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The effect of self-management education following mild stroke: An exploratory randomized controlled trial

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Abstract

Background—Mild stroke comprises 53% of stroke hospital admissions; however, the majority of those with mild stroke patients receive little support to address chronic symptoms following stroke.

Objectives—To evaluate the feasibility and preliminary effect of the Chronic Disease Self-Management Program (CDSMP) for use with individuals immediately post mild-stroke.

Methods—Single-blind, exploratory, randomized controlled trial with participants who sustained a mild stroke (NIHSS < 6). Participants were randomized to either receive the Chronic Disease Self-Management Program (CDSMP) intervention or to an inactive control group. Primary outcomes were self-reported health and self-efficacy and were obtained at baseline, post-intervention (treatment group only), and at six months post-baseline. Wilcoxon Signed Rank Tests were used to compare change score differences for all participants and effect size was computed using effect size r for non-parametric data.

Results—There were no differences between groups in demographics or baseline data with the exception of how participants felt they are able to manage their health in general ($p = 0.05$). At follow-up, effect sizes ranged from 0 to 0.35 (no effect to medium effect); however, while the treatment group reported improvements in several areas of health at follow-up, the results are not compelling when compared to the control group over the same time period.

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Disclosures

The authors report no conflicts of interest.

Conclusions—The results did not identify a positive effect that would support the use of the CDSMP with individuals post-mild stroke; however, the generalizability of these results are limited secondary to several limitations in this exploratory study.

Keywords

Stroke; Stroke Management; Chronic Disease; Rehabilitation; Occupational Therapy

Introduction

Stroke is the leading cause of long-term disability in the United States, with over seven million people currently living with stroke¹. The level of one's neurological impairment following stroke is measured, in part, by the National Institutes of Health Stroke Scale (NIHSS)². Those with a mild stroke (NIHSS ≤ 5) often exhibit limited gross impairment in motor, sensory, speech or other common symptoms of stroke that would require intensive inpatient rehabilitation and/or discharge to a subacute facility. Mild stroke comprises approximately 53% of stroke hospital admissions however most individuals with mild stroke receive little to no rehabilitation services³. Even though they often don't receive much rehabilitation individuals with mild stroke have ongoing health concerns that require chronic care.

Individuals with mild stroke often have other chronic conditions (e.g., diabetes, hypertension) that must be managed on a daily basis. Also, individuals with mild stroke often have additional chronic symptoms that may impact functioning such as cognitive dysfunction, depression, and/or fatigue⁴⁻⁷. The inability to manage their chronic diseases and symptoms may lead to decreased levels of participation in pre-stroke activities and roles (e.g. work, fitness, community, and social activities)^{4,8,9} which may lead to an exacerbation of other chronic diseases such as cardiovascular disease, diabetes, and hypertension^{4,6,7,10}. In turn, these chronic diseases increase the chances that the individual will sustain another stroke¹¹. This cyclic relationship of chronic disease and changes in activity puts individuals with mild stroke at a very high risk of further medical complications, including a 44% risk of death from a second stroke within 10 years¹². A well-established intervention used to manage chronic disease and break this cycle is self-management education.

The concept of self-management was first introduced in 1976 by Creer and colleagues, based on Albert Bandura's concept of self-efficacy and was described as the patient actively participating in their medical treatment¹³. Self-management is now widely used to support people with chronic diseases by helping them learn strategies to manage daily health care needs associated with their condition(s)¹⁴. The beneficial outcomes associated with self-management education include but are not limited to: improved quality of life, physical functioning, self-efficacy, involvement in social activities and activities of daily living (ADL), and reduced symptoms of depression and health care utilization¹⁵. One of most well-established self-management programs is the Chronic Disease Self-Management Program (CDSMP)¹⁹. The CDSMP has been associated with a reduction in health care utilization, improvement of emotional and physical health, improved quality of life, and improved self-efficacy^{19,20,21}. However, the use of self-management education with those

living with a long-term disability following stroke has only recently begun to be explored^{15,16}. The purpose of this pilot study was to determine if self-management intervention, the CDSMP, is feasible and can have an effect on health outcomes for individuals with a mild stroke.

