

WEBINAR

Identifying Critical Physical Demanding Tasks of Personal Support Workers and the Implications for Ergonomic Interventions

Daphne Ho | June 22, 2022

Identifying Critical Physical Demanding Tasks of Personal Support Workers (PSWs) and the Implications for Ergonomic Interventions

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(Anderson College, 2019)



(Cascade Maids,, 2019)



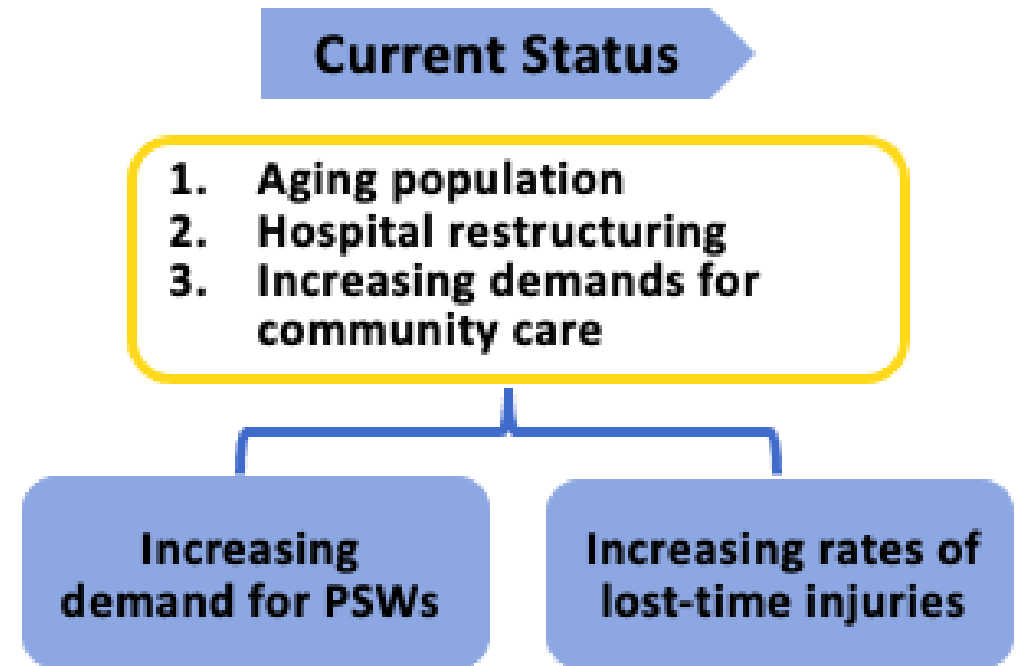
(The Journal, 2014)



(Vendley, n.d.)

Background

- PSW role and job duties
 - Provide personal care to clients
 - Community and facility environments
- Increase importance of this role and higher demand for PSW
 - Aging population and demand for community care ¹⁻⁴
 - Growing PSW population and percentage of community care sector ⁵



Why the PSW population?

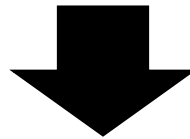
- High number of allowed lost-time claims in 2020 ⁶
 - High injury rates in PSW population due to sprains/strains ⁷
- High physical work demands: dynamic and non-cyclic
 - Work in varying environments (different space, less regulations)
 - Work with varying clients (height, weight, care needs)



(City College, 2019)

Possible Ergonomic Interventions

What are PSW work tasks? Which tasks do they do most frequently and which are the most physically demanding?

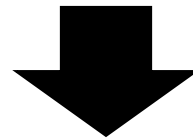


- Physical Employment Test
- Education programs and training
- Real-time workload management system

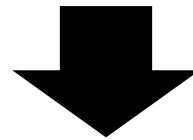
Closing the Gap

Phase 1 Objective - Through distribution of a survey to PSWs:

- Identify the most physically demanding and frequently completed PSW tasks
- Identify important contextual factors



- Work circuit reflective of common and physically demanding PSW work tasks



- Physical Employment Test
- Education programs and training
- Real-time workload management system

Methodology – Survey Design and Distribution

- Referenced Physical Demands Description for PSWs
- Focus groups conducted with PSWs to further develop the survey
- Survey distributed to ~5500 PSWs
 - Received 805 total responses with 443 complete response (> ideal sample size)


