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Table a. Participant demographics, clinical characteristics and psychiatric history for each group (Control, Training) for both the Intention to Treat (ITT) and Per Protocol (PP) populations.

	Intention to Treat			Per Protocol		
	Control (n = 40)	Training (n = 39)	P	Control (n = 28)	Training (n = 32)	P
<b>Age (Years)<sup>a</sup></b>	48 (5.52)	51 (6.0)	.06	48 (5.82)	50 (6.34)	.2
<b>Age at Diagnosis (Years)</b>	44 (6.94)	47 (6.43)	.05*	45 (6.54)	47 (6.84)	.22
	No. (%)			No. (%)		
<b>Diagnosis</b>						
Primary	38 (95)	37 (94.9)	.98	27 (96.4)	31 (96.9)	.92
Secondary	2 (5)	2 (5.1)		1 (3.6)	1 (3.1)	
<b>Grade of Cancer</b>						
Low	-	-	.16			
Moderate	12 (30)	18 (46.2)		9 (32.1)	15 (46.9)	.25
High	27 (67.5)	21 (53.8)		19 (67.9)	17 (53.1)	
<b>Chemotherapy</b>						
Yes	37 (92.5)	36 (92.3)	.97	26 (92.9)	29 (90.6)	.76
<b>Radiotherapy</b>						
Yes	34 (85)	28 (71.8)	.15	22 (78.6)	21 (65.6)	.27
<b>Surgery Type</b>						
Mastectomy	25 (62.5)	30 (76.9)	.16	17 (60.7)	25 (78.1)	.14
Lumpectomy	15 (37.5)	9 (23.1)		11 (39.3)	7 (21.9)	
<b>Endocrine Therapy<sup>b</sup></b>						
Yes	31 (79.5)	27 (69.2)	.3	21 (75)	21 (65.6)	.3
<b>Current Psychological Medication<sup>c</sup></b>						
Yes	5 (12.5)	12 (30.8)	.05*	4 (14.3)	10 (31.3)	.1
No	27 (67.5)	20 (51.3)		21 (75)	18 (56.3)	
<b>Previous Psychological Condition<sup>d</sup></b>						
Yes	8 (20)	11 (28.2)	.46	6 (21.4)	10 (31.3)	.4
No	23 (57.5)	21 (53.8)		18 (64.3)	18 (56.3)	
<b>Alcohol Intake<sup>e</sup></b>						
None	18 (45)	11 (28.2)	.49	14 (50)	10 (31.3)	.69
1-5 units	6 (15)	8 (20.5)		4 (14.3)	6 (18.8)	
5-9- units	4 (10)	5 (12.8)		3 (10.7)	5 (15.6)	
10-14 units	3 (7.5)	6 (15.4)		3 (10.7)	5 (15.6)	
14+ units	1 (2.5)	2 (5.1)		1 (3.6)	2	

<sup>a</sup> Values indicate means and standard deviations unless indicated otherwise.

<sup>b</sup> 1 participant in the control group did not indicate whether they were taking endocrine therapy.

<sup>c</sup> Participants taking antidepressant or anti-anxiety medication. 8 control and 7 training participants were non-responsive.

<sup>d</sup> 9 participants in the control group and 7 in the training did not indicate a previous psychological condition.

<sup>e</sup> 8 participants in the control group and 7 in the training did not respond to alcohol intake.

\*Significant between-group difference,  $P = .05$ .

### **Training tasks**

Both sets of stimuli were presented at a rate of 500ms and each trial was separated by an interval of 2,500ms. Target stimuli appeared semi-randomly to ensure an equal number of audio and visual matches in

each block (4 per block) and 2 trials of a simultaneous audio and visual match. Positions of target stimuli were randomly assigned so that the level of n was the same for both types of stimuli. Tasks were programmed using php programming software, with a MYSQL database for data storage. Audio files were in mp3 format and were run on a Ununtu/apache server. Participants were told to complete the task as quickly and accurately as possible without stopping the task at any point; short breaks of 15s between blocks were given.

Figure a. An example of the 1-back (upper level) and 3-back (lower level) tasks. Audio and visual stimuli were presented simultaneously. For the 1-back task participants were instructed to remember the letter spoken and the position of the green square 1 trial back. In this example, the position of the square in Trial 3 is the same as it is in Trial 2 (1 trial back). Conversely the letter spoken in trials 1, 2 and 3 do not match. Consequently, the participants have to press button “A” for only a visual match. For the 3-back task participants were instructed to remember the letter spoken and the position of the green square 3 trials back. In this example, the position of the square in Trial 4 is the same as it is in Trial 1 (3 trials back). Similarly, the letter spoken in Trial 4 (T) matches the letter spoken in Trial 1. Therefore, the participants have to press buttons “A” and “L” simultaneously for both a visual and auditory match.

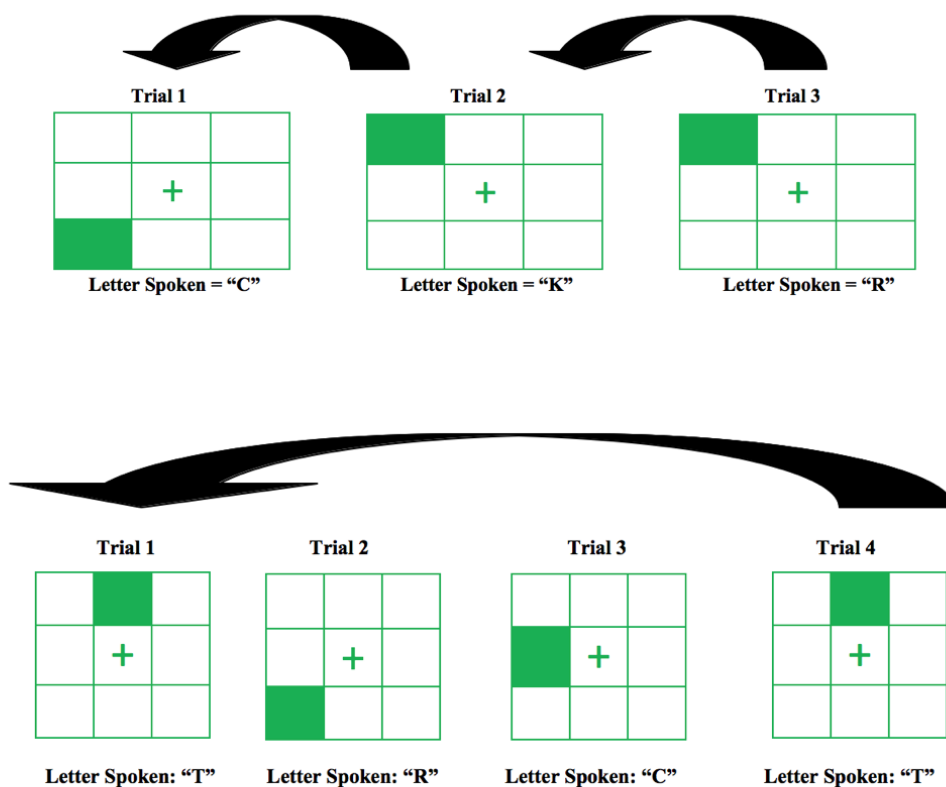
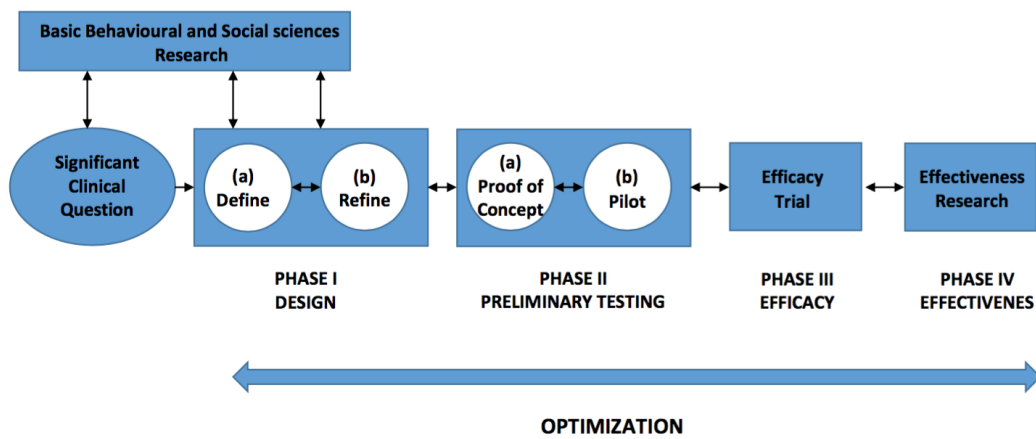


Figure a.

Figure b.



### CONSORT Flow Diagram

Enrollment

Assessed for eligibility (n=254)