding style, instead of a directive style is used to help change behaviour in a patient. Collaboration refers to working with the patient to bring on change, instead of prescribing (directive style). Evocative refers to assisting the patient to think of ways to change and where change has happened in the past. This must be done in an empathetic, non-judgemental and respectful way. Three key tasks that are congruent with a guiding style were identified for each of the five steps.

The original assessment tool (Appendix A) mirrored the 5 steps and assessed the extent to which the practitioner completed the tasks for each step. If they performed none of the tasks at the specific step,

they scored 0, if they performed one or two tasks they scored 1 and if they completed all three tasks, they scored 2. It was also important to complete the steps in the specified sequence.

## **Content and construct validity**

### Selection of expert panel

An expert panel consisted of the three researchers who developed the model of BBCC, two of whom were academic family physicians and one a social scientist. All three were also accredited as international trainers of motivational interviewing.

### Data collection

Qualitative feedback on the content and construct of the tool was obtained via a 4 hour group discussion with the expert panel. The content of the original tool was juxtaposed with the model of BBCC as described in the 'Helping people change' training manual.[11] The manual was written to train practitioners in BBCC. The experts were asked to comment on the tool's content and whether any tasks or competencies need to be excluded or added. The construction of the tool and how the questions were phrased was also discussed to ensure conceptual clarity and alignment with the tasks being evaluated. Finally the layout and appearance of the tool were discussed. Comments were clarified, consensus reached and the discussion was recorded on audiotape.

### Data analysis

The researcher analysed the content of the audiotape recording and her own notes to extract the key feedback on the content, construction and appearance of the tool. A new version of the BBCC tool was formulated (Appendix B. Respondent validation with all three experts via email was conducted over four iterative rounds of feedback and revisions until the panel were all satisfied with the final tool.

## **Internal consistency**

### Sampling strategy

The selection of recordings was done with the help of the Biostatistics Unit at the Faculty of Medicine and Health Sciences, Stellenbosch University. The population size consisted of 123 audiotapes. STATA 14 was used to calculate the sample size. Assuming 90% power, a difference in the mean total score of 0.1, a standard deviation of 0.2 and a significance level of 0.05, the sample size required was 33. Thirty-three audiotapes were randomly selected from the pool of 123 audiotapes.

### Data collection

Each audiotape was scored by six independent raters using the assessment tool. The raters included the primary researcher, three experts in BBCC from the original study, a final year family medicine registrar and a primary care nurse practitioner trained in BBCC. The primary researcher, the final year family medicine registrar and the nurse practitioner work in the clinical setting and all three attended training in BBCC. The three expert raters were from the academic setting and were part of the development of the initial tool as well as the training course in BBCC. No specific training was done on the use of the tool. All six participants had to listen to 33 audiotapes of a BBCC session between a health care worker (either a nurse or a doctor) and a simulated standardised patient who wanted to discuss one of the four risk factors for NCDs.

### Data analysis

There were 22 different items in each tool (Appendix B) that required an assessment. Each item was assessed with a tick if the practitioner did the task, a cross if the task was not done and as not-applicable (N/A) if the task was deemed not relevant. For steps 4 (Assist) and 5 (Arrange) different sections of the tool needed to be completed, depending on whether the patient was ready or not ready to change. The rater had to decide which section to complete and only complete the appropriate section. These separate sections did not have the same number of items and therefore the denominator for the total score differed between those that were ready to change (denominator of 18) and those that were not ready to change (denominator of 15). If the rater completed both sections then all items were included in the calculation of the total score (denominator of 22). If items were marked as not applicable then the denominator was also decreased to only include the number of applicable items. Items were scored as 1 if the task was completed and 0 if the task was not completed or not applicable in order to calculate a total score for the assessment. A percentage score was then calculated for each assessment based on the total score as the numerator and the appropriate denominator.