Methodology – Final Survey Design


- Section I: Employment Information/Demographics
- Section II: Rating Physical Demands
 - **A:** Travelling to Clients and Before-Shift Tasks
 - **B:** Client Transfers
 - **C:** Assistance of Client Mobility
 - **D:** Set up and Use of Assistive Lifting Devices
 - **E:** Client Bathing and Personal Care
 - **F:** Client Dressing
 - **G:** Helping Client's Medical Needs
 - **H:** Moving and Turning the Client
 - **I:** Light Housework
 - **J:** Client Escort


N/A	1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Scale:
N/A = I don't do this task/not applicable

1 = Very Easy
➤ "Like nothing at all" 

2 = Easy
➤ "Light effort" 

3 = Somewhat Hard
➤ "Moderate effort, but I can do more" 

4 = Hard
➤ "I can do a little more, but not much" 

5 = Very Hard
➤ "That's all I can do" 

Methodology – Final Survey Design

- Section II: Rating Physical Demands (cont.)
 - Asked participants to pick the factor that increases the physical demand THE MOST of the specified task type

Helping client with moving from one place to another (ex. onto toilet, into bathtub)

- Heavy client (versus an average weight client)
- Client with limited mobility (versus a client that is more mobile)
- Not having an assistive device (versus having a device to help)
- Helping the client by yourself (versus having another person help you)

- Section III: PSW Feedback
 - State your top 3 most physically demanding and frequently completed tasks

Methodology – Survey Results

- Section I: Employment Information/Demographics
 - Counts performed
- Section II: Rating Physical Demands
 - Descriptive statistics: Frequency counts and mean rating calculated for each task
 - Top ranked tasks with a response rate of >75% were deemed most physically demanding
 - Examined ranking for contextual factors that increased physical demand the most for each task type
- Section III: PSW Feedback
 - Coded themes in terms of task types and contextual factors

Results – Survey Responses

Section I: Employment Information/Demographics

Demographic information of survey respondents as a percentage of the total number of responses.

Gender	Age	Province	Experience (as a PSW)	Employment Type
Male (6%)	19-25 y.o (2%)	British Columbia (2%)	0-4 years (26%)	Full-time: 30+hrs/week (68%)
Female (93%)	26-35 y.o (14%)	Alberta (59%)	5-9 years (25%)	Part-time: <30hrs/week (32%)
Gender diverse (0%)	36-45 y.o (28%)	Saskatchewan (0%)	10-14 years (20%)	
Undisclosed (1%)	46-55 y.o (30%)	Manitoba (0%)	15-19 years (14%)	
	56-65 y.o (22%)	Ontario (39%)	20 years or more (14%)	
	66+ y.o (4%)	Nova Scotia (0%)		

Results – Most Physically Demanding Tasks (Section 2)

Rank	Top 12 Most Physically Demanding Tasks	Mean Score	General Task Type
1	Moving client from a shower chair/bathtub bench to a <u>wheelchair</u>	3.17	Transfers + Wheel-chair
2	Moving client from a <u>wheelchair</u> to the shower chair/bathtub bench	3.16	
3	Moving client from a bed to a <u>wheelchair</u>	3.00	
4	Moving client from a <u>wheelchair</u> to the toilet	2.99	
5	Moving client from the toilet to a <u>wheelchair</u>	2.99	
6	Moving client from a <u>wheelchair</u> to a bed	2.94	
7	Moving the client on a <u>bed</u>	2.89	Repositioning + Bed
8	Turning/rolling the client on a <u>bed</u>	2.72	
9	Moving the client on a <u>bed</u> using a device to help (ex. slider sheet)	2.62	
10	Using a <u>Hoyer floor lift</u> to move a client from one place to another	2.59	Mechanical Lift
11	Helping client with putting on and taking off compression socks	2.58	Dressing
12	Turning the client away from/towards yourself on the bed (1-person move) using an assistive device	2.51	Repositioning + Bed

Results – Most Physically Demanding Tasks (Section 3)

Rank	Identified Task Themes	Freq. Count
1	Client transfers and manipulation (without assistive device)	442
2	Tasks completed in the washroom (Ex. Washing client, transfers between washroom facilities)	208
3	Dressing client (ex. Compression socks, incontinence products)	104
4	Wheel-chair or walker related (Ex. Transfers, pushing)	85
5	Household chores	56
6	Moving client using lifts, moving lifts	53
7	Assisting with client care plan (Ex. Wound care, medication assistance)	49
8	Personal care (general)	33
9	Driving or travelling tasks, transfers into car	23
10	Assisting client with exercises	16

Results – Influence of Contextual Factors on Physical Demand (Section 2)

Task Types	Top Contextual Factor
Moving client from one place to another (ex. Bed to wheelchair, wheelchair to toilet)	Heavy client
Moving the client on a bed	Heavy client
Turning/rolling the client on a bed	Heavy client
Using a Hoyer floor lift to move a client	Heavy client
Helping client with dressing	Client with limited mobility
Washing a client and performing personal care tasks	Client with limited mobility
Providing client with medical/treatment support	Client with limited mobility
Pushing a client in a wheelchair	Cramped environment
Helping a client who requires a cane/walker	Cramped environment
Helping client with moving from one place to another (ex. Onto toilet, into bathtub)	Client with limited mobility
Using a ceiling lift to move a client	Heavy client

Results – Influence of Contextual Factors on Physical Demand (Section 2)

Client transfers (helping client move from one place to another)

Rank	Contextual Factors	% Response
1	Heavy client (versus an average weight client)	32.61%
2	Client with limited/no mobility (versus a client that is more mobile)	25.18%
3	Moving client by yourself (versus having another person to help you)	17.75%
4	Not having an assistive device (versus having a device to help)	17.03%
5	Client is on a basic bed (versus a hospital bed)	7.43%

Results – Influence of Contextual Factors on Physical Demand (Section 3)

Rank	Identified Contextual Themes	Freq. Count
1	High client weight, tall client	185
2	Low mobility client, high fall risk client	174
3	Difficult/aggressive/low-motivation/ESL Client	120
4	Doing task by themselves (1-person)	86
5	Cramped environment/bad layout/dirty	52
6	Inaccurate client info/lack of equipment	40
7	High workload/scheduling/bad co-worker or management	38
8	Low bed height/non-adjustable bed	37
9	Uncomfortable (gender-related, emotional, family)	29
10	Frequent bending/kneeling/climbing/standing	24

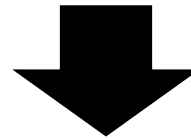
Results – Most Frequently Completed Tasks (Section 3)

Rank	Identified Task Themes	Freq. Count	Specific Task
1	Tasks completed in the washroom (Ex. Washing client, transfers between washroom facilities)	313	Showering/bathing client
2	Assisting with client care plan (Ex. Wound care, medication assistance)	242	Medication assistance
3	Dressing client (Ex. Compression socks, incontinence products)	225	Assisting client with donning compression socks
4	Household chores (Ex. Bed making, grocery shopping)	176	
5	Personal care (general)	149	
6	Client transfers and manipulation (without assistive device)	98	
7	Assisting client with exercises	36	
8	Feeding	36	
9	Wheel-chair or walker related (Ex. Transfers, pushing)	16	
10	Communicating, fun activities, companionship	12	

Discussion

Phase 1 Objective - Through distribution of a survey to PSWs:

- Identify the most physically demanding and frequently completed PSW tasks
- Identify important contextual factors



- Work circuit reflective of common and physically demanding PSW work tasks

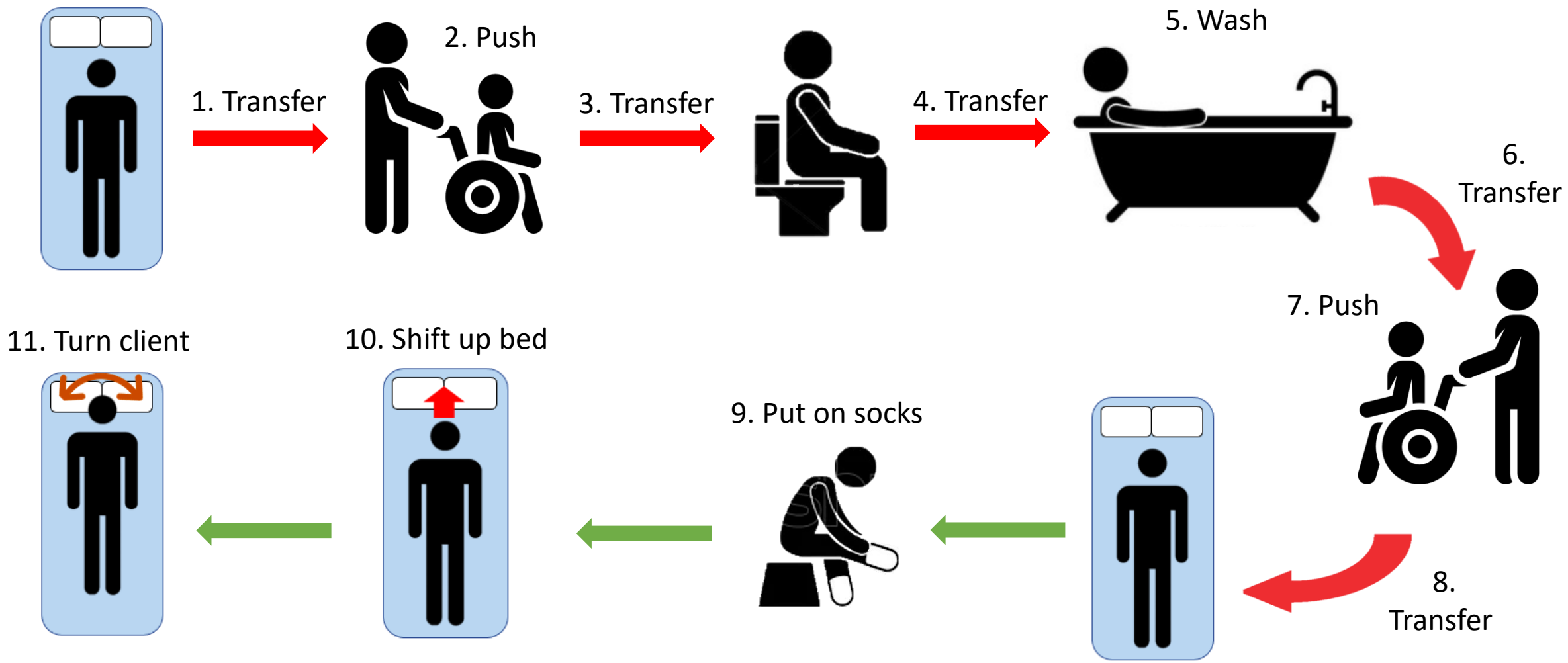


- Physical Employment Test
- Education programs and training
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Discussion

- Top ranked task types (in terms of both physical demand and frequency) from Section 2 and 3:
 1. Transfer tasks involving wheelchair, transfers within the washroom
 2. Repositioning client in bed
 3. Assisting client with putting on compression socks
 4. Showering/bathing client
- Contextual factors:
 - Top rated contextual factors for the top ranked task types:
 - High client weight
 - Limited mobility

Proposed Circuit Design

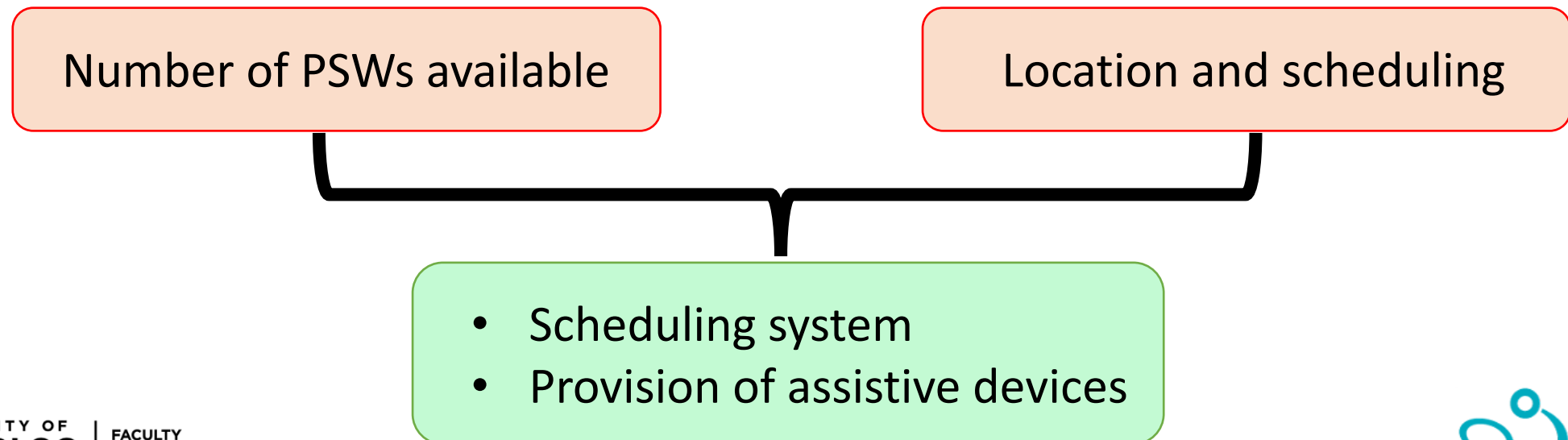


Discussion – Prior Research

- Results agreeable to prior studies in terms of identification of most physically demanding patient handling tasks ⁹⁻¹³
- Prior research on patient handling focused on nurses
 - Differences between nurses and PSWs: level of regulation, working environment, level of manual work ¹⁴⁻¹⁶
 - Differences can exacerbate the physical demand requirements for PSWs

Discussion – 1 vs 2 Person Assistance

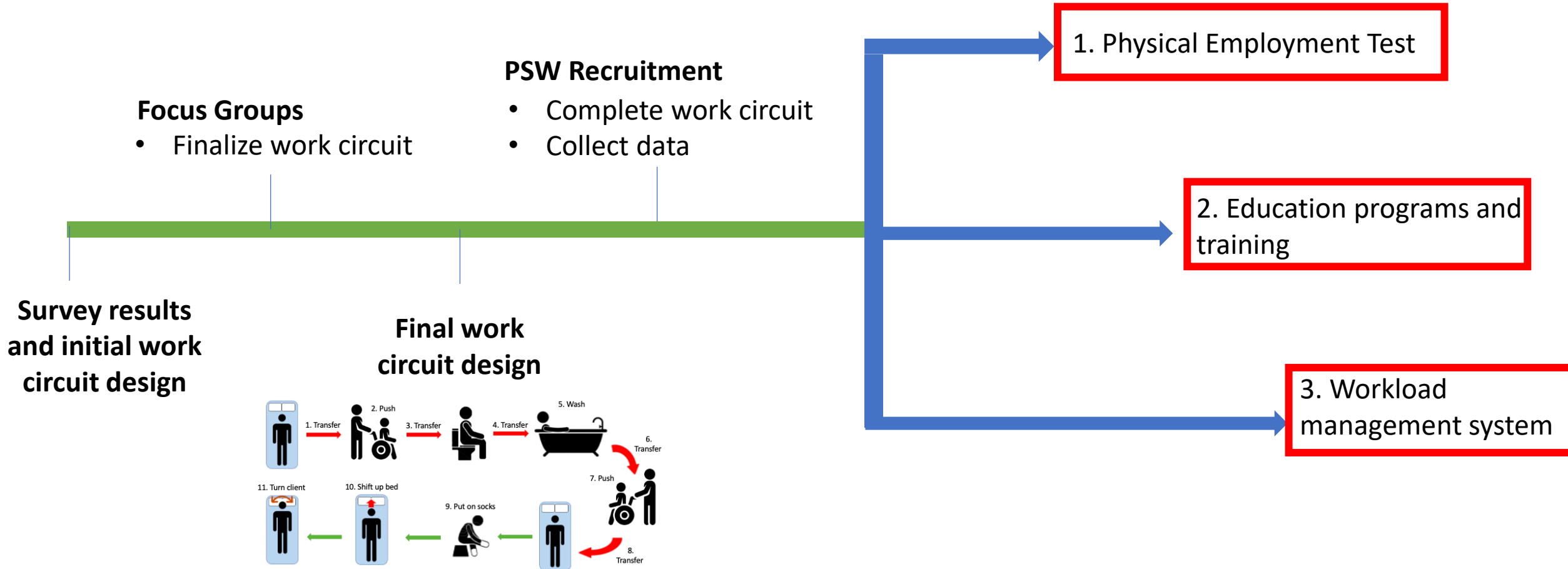
- Client weight and mobility level were the most important factors that increase physical demand
- 2-person assistance could alleviate physical demand
 - Potential issues with PSWs in homecare?



Discussion – Interesting Finds

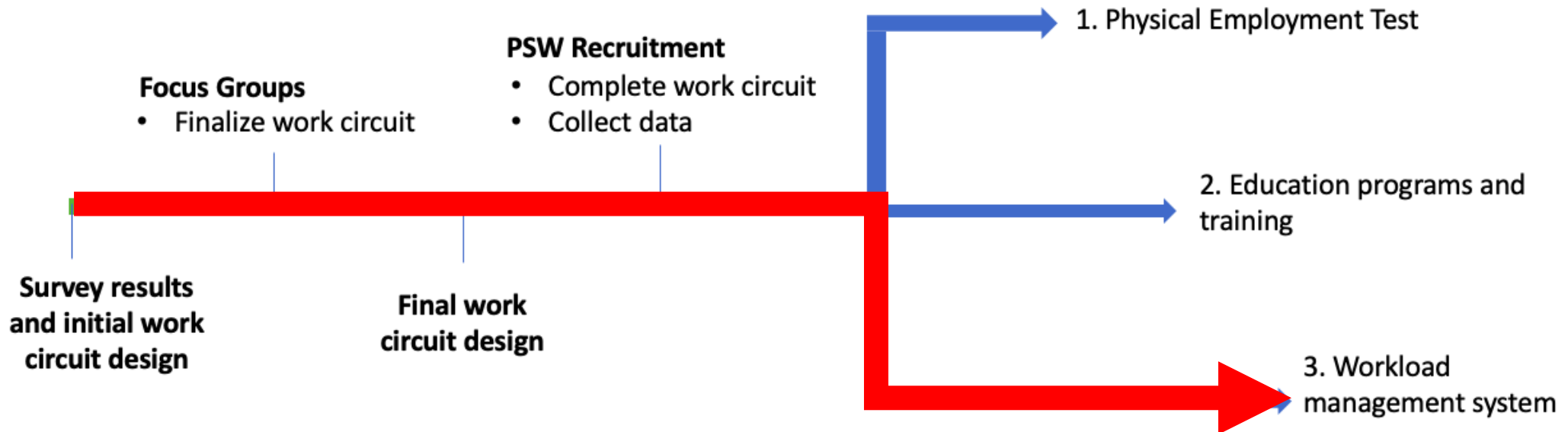
- Results provided insight into specific contextual factors and how they influence specific PSW tasks
 - Section 2: best case scenario provided, lower physical demand ratings
 - Section 3: many responses included contextual factors unprompted
- Little research examining demands of PSW when applying compression socks on clients
 - Identified to be one of the most physically demanding and frequently completed tasks in our survey

Possible Ergonomic Interventions



Conclusion

- Results from survey provide:
 - Quantifiable score of physical demand for wide range of PSW tasks
 - Mapped specific contextual factors that affect specific tasks
 - Basis for more targeted ergonomic interventions



References

1. Fujisawai, R., & Colombo, F. (2009). The long-term care workforce: Overview and strategies to adapt supply to a growing demand. *OECD Health Working Papers*, 44. <https://doi.org/10.1787/225350638472>
2. Carrière, G. (2006). Seniors' Use of Home Care. *Health Reports*, 17(4), 43–47. <https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2005004/article/9498-eng.pdf?st=NBjsQOMZ>
3. Keefe, J., Vézina, S., Busque, M.-A., Décarie, Y., Légaré, J., & Professor, E. (2007). *Planning for Canadian Human Resource Needs in Chronic Home Care: Policy Implications of Projected Needs 2001-2031*.
4. Keefe, J. M., Knight, L., Martin-Matthews, A., & Légaré, J. (2011). Key issues in human resource planning for home support workers in Canada. In *Work* (Vol. 40, Issue 1, pp. 21–28). <https://doi.org/10.3233/WOR-2011-1203>
5. Health Professions Regulatory Advisory Council. (2006). *Regulation of Health Professions in Ontario: New Directions*.
6. *By the numbers: Schedule 1 - injured and ill people - leading occupations*. (2020). WSIB Ontario. Retrieved March 16, 2022, from <https://www.wsib.ca/en/bythenumbers/schedule-1-injured-and-ill-people-leading-occupations>
7. *By the numbers: Schedule 1 - injuries and occupational disease - source*. (2020). WSIB Ontario. Retrieved March 16, 2022, from <https://www.wsib.ca/en/bythenumbers/schedule-1-injuries-and-occupational-disease-source>
8. Fischer, S. L., Sinden, K. E., & MacPhee, R. S. (2017). Identifying the critical physical demanding tasks of paramedic work: Towards the development of a physical employment standard. *Applied Ergonomics*, 65, 233–239. <https://doi.org/10.1016/j.apergo.2017.06.021>
9. Garg, A., & Owen, B. (1993). A biomechanical and ergonomic evaluation of patient transferring tasks: Wheelchair to toilet and toilet to wheelchair. In R. Nielson & K. Jorgensen (1st ed.), *Advances in Industrial Ergonomics and Safety V* (pp. 246-254). Taylor and Francis
10. Holman, G. T., Ellison, K. J., Maghsoodloo, S., & Thomas, R. E. (2010). Nurses' perceptions of how job environment and culture influence patient handling. *International Journal of Orthopaedic and Trauma Nursing*, 14(1), 18–29. <https://doi.org/10.1016/j.joon.2009.03.004>
11. Capodaglio, E. M. (2014). Hospital bathroom ergonomics: Safety, usability and accessibility issues. *Clinical Nursing Studies*, 2(4). <https://doi.org/10.5430/cns.v2n4p1>
12. Fragala, G., Fragala, M., & Pontani-Bailey, L. (2005). Proper positioning of clients: A risk for caregivers. *AAOHN Journal*, 53(10), 438–442. <https://doi.org/10.1177/216507990505301004>

References

13. Marras, W. S., Davis, K. G., Kirking, B. C., & Bertsche, P. K. (1999). A comprehensive analysis of low-back disorder risk and spinal loading during the transferring and repositioning of patients using different techniques. *Ergonomics*, 42(7), 904–926. <https://doi.org/10.1080/001401399185207>
14. Afzal, A., Stolee, P., Heckman, G. A., Boscart, V. M., & Sanyal, C. (2018). The role of unregulated care providers in Canada -A scoping review. *International Journal of Older People Nursing*, 13(3), e12190. <https://doi.org/10.1111/opn.12190>
15. Denton, M., Zeytinoglu, I. U., Brookman, C., Davies, S., & Boucher, P. (2018). Personal support workers' perception of safety in a changing world of work. *Safety in Health*, 4(1). <https://doi.org/10.1186/s40886-018-0069-x>
16. Alamgir, H., Cvitkovich, Y., Yu, S., & Yassi, A. (2007). Work-related injury among direct care occupations in British Columbia, Canada. *Occupational and Environmental Medicine*, 64(11), 769–775. <https://doi.org/10.1136/oem.2006.031914>

Images:

- Anderson College. (2021, June 17). *3 ways you can use your interpersonal skills in a PSW career*. Anderson College. <https://www.andersoncollege.com/3-ways-you-can-use-your-interpersonal-skills-in-a-psw-career/>
- Cascade Maids. (2019, November 3). *Simple effective ways how to declutter your bedroom*. Cascade Maids. <https://cascademaids.com/simple-yet-very-effective-ways-on-how-you-can-declutter-your-bedroom/>
- The Journal. (2014, July 19). *Opinion: Cast claustrophobia? It's very real and it's very unpleasant*. The Journal. <https://www.thejournal.ie/readme/cast-claustrophobia-anxiety-1570904-Jul2014/>
- