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CORRIGENDUM

Prospective Memory After Stroke: A Scoping Review – CORRIGENDUM

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The authors would like to apologise for several errors in the above publication. All errors relate to multiple misreports of the significance of findings from a single study by Barr (2011).

In the first paragraph of p. 12, the following was noted:

> The studies examining event-based PM resulted in mixed findings, with two of the studies reporting significantly poorer event-based PM performance for participants with stroke compared to controls (Brooks et al., 2004; Man, Chan & Yip, 2014), and the other four reporting no significant differences between the individuals with stroke and controls (Barr, 2011; Cheng, Tian, Hu, Wang, & Wang, 2010; Kant et al., 2014; Kim, Craik et al., 2009).

The paragraph should in fact read:

> The studies examining event-based PM resulted in mixed findings, with three of the studies reporting significantly poorer event-based PM performance for participants with stroke compared to controls (Barr, 2011; Brooks et al., 2004; Man, Chan & Yip, 2014), and the other three reporting no significant differences between the individuals with stroke and controls (Cheng, Tian, Hu, Wang, & Wang, 2010; Kant et al., 2014; Kim, Craik et al., 2009).

In the same paragraph, another error has been noted:

> Results seemed to be dependent on the type of measure used. Significant findings were found when utilising a VR paradigm (Brooks et al., 2004), a naturalistic task (remembering to ask for a written explanation at the end; Brooks et al., 2004), and the Cambridge Prospective Memory Task - Hong Kong Chinese Version (CAMPROMPT-HKCV; Man, Chan & Yip, 2014). No significant differences were found when using another naturalistic task (remembering to ask for a belonging back; Brooks et al., 2004; Kant et al., 2014; Kim, Craik et al., 2009), the Virtual Week (Kim, Craik et al., 2009), the original version of the CAMPROMPT (Barr, 2011) or experimental/laboratory measures (Cheng et al., 2010; Kant et al., 2014).

This should in fact read:

> Results seemed to be dependent on the type of measure used. Significant findings were found when utilising a VR paradigm (Brooks et al., 2004), a naturalistic task (remembering to ask for a written explanation at the end; Brooks et al., 2004), and the Cambridge Prospective Memory Task - Hong Kong Chinese Version (CAMPROMPT-HKCV; Man, Chan & Yip, 2014) and original CAMPROMPT (Barr, 2011). No significant differences were found when using another naturalistic task (remembering to ask for a belonging back; Brooks et al., 2004; Kant et al., 2014; Kim, Craik et al., 2009), the Virtual Week (Kim, Craik et al., 2009), or experimental/laboratory measures (Cheng et al., 2010; Kant et al., 2014).

In the second paragraph of p. 12, it was said that:

> Three studies examining time-based PM reported significantly poorer performance for individuals with stroke compared to controls (Cheng et al., 2010; Kim, Craik et al., 2009; Man, Chan & Yip, 2014).

This is incorrect and should instead read:

> Four studies examining time-based PM reported significantly poorer performance for individuals with stroke compared to controls (Barr, 2011; Cheng et al., 2010; Kim, Craik et al., 2009; Man, Chan & Yip, 2014).

