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Understanding factors influencing sedentary behaviour after stroke: different priorities in different settings.

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Background :

- Stroke survivors are more sedentary than healthy age-matched controls, independent of functional capacity, even one year after stroke (Tieges et al., 2015). Given the often debilitating effects of stroke, reducing sedentary behaviour might be more achievable than increasing moderate-vigorous intensity physical activity. Before intervening, it is important to understand current perceptions and behaviours relating to sedentary behaviour after stroke.
- We conducted a qualitative study to understand factors influencing sedentary behaviour in stroke survivors in two inpatient stroke services each with linked community stroke rehabilitation provision. The study contributes to a programme of research designed to reduce sedentary behaviour after stroke.

Intervention development process



Methods:

- Non-participant observations of routine practice in two stroke services (133 hours in total), we observed 25 stroke survivors, 5 caregivers, and 78 staff members;
- Interviews with stroke survivors at six or nine months post-stroke (n= 31), their caregivers (n= 12), and stroke service staff (n= 30);
- Interviews were structured using the COM-B model (Michie et al., 2011) and explored capabilities, opportunities and motivations associated with reducing/breaking up sedentary behaviours;
- Observational data were analysed thematically, interview data were analysed using the Framework Method;
- One service was located in the North of England and one in Scotland.

Findings: inpatient settings

In stroke units, routine nursing and therapy practices often increased the likelihood that stroke survivors would be sedentary for long periods. Nursing staff relied on therapists to prescribe appropriate movement strategies for stroke survivors. Observational and interview data indicated staff concerns about stroke survivors’ physical and psychological capability to move safely and an organisational emphasis on prioritising falls risk reduction influenced the extent to which breaking up sedentary behaviour (reducing sitting and lying) during waking hours was part of staff’s practice. The built environment and location and use of equipment at the bedside, in corridors and in therapy rooms restricted spaces in which stroke survivors could stand and move easily.



Staff understanding of sedentary behaviour did not correspond with the accepted definition. Staff misconceptions about sedentary behaviour were evident in both inpatient and community settings and included for example: suggesting occupational therapy tasks such as engaging in cognitive activities whilst sitting, or completing artwork in a group whilst sitting constituted breaking up sedentary behaviour.

“If someone wasn’t engaging in any form of previous activity... then that would, to me, have been sedentary behaviour, and I would talk to patients about being sedentary, and the benefits of any form of activity, be it cognitive activity, as well as physical” (Occupational Therapist).”

Opportunities to integrate interactions around sedentary behaviour into routine staff activities were identified, including as part of routine care tasks such as transfer from bed to chair, washing and dressing, using the toilet and bathroom for personal care, during intentional rounding checks conducted by nurses and healthcare support workers, as part of planned therapy provision, and as part of therapist directed independent or supported therapy practice. Staff indicated their preference for increasing standing and moving after stroke as part of rehabilitation and secondary health promotion.



Activity	Frequency	Duration	Notes
Walking	3 times	10 min	
Sitting	2 times	15 min	
Lying	1 time	30 min	
Standing	4 times	5 min	
Transferring	2 times	10 min	
Personal care	1 time	15 min	
Therapy	1 time	30 min	
Meals	3 times	10 min	
Hygiene	2 times	10 min	
Rest	1 time	30 min	
Exercise	1 time	15 min	
Medication	2 times	10 min	
Communication	3 times	10 min	
Education	1 time	15 min	
Documentation	2 times	10 min	
Assessment	1 time	15 min	
Planning	1 time	15 min	
Implementation	1 time	15 min	
Evaluation	1 time	15 min	



Findings: community settings

All participants identified the initial impact on stroke survivors’ and caregivers’ confidence of leaving the structured environments of stroke units with easy access to specialist staff and returning home where contact with stroke specialist staff was often very limited. Inpatient experiences initially shaped stroke survivors’ and caregivers’ expectations and behaviour in community settings; although inpatient staff largely sought to increase independence, opportunities for stroke survivors and caregivers to be more independent were more limited than in community settings.

“Obviously if they were really struggling I would probably help them a bit more but I would always... if they can do it themselves, encourage to do it themselves” (Health Care Support Worker).”



Community staffs’ focus on facilitating independent activity and their routine emphasis on enabling stroke survivors to regain functional movement and participate in meaningful activity highlighted opportunities to incorporate sedentary behaviour reduction. This approach was positively received by most stroke survivors and caregivers; particularly when they understood these could be spread across the day.

“So, she said ‘once you get up and wash and everything, half an hour rest. If then you make the beds, [then have] half an hour rest’ ... so actually it’s quite nice for me, it’s a bit of a new thing... where I can sit and I think, I don’t feel guilty (Stroke Survivor).”



When talking about things that would help or motivate them to break up sitting time stroke survivors were also clear that activities should be meaningful to them and be integrated into their everyday lives.

“You break up the time that you sit when it is personally or socially convenient to do it. If you spend your whole day walking 10,000 steps then that seems to me to be a waste of time, you walk 10,000 steps because it’s part of everyday living and you’re doing something productive... then it’s worth doing” (Stroke survivor).”



Community based stroke service staff identified that sedentary behaviour reduction was an important addition to the post-stroke health and lifestyle advice they already provided as part of their routine contacts with stroke survivors and caregivers in the home or in outpatient settings.

**Discussion and conclusion:** Differences in factors influencing sedentary behaviour after stroke were identified in inpatient and community stroke services. In the inpatient setting these were driven in part by organisational pressures, but also by space restrictions and staffs’ routine practices which sometimes increased the likelihood that stroke survivors would be sedentary for long periods. Opportunities to integrate reductions in sitting and lying were evident in inpatient settings and were consistently evident in the routine practice of community stroke service staff. A key factor in sustaining sedentary behaviour reduction in both settings is integrating activities to reduce time spent sitting and lying in everyday functional activities and utilising support from caregivers. These findings informed a co-production study in which we developed an intervention to address sedentary behaviour post-stroke commencing in inpatient settings as part of routine practice, and continuing when stroke survivors return to the community.