



Existing community delivered stroke self-management interventions mostly are not addressing the establishment of a patient-provider relationship and poorly address other key domains and health determinants

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Key Points

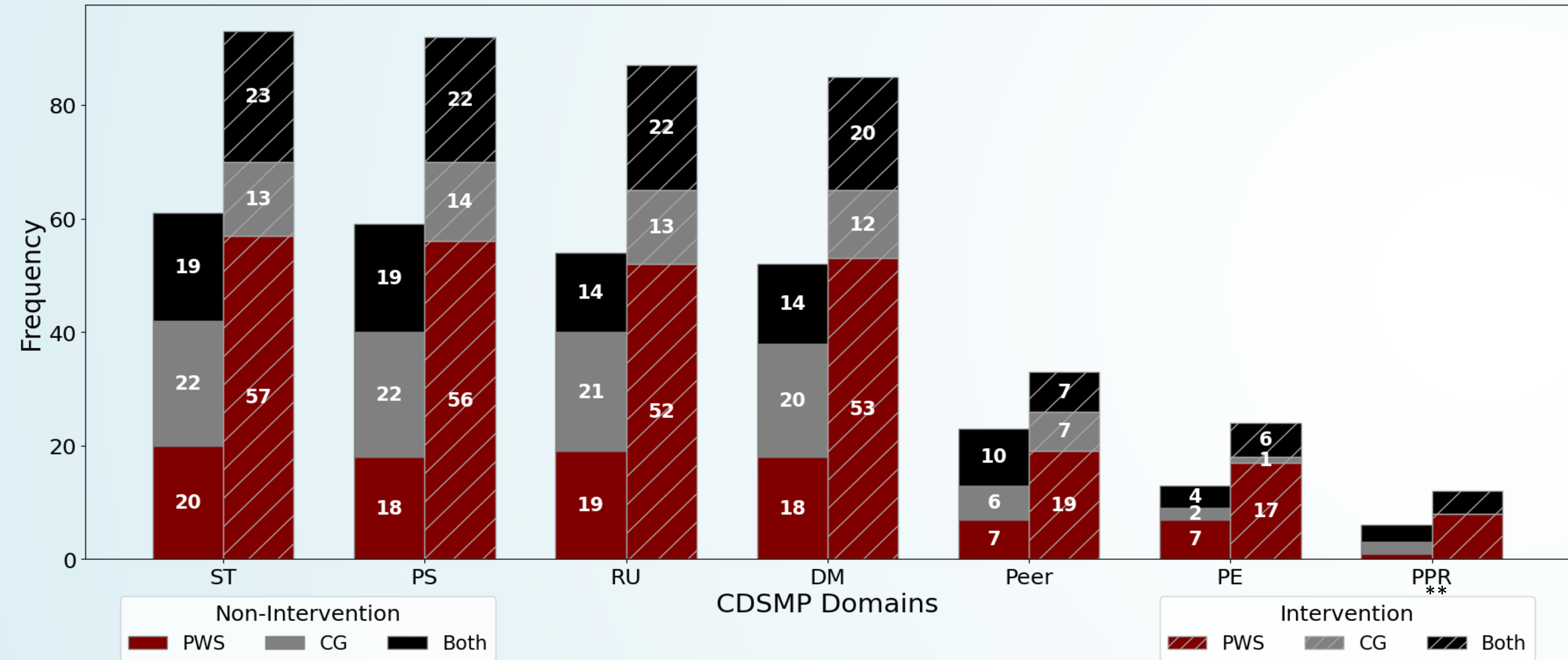
- 1. Stroke CDSMP developers may benefit by increasing intervention components that facilitate the relationship between the patient and provider.
- 2. Future stroke CDSMP interventions should aim to increase the use of the physical environment (PE).
- 3. Results reinforce the need to increase the use of core domains in existing and future stroke CDSMPs
- 4. The strong correlations between Self-Tailoring—Problem Solving and Resource Utilization—Decision Making suggest that these pairs of intervention approaches share common factors.



References

Introduction: Stroke is a leading cause of disability that results in deficits across multiple functional domains.¹ Chronic disease self-management program (CDSMP) interventions developed for arthritis and cancer populations improve life quality and self-efficacy.^{2,3} Evidence supports that CDSMPs that are effective at improving function and wellness address a core set of domains, which include problem solving (PS), self-tailoring (ST), patient-provider relationship (PPR), resource utilization (RU), decision making (DM), peer support (Peer), and physical environment (PE). CDSMPs designed for persons with stroke (PWS) and their caregivers (CG) are not well established or studied.^{4,5,6} A scoping review was completed to identify the extent to which existing stroke CDSMPs addressed the core CDSMP domains. The study aim is to inform future stroke CDSMP interventions by showing where gaps exist from use of core CDSMP domains.

Figure 1. Frequency that each CDSMP domain was found in stroke studies.



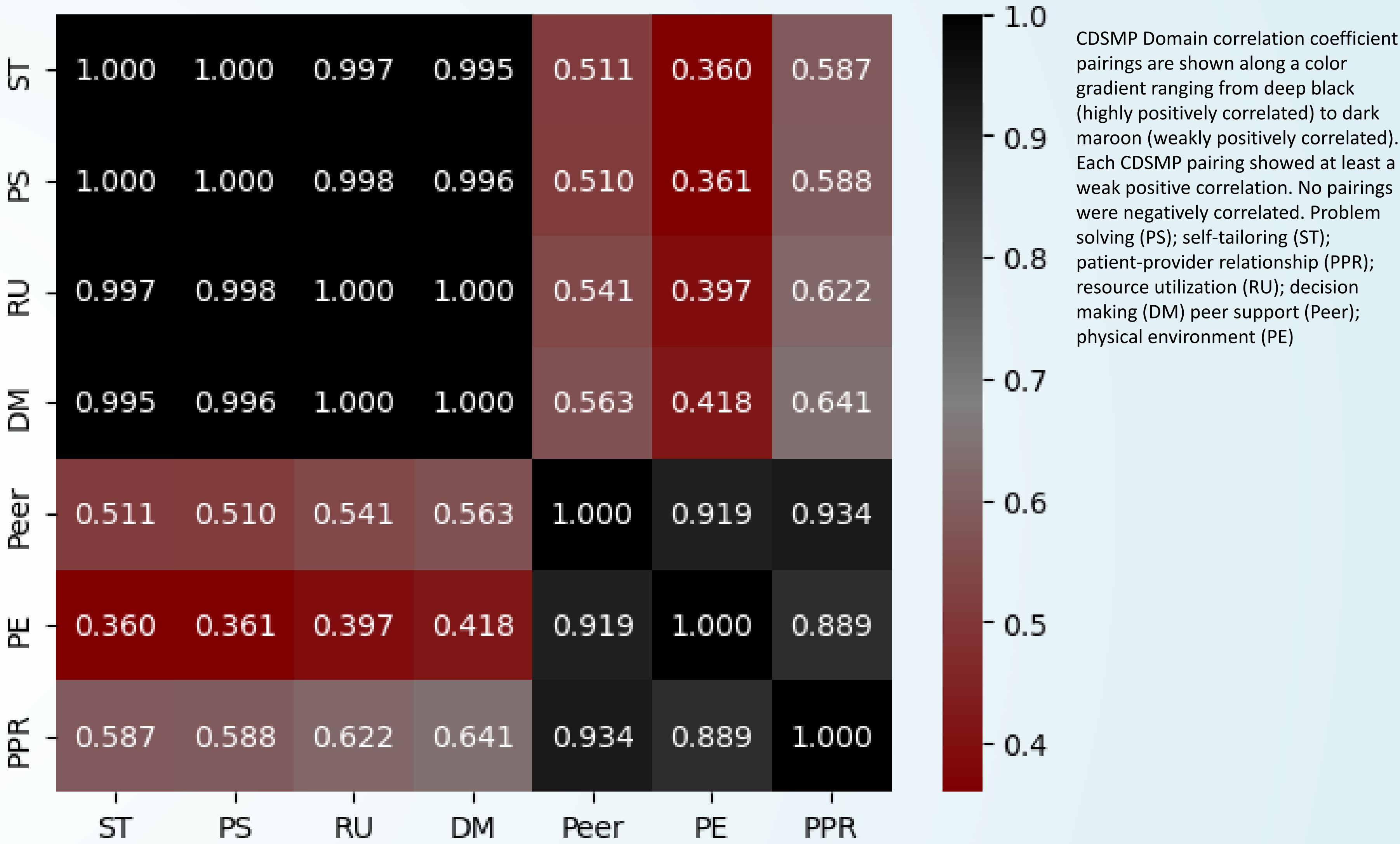
The graph shows CDSMP domain usage from greatest to least (from bottom to top) broken down by study type and participant target. The numbers within the graph represent the frequency of each domain used.

** = PPR was present in 1 PWS, 2 CG, and 3 Both of the Non-Intervention studies and 8 PWS, 0 CG, and 4 of the Intervention studies.

Methods: A data subset was analyzed from a larger systematic scoping review of existing stroke CDSMPs that was completed according to Joanna Briggs Institute methodology to identify the frequency and patterns of CDSMP domains addressed in existing interventions.⁵ Analysis was completed using intervention descriptions (quantitative studies) and participant descriptions of intervention components (qualitative studies), which were mapped to the Stanford CDSMP and World Health Organization key determinants of Health domains using a two-reviewer process.⁶ Results were tabulated in Microsoft Excel before being imported into Python 3 for further analysis. Two-tailed independent t-tests and correlation analyses were then performed using the sci.py and Pandas python packages^{7,8} to assess for differences and correlations between CDSMP domain usage across stroke studies in the dataset. Alpha was set at 0.05. Graphics were generated using excel and the seaborn python package⁹.

Results: A total of 156 papers from 21 countries published between 1989 and 2023 with both male and female participants ranging from 18-90 years of age were included in analysis. 78 (50%) studies aimed at PWS, 42 (27%) at both CG and PWS, and 36 (23%) at CG alone. CDSMP domains usage by study type can be seen in figure 1. We found the frequency of domains used across all studies to be as follows: 154 (98.7%) for ST, 151 (95.8%) for PS, 141 (90.4%) for RU, 137 (87.8%) DM, 56 (35.9%) Peer, 37 (23.7%) for PE, and 18 (11.5%) for PPR. Correlation coefficients for domain pairings can be seen in figure 2. There were no significant differences between the CDSMP domains included in intervention versus non-intervention studies.

Figure 2. Heat map showing correlations across CDSMP domains in stroke studies



CDSMP Domain correlation coefficient pairings are shown along a color gradient ranging from deep black (highly positively correlated) to dark maroon (weakly positively correlated). Each CDSMP pairing showed at least a weak positive correlation. No pairings were negatively correlated. Problem solving (PS); self-tailoring (ST); patient-provider relationship (PPR); resource utilization (RU); decision making (DM) peer support (Peer); physical environment (PE)

Discussion

- 1. The patient-provider relationship was very rarely identified in interventions and qualitative studies of stroke self-management ,which is in contrast with evidence-based CDSMPs that list the development of a patient-provider relationship as a key domain for self-efficacy in long term disease management.^{1,2,10}
- 2. Stroke CDSMPs rarely cited use or consideration of the physical environment (PE), which is in contrast with recommended guidelines for living well with chronic conditions¹¹ and also in contrast with PE being listed as a key consideration in the ICF framework and the WHO key determinants of health.¹² Stroke is associated with varying levels of physical and sensory impairments that may reduce learning and carryover of self-management strategies in the CDSMP.¹ Additionally, the fear of falls in PWS is high¹³. Despite this, this result identifies an opportunity to improve the use of the physical environment to improve the effectiveness of stroke CDSMPs.
- 3. Many of the CDSMP domains co-occurred in the stroke CDSMP interventions. Co-occurrence of the domains that involved cognitive and executive functioning, which included ST⁴ and PS⁴ (ST-PS) as well as RU⁴ and DM (RU-DM), may indicate common factors and make it reasonable to collapse the domain numbers by pairing domains in future analyses. The process of “applying skills and knowledge to oneself” in ST is inherently a part of PS which could explain this relationship. Similarly to the ST-PS pairing , the process of DM is intrinsic to the definition of RU which may explain why they are thus strongly correlated.

Conclusion: There is a dire need to better address peer support, physical environment, and the development of a patient-provider relationship for PWS and their CG