Data were captured in Excel, checked for errors, exported to the Statistical Package for Social Sciences version 25 (SPSS) and analysed with the help of the supervisor. Internal consistency was analysed using Cronbach Alpha for the total percentage score and the sub-scores for each of the five steps. This equated to a number between 0 and 1, where 0.70 and above was seen as a good internal consistency.[19,20]

### **Reliability testing**

#### Sampling strategy

The same sample of 33 audiotapes were used.

#### Data collection

In addition to the initial assessments of each tape as explained above, the 33 audiotapes were re-assessed one month later by the same raters.

#### Data analysis

All data were again captured on an Excel spread sheet and entered into SPSS. Data were analysed with the help of the same supervisor. An intra-class correlation coefficient (ICC) was calculated to test for inter-rater reliability for the total percentage score, sub-scores and for each item in the tool. An acceptable ICC was considered to be 0.70 or higher.[19]

Pearson's correlation was used to calculate the correlation between the assessment of the audiotapes at baseline and then one month later. Good correlation was shown by a coefficient greater than 0.7 and a p-value <0.05.

The global assessment of competency was a subjective score which each rater added at the end of their assessment of each audiotape. (1=not competent, 2= borderline/unsure, 3=competent and 4=excellent). Borderline regression was used to regress the total percentage score against the global assessment to obtain a pass score for the competent practitioner.

### **Ethical considerations**

The data used for this study was previously ethically approved by the Health Research Ethics Committee at Stellenbosch University, for a doctoral study on 12 February 2012 (N11/11/321). This further study was ethically approved by the same committee on 24 April 2018 (#1959).

## **Results**

### Content and construct validity

Table 1 compares the items in the original tool with the items in the revised tool as a result of the feedback from the expert panel. Overall 10 items were added to the tool, 1 item was deleted from the tool and 8 items were rephrased. Minor grammatical errors were corrected. The placement of 4 items was changed and the sections for Assist and Arrange were divided into different items depending on whether the client was 'ready to change' or 'not ready to change'.

**Table 1 Comparison of items between original and revised tool**

Section of tool	Original items	Revised items
ASK	<ul style="list-style-type: none"> <li>• Ask about the risk behaviour.</li> <li>• Ask what the patient already knows/would like to know.</li> <li>• Ask permission to discuss the issue</li> </ul>	<ol style="list-style-type: none"> <li>1. Asks if the risk behaviour is present.</li> <li>2. Asks about the risk behaviour.</li> <li>3. Asks what the patient already knows/wants to know about the risk behaviour.</li> <li>4. Asks permission to provide further information.</li> </ol>
ALERT	<ul style="list-style-type: none"> <li>• Provide information tailor made to the patient's need.</li> <li>• Provide information in a neutral way.</li> <li>• Elicit the patients response to the information provided.</li> </ul>	<ol style="list-style-type: none"> <li>5. Provides information related to what the patient already knows/wants to know about the risk behaviour.</li> <li>6. Provides additional information in a neutral way.</li> <li>7. Asks for the patient's response to the information provided.</li> </ol>
ASSESS	<ul style="list-style-type: none"> <li>• Assess importance of change for the patient.</li> <li>• Assess the patient's confidence to change.</li> <li>• Confirms the patient's readiness to change and respects the patient's autonomy in their decision/choice.</li> </ul>	<ol style="list-style-type: none"> <li>8. Assesses importance of change for the patient.</li> <li>9. Assesses the patient's confidence to change.</li> <li>10. Confirms the patient's state of readiness.</li> <li>11. Respects their choice.</li> </ol>
ASSIST	<ul style="list-style-type: none"> <li>• Clarifies the goal for change.</li> <li>• Discuss different options/strategies available with the patient.</li> <li>• Provide relevant practical assistance like leaflets/telephone numbers.</li> </ul>	<p>NOT READY</p> <ol style="list-style-type: none"> <li>12. Asks about or acknowledges the patient's concerns regarding change.</li> <li>13. Asks the patient to think of realistic ways to overcome these concerns.</li> <li>14. Offers supportive material.</li> </ol> <p>READY</p> <ol style="list-style-type: none"> <li>15. Clarifies the specific goal for change.</li> <li>16. Agrees on what action the patient will take.</li> <li>17. Offers relevant, practical assistance e.g. supportive material, contact details for community based resources services.</li> <li>18. Helps the patient identify social support for change.</li> </ol>
ARRANGE	<ul style="list-style-type: none"> <li>• Arrange for follow-up appointment.</li> <li>• Display empathy by demonstrating moral support.</li> </ul>	<p>NOT READY</p> <ol style="list-style-type: none"> <li>19. Emphasise that help is available when ready.</li> </ol> <p>READY</p>