TABLE 1
Observational Studies

Study (year)	Sample	Age in years M(SD)	Stroke type/location	Time since onset	Measure	Findings and effect sizes	STROBE Quality Analysis
Brooks et al. (2004)	42 Stroke (inpatient; 23m, 19f) (17 excluded due to RM deficit, thus analyses based on 25 individuals with stroke)	71.8 (9.40)	21 RH, 20LH, 1 BL	1 week – 2 months	Self-report questionnaire: examining real-life PM tasks. Questions included "How often do you forget to take medication?" Each item was answered on a seven-point Likert scale from Never to Always	Self-report PM: No significant difference between stroke and matched controls (p=0.57, d=0.17).	17/22
	25 age-matched controls	68.44 (7.11)			Virtual Reality: Moving House Task. EBPM, TBPM, and ABPM tasks, were embedded in an ongoing activity wherein participants helped someone move house.	TBPM: no significant difference between stroke and controls (p=0.05, d=-0.57; trend towards significance). EBPM: Controls performed significantly better than stroke (p=0.004, d=-0.88) ABPM: Controls performed significantly better than stroke (p<0.001, d=-1.06).	
					Naturalistic Task: Remembering a Belonging task (EBPM). From the RBMT (Wilson, Cockburn, & Baddeley, 1991): participants are instructed to give a personal item (i.e. a watch) to the experimenter and told to remember to ask for the item back at the end of the study, and to recall where the item was hidden.	EBPM: No significant difference between stroke and controls (p=1.00, $\varphi = 0.004$).	
					Naturalistic Task: Written explanation task (EBPM). Participants instructed to ask the experimenter for a written explanation of the study when they finished the VR task.	EBPM: Control group performed significantly better than stroke group (p=0.03, $\varphi = 0.31$).	

TABLE 1
Continued

Study (year)	Sample	Age in years M(SD)	Stroke type/location	Time since onset	Measure	Findings and effect sizes	STROBE Quality Analysis
Kim, Craik et al. (2009)	12 stroke (outpatient)	69.33 (7.02)	5 RH, 5LH, 2 BL	4.8 months – 108 months	Self-report questionnaire: PRMQ (G. Smith et al., 2000). 16-item self-report questionnaire (eight items for each domain, PM and RM). Participants rate how often each type of memory failure occurs in everyday life on a five-point Likert scale ranging from Never to Very often.	Total score: No significant difference for both PM and RM between controls and stroke (p=ns, d=-0.47).	18/22
	12 age- and education -matched controls	69.08 (4.94)			Clinical Measure: Virtual Week (EBPM - regular and irregular tasks; and TBPM.	EBPM Regular Correct-responses: No significant difference between stroke and control (p=0.44, d=-0.35) EBPM Irregular-Correct responses: No significant difference between stroke and control (p=0.076, d= -0.78) TBPM Correct-responses: Stroke significantly poorer than controls (p=0.007, d= -1.28). EBPM Regular Miss-responses: No significant difference between stroke and control p=0.099, d= 0.70) EBPM Irregular Miss-responses: No significant difference between stroke and control (p=0.183, d= 0.57) TBPM Miss-responses: Stroke had significantly more misses than controls (p=0.001, d= 1.87).	
					Experimental Measure: Memory for Intentions (RM and Total PM). Assesses both retrospective and prospective components of PM through a process of associating real-life intentions to pictures and having participants recall the correct cues and intentions in a later recall condition.	RM: No significant differences between stroke and controls PM: Stroke had significantly poorer performance on the prospective component (p<0.001, $\eta_p^2 = .491$), even after controlling for their lower performance on the paired-associate task (p=0.004, $\eta_p^2 = .332$).	
					Naturalistic Task: Remembering a Belonging task (EBPM).	EBPM: No significant difference found between stroke and controls (p=0.67, φ=0.19).	

TABLE 1
Continued

Study (year)	Sample	Age in years M(SD)	Stroke type/location	Time since onset	Measure	Findings and effect sizes	STROBE Quality Analysis
Cheng et al. (2010)	18 Stroke (inpatient; 12 m, 6f)	65 (Range = 45–85)	18 Thalamic stroke 8 RH, 8 LH, 2 BL	2 weeks – 2 months	Experimental Task: TBPM. Participants instructed to tap desk at 5 minute intervals from the starting time (PM task) while completing an ongoing task.	TBPM: Stroke performed significantly poorer than controls (p<.01, d=-2.25).	17/22
	18 (11 m, 7 f) age- and education-matched controls		14 infarct, 4 haemorrhage		Experimental Task: EBPM. Participants instructed to tap desk when they saw an animal word during an ongoing task. Also requested to tell the experiment their phone number when the ongoing task was completed.	EBPM: No significant difference between stroke and controls (p>.05, *d*=-0.46).	
Barr (2011)	22 Stroke (community-dwelling; 9f, 13m)	65 (15.12)	6 haemorrhage, 7 cerebral infarction, 9 unspecified as haemorrhage or infarction	6 months – 72 months	Self-report questionnaire: PRMQ	Total PM: No significant difference between control and stroke (p=0.16, d =-0.54). Total PM: No significant differences between stroke and significant-other (p=0.55, d = 0.10).	17/22
	20 significant-others 22 controls (18f, 4m)	53.77 (13.67)			Clinical Measure: CAMPROMPT (Wilson, 2005; EBPM and TBPM). Participants complete distractor puzzles as the ongoing task and are required to complete 3 EBPM tasks and 3 TBPM tasks either throughout or after the session has ended.	Total PM: Stroke significantly more PM failure than controls (p<.05, ηp^2 = .12). EBPM: Stroke significantly more PM failure than controls (p<.05, d=-1.53) TBPM: Stroke significantly more PM failure than controls (p<.05, d=-1.45). Higher levels of depression related to significantly poorer TBPM performance.	
Kant et al. (2014)	39 Stroke (community-dwelling; 69% male)	58.2 (14.2)	31% haemorrhage	M = 17 months (SD = 8.3)	Experimental measure: dual-task paradigm (EBPM and TBPM). Participants performed an ongoing task pen and paper task (Bourdon-Wiersma task: marking arrays of four dots among arrays of 3–5 dots) and were required to complete both EBPM (saying 'regel' – the Dutch word for line, when whenever the last configuration in a line contained 3 dots) and TBPM (insert a coin in a designated contained after each minute had passed).	EBPM: No significant differences between stroke and control (p= 0.075, d= -0.50). TBPM: Stroke significantly poorer than controls (p=0.002, d= -0.88).	17/22

TABLE 1
Continued

Study (year)	Sample	Age in years M(SD)	Stroke type/location	Time since onset	Measure	Findings and effect sizes	STROBE Quality Analysis
	53 age-, education-, and IQ- matched controls (38% male)	51.7 (17.4)			Naturalistic Task: Remembering a Belonging task (EBPM) Naturalistic Task: Phone call (TBPM). Participants had to make a phone call after 30 minutes	EBPM: No significant difference found between stroke and controls (p=0.879, d = -0.13) TBPM: No significant difference between stroke and controls (p=0.452, d = -0.23).	
Man, Chan & Yip (2014)	40 Stroke (outpatient; 25 m, 15 f) 44 (8 m, 36 f) controls	50.13 (10.30) 41.86 (9.32)	19 ischemia 21 haemorrhage		Clinical Measure: CAMPROMPT –HKCV (EBPM and TBPM). Hong Kong Chinese Version of the CAMPROMPT.	EBPM: Stroke significantly poorer than controls (p=0.001, d= -1.34). TBPM: Stroke significantly poorer than control (p=0.001, d= -1.88).	17/22
Man, Yip et al. (2015)	29 younger-stroke group (community-dwelling; 14m, 12 f) 46 older-stroke group (community-dwelling; 54m, 22f) 46 younger-controls (15m, 31f) 66 older-controls (46m, 20f) 65 significant-others	49.29 (5.11) 67.07 (6.92) 45.48 (3.37) 68.68 (5.24)		1 month - more than 24 months	Self-report questionnaire: BAPM (Man et al., 2011). A shortened version of the CAPM. Measures PM failure, wherein PM is broken into prospective remembering for BADL and IADL, with eight items for each, rated on a five-point Likert scale.	PM Total Whole-group: No significant difference between stroke and significant-others ratings (p=0.06, d = -0.33; trend towards significance). PM Total: When divided into age groups of young and old, the older-stroke group reported significantly more frequent PM failure than the young-control group (p<0.001, d = 0.83) and the older control (p=0.01, d = 0.60), but not the younger stroke group (p=ns, d = 0.37). IADL PM Whole-group: Significant-others reported significantly more PM failures than stroke (p=0.01, d=-0.46). BADL PM Whole-group: No significant difference between stroke and significant-other (p=0.43, d = -0.46). IADL PM Young: No significant difference between stroke and significant-others (p= 0.38, d = -0.59) BADL PM Young: No significant difference between stroke and significant-others (p= 0.55, d=-0.42). IADL PM Old: No significant difference between stroke and significant-others (p=0.05, d = 0.53; trend towards significance) IADL PM Old: Older-stroke significantly poorer than young-control (p=0.029, d = 0.89), old-control (p<0.001, d = 0.42) and young-stroke (p<0.001, d = 0.25). BADL PM Old: No significant difference between stroke and significant-others (p=0.39, d=0.16). BADL PM Old: Older-stroke significantly poorer than younger-control, (p<0.001, d = 0.72). No significant difference between old stroke and old control (p=ns, d = 0.36) or old-stroke and young-stroke (p=ns, d = 0.23).	17/22

m = male; f = female; LH = left hemisphere; RH = right hemisphere; BL = bilateral damage; PRMQ = Prospective and Retrospective Memory Questionnaire; CAMPROMPT = Cambridge Prospective Memory Test; CAMPROMPT - HKCV = Cambridge Prospective Memory Test – Hong Kong Chinese Version; RPA-ProMem = Royal Prince Alfred Prospective Memory Test; BAPM = Brief Assessment of Prospective Memory. TBPM = Time-based PM; EBPM = event-based PM; ABPM = activity-based PM. Effect sizes (Hu, 2010) measured using Cohen's d are interpreted using the following criteria: 0.2; medium = 0.5; or large = 0.8. Cohen (1988) suggested effect sizes be interpreted in term of small (0.1), medium (0.3), and large (0.5) when calculated using phi (φ), and small (0.01), medium (0.09), and large (0.25) when calculated using partial-eta squared (ηp^2).

Also in the second paragraph of p. 12, it was noted that:

> Another two studies reported no significant differences between the groups' PM performances (Barr, 2011; Brooks et al., 2004), and one reported mixed findings dependent on the measure used (Kant et al., 2014).

This is also incorrect and should instead read:

> Another study reported no significant differences between the groups' PM performances (Brooks et al., 2004), and one reported mixed findings dependent on the measure used (Kant et al., 2014).

There was an additional third error in the second paragraph of p. 12, where it was observed:

> As with the event-based PM, findings were dependent on the type of measure utilised. Significant differences were found when using the CAMPROMPT-HKCV (Man, Chan & Yip, 2015), Virtual Week (Kim, Craik et al., 2009), and experimental/laboratory measures PM (Cheng et al., 2010; Kant et al., 2014), however no significant differences were found when utilising a VR platform (Brooks et al., 2004), the original version of the CAMPROMPT (Barr, 2011) and a naturalistic task (making a phone call after 30 minutes; Kant et al., 2014).

This sentence should read:

> As with the event-based PM, findings were dependent on the type of measure utilised. Significant differences were found when using the CAMPROMPT-HKCV (Man, Chan & Yip, 2015), original CAMPROMPT (Barr, 2011), Virtual Week (Kim, Craik et al., 2009), and experimental/laboratory measures PM (Cheng et al., 2010; Kant et al., 2014), however no significant differences were found when utilising a VR platform (Brooks et al., 2004), and a naturalistic task (making a phone call after 30 minutes; Kant et al., 2014).

Finally, errors regarding Barr (2011) have been noted in Table 1. A corrected version is on previous page.

Reference

Hogan, C., Fleming, J., Cornwell, P., and Shum, D. (2016) "Prospective Memory After Stroke: A Scoping Review," *Brain Impairment*. Cambridge University Press, *17*(2), pp. 123–142. doi: 10.1017/BrImp.2016.12.