Methods

This study was a single-blind, exploratory, randomized controlled trial with participants who sustained a neurologically mild stroke (NIHSS < 6). Participants who were seen at a university-affiliated acute care hospital and agreed to participate in a volunteer stroke registry were recruited and randomized to either receive the CDSMP intervention or to a control group. All participants in both groups continued to receive any post-discharge rehabilitation services recommended by their treating physician. The study was reviewed and approved by the Washington University in St. Louis Human Research Protection Office (HRPO).

Sampling and Randomization Procedures

Individuals with stroke (n = 86) were recruited between January 2013 and April 2015 based on the following inclusion/exclusion criteria: **Inclusion criteria:** (1) a mild stroke as NIHSS total scores 0-5; (2) English speaking; (3) individuals greater than 18 years of age; and (4) identified as having at least one chronic condition (Work Ability Index survey¹⁷). **Exclusion criteria:** (1) severe aphasia (NIHSS aphasia score=2); (2) moderate to severe cognitive impairment (Montreal Cognitive Assessment (MOCA) Score <21); (3) history of dementia; (4) hemorrhagic stroke; (5) neurological diagnoses other than stroke; (6) major psychiatric illness (A diagnosis of bipolar disorder, obsessive compulsive disorder, panic disorder, post-traumatic stress disorder, schizophrenia, and borderline personality disorder); (7) terminal illness, (8) and a score of no-higher than 20 on the PHQ-9 indicating significant depressive symptoms; and (9) over the age of 90. Of those recruited, 71 met the criteria and were randomized (see CONSORT diagram; Figure 1). The goal of this exploratory study was to establish preliminary effect sizes within the sample of people with mild stroke.

A random number generator was used to randomize patients to groups. Group allocation was not completed until after consent was obtained and final eligibility was determined. To blind study personnel to group allocation, an administrative assistant created sequentially numbered sealed envelopes with treatment assignments for enrolled participants. All study staff, including the study investigators, project coordinators, and treating therapists, were all blinded to group allocation until after final eligibility and baseline testing. Following group assignment, the raters continued to be blinded to group assignment throughout the entire study. All participants were compensated \$25 for each assessment completed but not for participation in the intervention.

Assessment and Intervention Procedures

Baseline testing (Time 1) was completed by a research assistant/rater; after all participants completed baseline testing, CDSMP participants were scheduled to complete the intervention at the next available group session, typically scheduled at the start of the next

calendar month following baseline testing. The intervention sessions were two hours long, once a week, for six weeks. Following the six weekly sessions, those who completed the CDSMP completed a post-intervention assessment (Time 2). This assessment was identical to baseline testing to allow for continued blinding of raters. All participants completed a follow-up assessment at 6-months post-baseline (Time 3).

Intervention

All participants in this study were allowed to participate in any additional rehabilitation services that were recommended by their treating physician; however, these data were not tracked. Participants randomized to the control group did not receive any active intervention as a part of this study but they were offered the opportunity to complete the CDSMP after their participation in this study had ended.

Chronic Disease Self-Management Program (CDSMP)

The CDSMP is an education program based on the concept of self-management¹⁴. The CDSMP has proven effective in preventing/delaying disability, decreasing health-care costs, and improving overall function and health^{18,19}. An overview of the CDSMP sessions is outlined below (Table 1). The CDSMP is focused on three primary goals: medical management; (2) role management; and (3) emotional management¹⁴. The CDSMP was delivered by two licensed occupational therapists (OT) who were certified facilitators. Per the guidelines of the CDSMP, individuals who miss up to two classes are allowed to make the classes up with a facilitator prior to the next session. If any participant had additional absences beyond the two allowed they were treated as a voluntary withdraw in the analysis.

Outcome Measures

We measured outcomes at baseline, post-intervention (treatment group only) and follow-up, with the exception of the NIHSS (Table 2). The consistency in the assessment battery ensures raters remain blinded to group allocation; however, not all outcomes were compared at all time points as some measures were used for screening only. All of the outcome measures used a Likert scale to indicate agreement with statements and all scales of each instrument were included in the analysis.

Analysis

All data were cleaned and checked for accuracy. The distribution of the data was evaluated using histograms and Shapiro-Wilk tests and found to violate the assumptions for parametric testing; therefore, non-parametric methods were employed. Descriptive statistics, Wilcoxon Rank Sum Tests (continuous data), and Fisher's Exact Tests (categorical data) were used to evaluate demographic group differences in the sample as well as differences between those who completed and did not complete the study. Differences between groups in the baseline assessment were compared using Wilcoxon Rank Sum Tests. Change scores, or differences, for each outcome measure were calculated as the post-intervention (Time 2) minus the baseline score (Time 1), follow-up (Time 3) minus post-intervention (Time 2) and follow-up (Time 3) minus baseline (Time 1). Wilcoxon Signed Rank Tests were used to compare change score differences for all participants; effect size was computed using effect size r for

non-parametric data²⁵. Standard effect size interpretations are used for r ; 0.1 indicates a small effect, 0.3 indicates a medium effect, and 0.5 indicates a large effect. Each individual variable in each of these outcome measures is reported using an identifier. See appendix 1.A. for the descriptions of each individual variable.

Results

Demographics and group differences at baseline

Table 3 shows the demographic variables and comparison between groups. There were no significant differences between groups on any of the variables evaluated. In addition, there were no significant differences between those who did and did not complete the study on any of the demographic variables. The CONSORT diagram depicts participant flow through this study (Figure 1). Finally, there were no significant differences between groups (treatment and control) on the baseline assessments (Time 1) with the exception of how well participants feel they are able to manage their health in general, with the control group rating themselves higher (median 8.4, $p = 0.05$).

Within group differences (treatment group only)

For those in the treatment group, outcome measures were compared between the baseline (Time 1) and post-intervention (Time 2) to measure the effect of the intervention and also compared between the post-intervention (Time 2) and follow-up time points (Time 3) to see if any improvements were maintained. Wilcoxon Sign Rank Test for related samples and effect sizes for the baseline and post-intervention scores ranged from 0.04 to 0.61 (very small to large). Effect sizes for the change scores between the post-intervention and follow-up scores ranged from 0.03 to 0.73 (very small to large; Table 4). Statistically significant differences indicated that post-intervention scores were greater compared to baseline scores and that the post-intervention scores were also greater than the follow-up scores.

On the Adapted Illness Intrusiveness Ratings (AIIR), post – baseline, the intervention showed a median increase in intrusiveness of the illness on daily life via total score rating, with a medium effect. Subscales including marital, sexual, and family relations (AIIR_MSFR) and other aspects of life (AIIR_OAOL) showed a median increase and medium effect. Looking at AIIR scores follow up-post, median total score decreased, with a medium effect size. All median scores decreased or remained constant for the subscales. The Chronic Disease Self Efficacy Scale (CDSSES) median scores largely remained constant following the intervention, with small to medium effect sizes. From follow-up to post, again effect sizes were negligible to small. The Health Care Utilization Survey (HCUS) post-baseline revealed a median increase in physician visits (HCU1), with a large effect size, with emergency room visits (HCU2), overnight nights in the hospital (HCU3), and total nights in the hospital (HCU4) remaining constant with small to medium effect sizes. From follow-up to post, median physician visits did not change and ER visits, hospital admissions, and nights in the hospital decreased, with small to large effect sizes. Lastly, the WHOQOL domains of physical health (WHOQO_DOM1) and psychological health (WHOQO_DOM2) showed a median increase and large effect size post-baseline, and a medium effect size follow-up to post indicating maintained improvement in quality of life.

Between group differences

For all participants, change scores were compared between the treatment group and control group. Change scores were calculated as the follow-up score (Time 3) minus the baseline score (Time 1) for each outcome measure. Effect sizes ranged from 0 to 0.35 (no effect to medium effect). Variables with the effect sizes over 0.10 (Table 5). A positive mean change score indicates that the follow-up score (Time 3) was larger than the baseline (Time 1) score.

In the control group there was no effect on the AIIR and a medium effect on CDESES subscale of obtaining help from community, family, and friends, a medium effect and increase in physician visits on the HCUS and medium effect and decrease in median visits to the ER, and nights in the hospital. There was a large effect on number of inpatient hospital visits on the HCUS. There was a medium effect and increase on the WHOQOL physical health subscale. In the treatment group, there a medium effect on the CDESES subscales for obtaining help from community, family, and friends, and social and recreation activities. There was a medium effect on the total RNL score, and a medium effect on the WHOQOL environment domain score. Lastly, there were medium to large effects on all HCUS items, indicating more physician visits and less visits to the ER, inpatient hospital stays, and nights spent in the hospital.

When looking at the between effect size r comparing the two groups, there is minimal effect evident of the treatment group compared to the control group after follow-up assessment. A medium effect is seen of treatment group compared to control on the CDESES subscale of obtaining help from community, family, and friends and managing shortness of breath, and a medium effect on the WHOQOL environment domain score. This indicates that while the treatment group reported improvements in several areas of health at follow-up assessment, most notably in health care utilization, their results are not compelling when compared to the improvements that the control group made over the same time period.

Discussion

The results indicated that there were a measureable effects favoring the treatment group that could potentially be considered clinically significant on a few of the outcome measures: (1) ability to obtain help from community, family, and friends ($r = .25$); and (2) quality of life related to the individuals environment, e.g., friends, social support ($r = .20$). While these results showed that while there were some positive changes in the primary outcome measures these changes are not clinically significant when compared to the control group over a six-month period. The relative inability to detect more positive changes associated with the CDSMP intervention for this sample could be due to several factors that need to be explored further. A few of these potential issues are discussed below.

The first potential issue is the small sample. The CDSMP and the assessment tools used in its evaluation have typically been employed in larger scale studies with populations with limited neurological injury^{14,19,21,26}. The sensitivity of these measures to detect a change in this exploratory study with a small sample may have been compromised. Future studies should consider using additional instruments to evaluate health behaviors that would be more sensitive to subtle changes in behavior that are more likely to occur in this population.

Another potential issue is heterogeneity in the sample. It is clear from the data that this sample had wide variations in not only baseline reporting related to health behaviors but then very different experiences related to changes in health behaviors and participation over the six-month follow-up period. For example, the range of change scores from the control group on group reintegration over the six-month time period ranged from a 15 point decrease to a 15 point increase on a scale of 0-100. The wide variation within this sample likely had a negative impact on the ability to detect a change between groups.

Finally, the possibility exists that the curriculum of the CDSMP is not a good fit with the needs of the mild stroke population. Individuals with mild stroke may have several chronic symptoms associated with their stroke in addition to other chronic diseases which include but not not limited to: cognitive dysfunction, depression, changes in sensory function, motor impairment, and/or changes in activity participation³⁻⁷. The CDSMP provides limited support for these issues and the outcome measures would not have assessed changes within these domains. Future studies should continue to explore self-management programs which are more tailored to the needs of individuals with stroke which have recently started to be investigated^{15,16}. The need to address the chronic symptoms of stroke to help these individuals regain independence and prevent secondary strokes are well documented and this need still exists in light of the findings of this exploratory study^{1,4}.

There were several limitations to this study beyond what has been noted. First, the study relied on the assumption that individuals with mild stroke had additional chronic conditions that would negatively impact health. While this assumption was met there was extreme heterogeneity within this sample in regards to what chronic conditions individuals had and whether or not those conditions would be amendable to a program like the CDSMP. Also, the lack of objective measures for health outcomes, i.e., blood pressure, may have been a missed opportunity to detect a positive change associated with this type of intervention. Finally, the demands of participation in this study may have led to a selection bias wherein only those who were likely doing well after stroke were able to participation. All of these factors need to be taken into account in future studies.

Conclusions

In conclusion, while the results of this study did not find a positive effect to support using the CDSMP intervention with individuals with mild stroke, there were many potential confounding factors that would need to be accounted for in future investigations that would impact the generalizability of these results. This was an exploratory study to investigate the use of this intervention and unfortunately all of these confounding factors could not be taken into account. It may likely be more productive to explore stroke-specific self-management programs used in place of or in conjunction with the CDSMP to help best support this population of individuals with complex and diverse chronic symptoms after neurological injury.

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Appendix 1.A: Variable identifier descriptions

Adapted Illness Intrusiveness Ratings (AIIR)	
AIIR_MSFR	Marital, Sexual, and Family Relations
AIIR_OAOL	Other aspects of life
AIIR_PWBD	Physical wellbeing and diet
AIIR_RSR	Recreation and social relations
AIIR_TOTAL	This can either be total perceived intrusiveness if you summed individual numbers, or it could be average of subscale scores to correct for differences in number of items in each domain
AIIR_WF	Work and finances
Chronic Disease Self-Efficacy Scale (CDSES)	
CDSESUB1	Exercise regularly
CDSESUB10	Control/manage depression
CDSESUB2	Get information on disease
CDSESUB3	Obtain help from community, family, friends
CDSESUB4	Communicate with physician
CDSESUB5	Manage disease in general
CDSESUB6	Do chores
CDSESUB7	Do social/recreation activities
CDSESUB8	Manage symptoms
CDSESUB9	Manage shortness of breath
Health Care Utilization (HCU)	
HCU1	Physician visits
HCU2	ER visits
HCU3	Inpatient visits
HCU4	Total nights in hospital
Reintegration to Normal Living (RNL)	
RNLTOT	Total score
World Health Organization Quality of Life Questionnaire (WHOQOL-BREF)	
WHOQO_DOM1	Physical health
WHOQO_DOM2	Psychological
WHOQO_DOM3	Social relationships

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FIGURE 1.
CONSORT DIAGRAM

Table 1Treatment Group (CDSMP^{*}) Session Activities

Session	Activities
Session 1	<ul style="list-style-type: none"> • Identifying common problems • Class overview and responsibilities • Acute vs. chronic conditions • Cognitive symptoms management • Introduction to action plans
Session 2	<ul style="list-style-type: none"> • Feedback/problem solving • Dealing with emotions • Physical activity and exercise • Action planning
Session 3	<ul style="list-style-type: none"> • Feedback/problem solving • Breathing techniques • Muscle relaxation • Pain and fatigue management • Endurance activities • Action planning
Session 4	<ul style="list-style-type: none"> • Feedback/problem solving • Future plans for health care • Healthy eating • Communication skills • Problem solving • Action planning
Session 5	<ul style="list-style-type: none"> • Feedback/problem solving • Medication usage • Making informed treatment decisions • Depression management • Positive thinking • Guided imagery • Action planning
Session 6	<ul style="list-style-type: none"> • Feedback/problem solving • Working with your health care professional and health care system • Looking back and planning for the future

* Chronic Disease Self-Management Program

Table 2

Description of outcome measures

Construct	Measure	Description
Screening Measures Only		
General Cognition	<i>Montreal Cognitive Assessment (MOCA)</i> ²⁰	The MOCA is a publically-available cognitive screening tool to screen for dementia
Stroke Impairment	<i>National Institutes of Health Stroke Scale (NIHSS)</i> ²	The NIHSS is a clinical assessment tool to evaluate stroke severity.
Health Conditions	<i>Work Ability Index (WAI)</i> ¹⁷	The WAI is a self-assessment of work ability; we utilized the current diseases or injuries item to quantify chronic health conditions.
Primary Outcome Measures		
Health Behaviors	<i>Chronic Disease Self-Efficacy Scale (CDSES)</i> ²¹	The CDSES was designed by the developers of the Chronic Disease Self-Management Program to evaluate participants' confidence to engage in healthy, self-management behaviors. The CDSES will take 2 minutes to administer.
Health Status	<i>Adapted Illness Intrusiveness Ratings</i> ²²	This adapted version of the Illness Intrusiveness Ratings scale is intended to measure the extent which participants feel their illnesses are interfering with their everyday life activities. This measure will take approximately 2 minutes to administer.
Healthcare Utilization	<i>Health Care Utilization Survey</i> ²³	This survey is a self-report measure of number physician visits, number ER visits, number of hospitalizations, and number of nights spent in the hospital over the previous six-months. The survey will take approximately 2 minutes to administer.
Secondary Outcome Measures		
Quality of Life	<i>World Health Organization Quality of Life Questionnaire (WHOQOL-BREF)</i> ²⁴	The WHOQOL-BREF is an internationally validated measure that assesses a client's perceptions of their quality of life using four scales- physical health, psychological health, social relationships, and the environment. The WHOQOL-BREF will take 10 minutes to administer.

Table 3

Demographic comparisons between groups

Variable	Control (N=27)					Treatment (N=18)				P-value*
	Median	Mean	Range	Std Dev		Median	Mean	Range	Std Dev	
Age	63.5	62.65	39.0-82.0	10.65		59.00	57.67	32-82	11.62	0.1554
Years of education	13.00	13.85	9-20	2.56		14.00	14.33	12-18	2.17	0.3798
Time since stroke (days)	15.00	19.62	6-124	22.21		13.00	14.50	5-33	8.25	0.3153

Variable	Descriptors	Control (N=27)		Treatment (N=18)		P-value**
Marital	Married/Cohabitating		12	10		0.55
	All others		15	8		
Sex	Female		14	9		1.00
	Male		13	9		
Race	African-American		11	13		0.07
	Caucasian		16	5		
Number of strokes	1		24	17		1.00
	2		2	1		
Work prior to stroke?	No		11	9		0.74
	Yes		11	6		

* Wilcoxon Rank Sum Test

** Fisher's Exact Test

Table 4
Within group differences in change scores (baseline to post-intervention and post-intervention to follow-up) in the treatment group

Outcome	Change Score	(Post – Baseline)			(Follow-up – Post)		
		Median	Range	effect size	Median	Range	effect size
Primary	AIIR_MSFR	3.00	-8.00 11.00	0.41*	-2.50	-10.00 3.00	0.71*
	AIIR_OAOL	1.00	-9.00 15.00	0.42	-1.50	-16.00 5.00	0.51
	AIIR_PWBD	0.50	-7.00 9.00	0.17	0.00	-10.00 8.00	0.06
	AIIR_RSR	0.00	-14.00 13.00	0.07	0.00	-14.00 9.00	0.16
	AIIR_TOTAL	7.00	-41.00 55.00	0.30	-4.50	-59.00 17.00	0.38
	AIIR_WF	0.00	-4.00 8.00	0.18	0.00	-9.00 6.00	0.03
	CDSesub1	0.00	-4.00 4.67	0.17	-0.33	-4.67 6.67	0.05
	CDSesub10	0.50	-1.83 4.67	0.34	-0.08	-5.00 2.83	0.10
	CDSesub2	0.00	-3.00 9.00	0.41	0.00	-7.00 4.00	0.30
	CDSesub3	0.13	-1.75 4.50	0.35	0.25	-3.50 4.00	0.18
	CDSesub4	0.00	-3.00 6.67	0.13	0.00	-2.67 4.00	0.05
	CDSesub5	0.40	-2.20 2.60	0.15	0.40	-2.40 3.00	0.17
	CDSesub6	0.17	-3.33 4.33	0.24	0.17	-3.00 2.00	0.14
	CDSesub7	0.00	-2.00 3.00	0.10	0.00	-3.50 3.00	0.13
	CDSesub8	0.00	-3.80 4.20	0.04	0.10	-3.60 4.80	0.11
	HCU1	0.50	-2.00 8.00	0.58	0.00	-7.00 20.00	0.25
Secondary	HCU2	0.00	-1.00 3.00	0.31*	-1.00	-6.00 3.00	0.66*
	HCU3	0.00	-7.00 2.00	0.12*	-1.00	-2.00 2.00	0.73*
	HCU4	0.00	-20.00 8.00	0.27	-1.00	-9.00 5.00	0.23
	RNLTOT	0.50	-6.00 14.00	0.21	1.50	-9.00 10.00	0.24
	WHOQO_DO M1	0.86	-2.29 5.14	0.61	0.57	-2.86 5.71	0.29
	WHOQO_DO M2	0.67	-2.67 4.67	0.59	-0.67	-6.00 2.67	0.31
	WHOQO_DO M3	0.00	-4.00 6.67	0.16	0.67	-6.67 6.67	0.10
	WHOQO_DO M4	0.00	-2.00 2.50	0.21	1.00	-2.00 4.00	0.27

*Note: indicates p-values <0.05

Table 5

Descriptive statistics for primary and secondary outcome measures and effect size differences between treatment and control groups.

Outcome	Change Score (Follow-up – Baseline)	Control (n=27)			Treatment (n=18)			Between Effect size r
		Median	Range	Within Effect size r	Median	Range	Within Effect size r	
Primary	AIR_OAOL	0.00	-13.00 13.00	0.06	0.50	-9.00 6.00	0.13	0.14
	AIR_RSR	0.00	-14.00 10.00	0.01	1.00	-14.00 9.00	0.10	0.00
	CDSesub1	0.00	-4.67 5.00	0.00	0.33	-5.33 5.33	0.18	0.12
	CDSesub3	-0.50	-4.00 5.00	0.30	1.05	-2.00 5.00	0.41	0.35 *
	CDSesub4	0.00	-2.00 3.67	0.12	0.38	-4.67 6.00	0.17	0.10
	CDSesub7	0.00	-4.00 3.00	0.10	0.50	-2.00 2.50	0.25	0.17
	CDSesub9	0.00	-7.00 9.00	0.25	-1.00	-4.00 4.00	0.16	0.25
	RNLTOT	0.00	-15.00 15.00	0.07	2.00	-10.00 16.00	0.40	0.13
	HCUS1	1.00	-17.00 12.00	0.38 *	1.00	-6.00 19.00	0.51 *	0.00
	HCUS2	-1.00	-6.00 4.00	0.30	-1.00	-6.00 2.00	0.52 *	0.07
Secondary	HCUS3	-1.00	-2.00 1.00	0.85	-1.00	-8.00 1.00	0.46 *	0.04
	HCUS4	-2.00	-10.00 11.00	0.30	-1.00	-15.00 4.00	0.55 *	0.01
	WHOQQ_DO M1	0.57	-3.43 4.57	0.34	1.05	-1.71 6.29	0.83 *	0.18
	WHOQQ_DO M2	0.00	-7.33 2.00	0.20	0.33	-4.67 2.67	0.14	0.18
	WHOQQ_DO M3	0.00	-5.33 6.67	0.10	0.67	-5.33 5.33	0.24	0.17
	WHOQQ_DO M4	0.00	-5.00 4.00	0.19	0.25	-2.00 6.00	0.40	0.20

* Note: indicates p-values <0.05.