	<ul style="list-style-type: none"> <li>Involve the patient's social support in the follow-up (friends/family).</li> </ul>	<ol style="list-style-type: none"> <li>20. Arrange a follow-up contact to provide on-going support and review progress.</li> <li>21. Refer for expert or additional help if appropriate.</li> <li>22. Emphasize your on-going commitment to support change.</li> </ol>
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The scoring system was changed from an assessment of each section of the tool to an assessment for each individual item as yes (score 1), no (score 0) or non-applicable (no score).

A number of additional supporting sections were added to the tool:

- Background information: Name of the assessor, practitioner and the date of assessment.
- Scoring information: Instructions on how to score and space to record the score.
- Feedback: A space for written formative feedback to the practitioner.
- Anchors: Notes to define each item and to standardise observations in order to assess if the item was performed or not.

Finally the panel suggested naming the tool the “Assessment of Brief Behavioural Change Counselling” (the ABC tool).

Description of participants and scores

Altogether 33 counselling sessions were assessed by each rater and the distribution of total percentage scores are shown in Figure 1 the median score was 65% (IQR of 38.5-87.0).

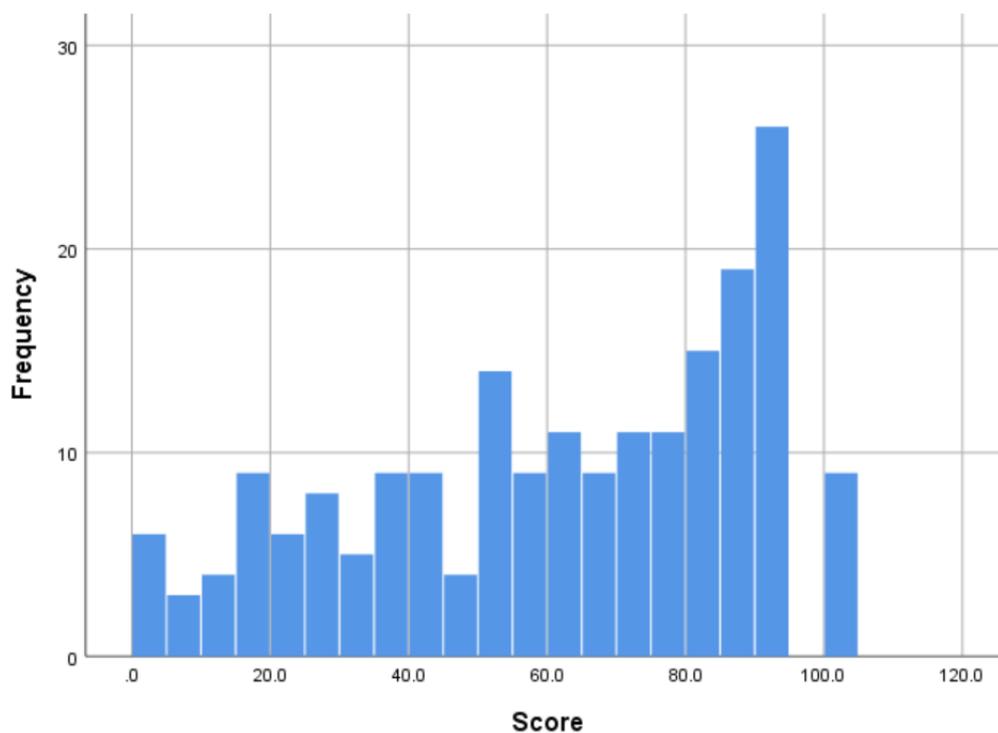


Figure 1: Distribution of raters' scores (N=197)

Borderline regression of the global scores against the total percentage scores gave a cut-off score of 54.8% for the minimally competent practitioner. (Figure 2). Using this cut-off score, 60.9% of practitioners were judged as competent.

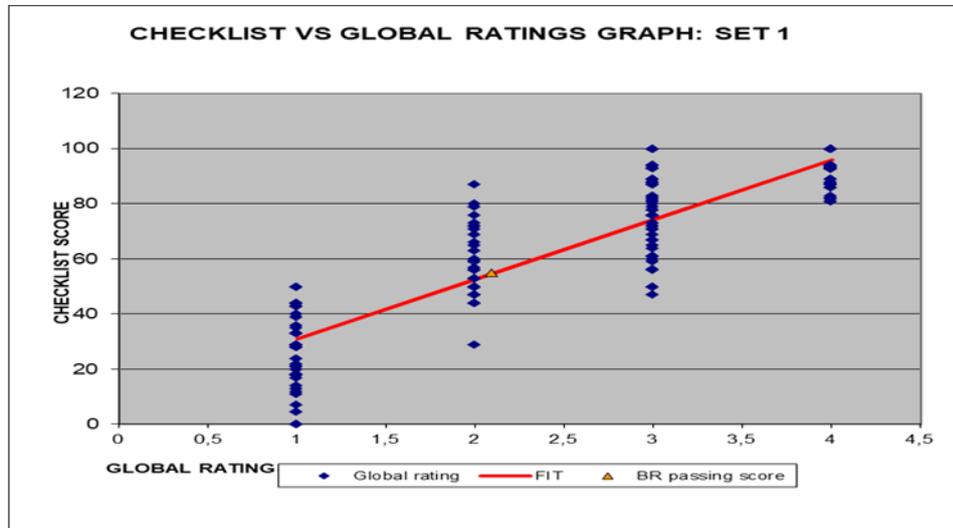


Figure 2 Borderline regression of global rating against total (checklist) score

Internal consistency

Cronbach Alpha for the total score was 0.955 suggesting good internal consistency. Cronbach Alpha for each of the 5As in set 1 (first rating of tapes) and set 2 (second rating of tapes) is shown in Table 2. Cronbach Alpha for each of the steps was greater than 0.700 suggesting good internal consistency and reliability, and consistently greater than 0.900 for steps 1 to 3.

**Table 2 Internal consistency of the tool**

	Set1 Cronbach alpha	Set 1 ICC	Set2 Cronbach alpha	Set 2 ICC
1. ASK	0.928	0.920	0.925	0.901
2. ALERT	0.934	0.925	0.939	0.926
3. ASSESS	0.939	0.931	0.942	0.931
4. ASSIST	0.858	0.784	0.906	0.834
5. ARRANGE	0.778	0.704	0.782	0.742

ICC= Intraclass correlation coefficient

Inter-rater reliability

The ICC for the total score in sets 1 and 2 was 0.714 and 0.813 respectively. Table 2 shows the ICC for each of the 5A steps and Table 3 shows the Cronbach Alpha and ICC for individual items. The ICC for steps 4 and 5 was much lower than the other three steps, although all were above 0.7 suggesting acceptable inter-reliability for the sub-scores. The ICCs for each of the items was less than 0.7 for all items apart from item 9. This suggested poor inter-rater reliability at the level of individual items.

Table 3: Internal consistency and inter-rater reliability of individual items

Item number	Alpha	ICC	Item number	Alpha	ICC
1	0.825	0.311	12	0.818	0.409
2	0.613	0.197	13	0.612	0.196
3	0.908	0.609	14	0.802	0.402
4	0.928	0.673	15	0.801	0.354
5	0.826	0.431	16	0.727	0.302
6	0.883	0.532	17	0.870	0.529
7	0.897	0.566	18	0.844	0.479
8	0.899	0.579	19	0.819	0.418
9	0.959	0.800	20	0.881	0.527
10	0.776	0.326	21	0.851	0.486
11	0.740	0.296	22	0.768	0.339

#### Intra-rater reliability

Test-retest reliability was calculated using Pearson's correlation test. Table 4 shows results for test-retest reliability. Step 1 to 3 as well as the total score shows good test-retest reliability, while steps 4 and 5 had a correlation less than 0.7.[21]

Table 4 Comparison of baseline and one month later scores.

Step	Pearson's correlation	p-value
1. ASK	0.824	<0.001
2. ALERT	0.860	<0.001
3. ASSESS	0.823	<0.001
4. ASSIST	0.619	<0.001
5. ARRANGE	0.478	<0.001
TOTAL SCORE	0.899	<0.001

## Discussion

The overall ABC tool score had good internal consistency, inter-rater and intra-rater reliability. The sub-scores for all of the 5A steps also had good internal consistency and inter-rater reliability, although steps 4 (Assist) and step 5 (Arrange) had insufficient intra-rater reliability. The overall

reliability of steps 4 and 5 were less than steps 1 to 3. The reliability of individual items was not established.

The lower reliability for the sub-scores in steps 4 (Assist) and step 5 (Arrange) may have been due to the division of the tool into scoring for those 'ready to change' versus those 'not ready to change'. Some raters marked both the ready and not ready to change sections, suggesting some confusion in how to use the tool for these steps. In some tapes it was difficult to determine the readiness to change if the practitioner did the 'Assess' step poorly. In other tapes, the readiness to change shifted after the initial assessment making it difficult to classify. Poor intra-rater reliability for these steps may also have been due to learning in the group of raters and clarification on how to use the tool for these steps between set 1 and set 2.

Although the sub-scores behaved reliably, there was variation in the way individual items were rated between raters. Therefore, the tool should not be scored at the level of individual items. Items 2 and 13 were particularly poor. It is possible that raters had difficulty distinguishing item 1 (asking if the risk factors was present) from item 2 (asking about the severity of the risk factor). Item 13 (asks the patient to think of realistic ways to overcome these concerns) could conceptually be relevant to counselling those that are 'ready to change' and 'not ready to change' as even those ready to change might need to think about ways of overcoming their concerns or challenges. Raters, therefore, may have found it difficult to only utilise this item for those not ready to change. Again, this implies that the instructions were not explicit enough to make a definite choice between scoring items in the ready and not ready to change options. It is also possible that raters did not follow the anchors consistently enough.

There are no other studies with the same purpose and context to compare results with. One study by Strayer et al. that measured some of the same elements, showed an inter-rater agreement (ICC) of 0.82, in line with this study's ICC for sets 1 and 2 that was 0.714 and 0.813 respectively.[13] Internal consistency was calculated using kappa coefficient and is difficult to compare with this study. The combined behavioural change counselling assessment instrument CBCCAI was developed to evaluate the quality of behaviour change interventions based on theories of the 5As, stages of change and motivational interviewing. The CBCCAI tool can closely compare to the ABC tool, although much emphasis was placed on stages of change and stage –appropriate MI. It comprised of 24 different items. The tool was developed by experts in MI and validated using videotaped encounters of 116 medical students counselling standardized patients. Different groups and settings were not used as with the ABC tool.

The 5A's Direct Observation Coding scheme (5A-DOC) was developed to assess the extend or rate at which 5As are accomplished during a consultation. The main aim differed from our study as there were no comparison between the results of raters, rather the documentation of whether the steps were completed or not and whether a specific sequence was followed [12] Audio recordings of 739 doctor-patient encounters regarding smoking cessation were evaluated. Kappa statistics was used to determine inter-rater reliability and cannot be directly compared to the ICC used in this study. Internal consistency of our study was much higher when compared to the behaviour change counselling index (BECCI), which is an 11-item tool (not using the 5 As) that also measures behaviour change counselling in primary care consultations.[15] Inter-rater reliability was comparable. In conclusion, the reliability of the ABC tool is simillar to the above existing tools.

The expert panel that validated the tool were clinicians from the academic setting and not that active in clinical practice. Input from non-academic practitioners in the clinical setting could have been valuable to identify specific workplace challenges when using the tool. Limitations could also include

that some of the raters had no training or guidance in using the tool specifically before the audiotapes were assessed, other than the written instructions on the tool itself. One rater did not enter any data for the global rating of recordings and therefore the power of the borderline regression may have been reduced through the loss of these data points. There were two audiotapes that mixed Afrikaans and English, which two of the raters struggled to understand. To compensate for this the tapes were translated verbatim by the principal researcher and distributed to all raters. One rater left out data for audiotapes 13 and 17 in set 2 altogether.

Recommendations include:

1. The ABC tool has sufficient reliability for it to be used in assessment of BBCC. Assessments could be part of pre- as well as in-service training or further research studies. It could, for example, be added as a tool in the postgraduate workplace-based assessment portfolio for registrars in family medicine.[22] The tool could also be used in research projects to assess BBCC in primary care and the fidelity of primary care providers over a period of time.
2. Item 2 should be rephrased to make the distinction from item 1 clearer.
3. The layout of the tool should be revised to improve use of steps 4 (Assist) and 5 (Arrange) where the rater must decide between rating someone 'ready to change' and 'not ready to change'. In order to simplify the tool and the difficulty that raters found in dichotomising steps 4 and 5 it may be easier to keep all the items as options in both steps and let the rater decide which are not applicable to the person's readiness to change. Similar items can also then be combined (items 14 and 17, as well as items 19 and 22). This would also simplify the scoring of the tool, which will then be consistently out of 20 if all items are scored. The revised tool is shown in Appendix 3
4. Further research could re-assess the improvement in reliability of the tool once these revisions are made. Such research could also evaluate the ability of clinical trainers to use the tool.

## Conclusion

These results suggest that the ABC tool is sufficiently reliable for the assessment of BBCC in clinical settings or research studies. Minor revisions may further improve the reliability of the tool, particularly for the sub-scores measuring Assist and Arrange.

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## Appendix A- Original tool

Step	Criteria	Mark
<p>Step 1: ASK</p> <p>Did the HCP ask about the behaviour risk?</p>	<ul style="list-style-type: none"> <li>Ask about the risk behaviour</li> <li>Ask permission to discuss the issue</li> <li>Ask what the patient already knows/would like to know</li> </ul>	<input type="text"/> <input type="text"/> <input type="text"/>
<p>Step 2: ALERT</p> <p>Did the HCP alert the patient to the risk?</p>	<ul style="list-style-type: none"> <li>Provides information in a neutral way</li> <li>Provides information tailor made to the patient's needs</li> <li>Elicits the patients response to the information provided</li> </ul>	<input type="text"/> <input type="text"/> <input type="text"/>
<p>Step 3 : ASSESS</p> <p>Did the HCP assess readiness to change?</p>	<ul style="list-style-type: none"> <li>Assess importance of change for the patient</li> <li>Assess the patients confidence to change</li> <li>Confirms the patients readiness to change and respects the patients autonomy in their decision/choice</li> </ul>	<input type="text"/> <input type="text"/> <input type="text"/>
<p>Step 4: ASSIST</p> <p>a. ( Those that are ready) Did the HCP provide any practical assistance to help the patient change?</p> <p>b. (Those that are not ready) Did the HCP ask the patient to think about changing in the future?</p>	<ul style="list-style-type: none"> <li>Clarifies the goal for change</li> <li>Discuss different options/strategies available with the patient</li> <li>Provide relevant practical assistance like leaflets/ telephone numbers</li> </ul>	<input type="text"/> <input type="text"/> <input type="text"/>
<p>Step 5 : ARRANGE</p> <p>a. ( Those that are ready ) Did the HCP arrange for follow –up?</p> <p>b. ( Those that are not ready) Did the HCP open the door for the patient to come in the future?</p>	<ul style="list-style-type: none"> <li>Arrange for follow-up appointment</li> <li>Display empathy by demonstrating moral support</li> <li>Involve the patients social support in follow –up (friends/family)</li> </ul>	<input type="text"/> <input type="text"/> <input type="text"/>

**Appendix B: ABC tool tested in the study**

Practitioner.....

Date.....

Assessor.....

STEP	CRITERIA	✓ =done X =not done NA = not applicable
<b>ASK</b> Ask about risky behaviour	Asks if the risk behaviour is present.	
	Asks about the risk behaviour.	
	Asks what the patient already knows / wants to know about the risk behaviour.	
	Asks permission to provide further information.	
<b>ALERT</b> Alert to risks of behaviour / benefits of change	Provides information related to what the patient already knows / wants to know about the risk behaviour.	
	Provides additional information in a neutral way.	
	Asks for the patient's response to the information provided.	
<b>ASSESS</b> Assess readiness to change	Assesses importance of change for the patient.	
	Assesses the patient's confidence to change.	
	Confirms the patient's state of readiness.	
	Respects their choice.	
<b>ASSIST</b> a) Assist if NOT READY to change	Asks about or acknowledges the patient's concerns regarding change.	
	Asks the patient to think of realistic ways to overcome these concerns.	
	Offers supportive material.	
b) Assist if READY to change	Clarifies the specific goal for change.	
	Agrees on what action the patient will take.	
	Offers relevant, practical assistance e.g. supportive material, contact details for community based resource services	
	Helps the patient identify social support for change.	
<b>ARRANGE</b> a) Arrange for future help if NOT READY to change	Emphasise that help is available when ready.	
b) Arrange for follow up if READY to change	Arrange a follow-up contact to provide ongoing support and review progress.	
	Refer for expert or additional help if appropriate.	
	Emphasize your on-going commitment to support change.	

**Global rating**

1= Not competent	2= Borderline	3= Competent	4= Excellent
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### Scoring

Give one point for each tick to create a score. Convert this to a percentage by dividing the score by the total number of possible ticks and multiplying by 100. The total number of possible ticks will be 18 for those that are READY and 15 for those that are NOT READY to change. This number may be further reduced if some items are marked NOT APPLICABLE.

Score	Percentage
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### Feedback to practitioner


### Notes on the criteria

**ASK:** It is assumed that only one risk behaviour will be discussed. It may be necessary to ask if the risk behaviour is present (e.g. Do you smoke?), but if this is already known then this question is not applicable. When asking about the risk behaviour an assessment of severity is done (i.e. How many cigarettes do you smoke?). This could also be done by using some of the questions in the manual.

**ALERT:** Information should alert the patient to the risks of their behaviour or benefits of change and be related to what the patient already knows or wants to know. Other information may be given, for example relating their behaviour to known health problems. Being neutral implies that the information is shared without also advising or telling the patient what they must do.

**ASSESS:** Importance and confidence to change should be assessed or acknowledged by using a scale, open questions, reflective listening statements or summaries. The practitioner should confirm the patient's readiness to change and demonstrate their willingness to respect the patient's choice.

**ASSIST:** Clarify the goal in terms of what, when, who and where: What exactly are you going to do? What might be some of the challenges? What could you do to overcome these challenges? When will you start? Who can support you? Where will this happen? An attainable action plan should be brainstormed and agreed on. If the patient is not ready for change, care should be taken to explore their ambivalence, without any advice or pressure.

**ARRANGE:** If ready to change, organise a future contact via phone, email or clinic visit. Referral may be to expert counselling (e.g. dietician, social worker) or additional help (e.g. community health worker). If the patient is not ready to change, then keep an open door for when they are ready.

Further information: <http://www.ichange4health.co.za/healthcare-professionals/>

**Appendix C: ABC tool revised from study findings**

Practitioner.....

Date.....

Assessor.....

STEP	CRITERIA	✓ =done X =not done NA = not applicable
<b>ASK</b> Ask about risk behaviour	Asks if the risk behaviour is present (i.e. Do you smoke)	
	Asks about the risk behaviour (i.e. How much do you smoke)	
	Asks what the patient already knows / wants to know about the risk behaviour.	
	Asks permission to provide further information.	
<b>ALERT</b> Alert to risks of behaviour / benefits of change	Provides information related to what the patient already knows / wants to know about the risk behaviour.	
	Provides additional information in a neutral way.	
	Asks for the patient's response to the information provided.	
<b>ASSESS</b> Assess readiness to change	Assesses importance of change for the patient.	
	Assesses the patient's confidence to change.	
	Confirms the patient's state of readiness.	
	Respects their choice.	
<b>ASSIST</b> Provide practical assistance. Remember to mark as not applicable items that are not relevant to the person's readiness to change	Asks about or acknowledges the patient's concerns or challenges regarding change.	
	Asks the patient to think of realistic ways to overcome these concerns or challenges	
	Offers relevant, practical assistance e.g. supportive material, prescription	
	Helps the patient identify social support for change.	
	Clarifies the specific goal for change.	
	Agrees on what action the patient will take.	
<b>ARRANGE</b> Arrange appropriate follow up.  Remember to mark as not applicable items that are not relevant to the person's readiness to change	Emphasise that help is available when ready / Emphasise your on-going commitment to support change.	
	Refer for expert or additional help if appropriate.	
	Arrange a follow-up contact to provide ongoing support and review progress.	

### Scoring

Give one point for each tick to create a score. Convert this to a percentage by dividing the score by the total number of possible ticks and multiplying by 100. The total number of possible ticks is 20. This number can be reduced if some items are marked NOT APPLICABLE.

Score	Percentage
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### Feedback to practitioner


### Notes on the criteria

**ASK:** It is assumed that only one risk behaviour will be discussed. It may be necessary to ask if the risk behaviour is present (e.g. Do you smoke?), but if this is already known then this question is not applicable. When asking about the risk behaviour an assessment of severity is done (i.e. How many cigarettes do you smoke?). This could also be done by using some of the questions in the manual.

**ALERT:** Information should alert the patient to the risks of their behaviour or benefits of change and be related to what the patient already knows or wants to know. Other information may be given, for example relating their behaviour to known health problems. Being neutral implies that the information is shared, without also advising or telling the patient what they must do.

**ASSESS:** Importance and confidence to change should be assessed or acknowledged by using a scale, open questions, reflective listening statements or summaries. The practitioner should confirm the patient's readiness to change and demonstrate their willingness to respect the patient's choice.

**ASSIST:** Clarify the goal in terms of what, when, who and where: What exactly are you going to do? What might be some of the challenges? What could you do to overcome these challenges? When will you start? Who can support you? Where will this happen? An attainable action plan should be brainstormed and agreed on. If the patient is not ready for change, care should be taken to explore their ambivalence or concerns, without any advice or pressure.

**ARRANGE:** If ready to change, organise a future contact via phone, email or clinic visit. Referral may be to expert counselling (e.g. dietician, social worker) or additional help (e.g. community health worker). If the patient is not ready to change, then keep an open door for when they are ready.

Further information: <http://www.ichange4health.co.za/healthcare-professionals/>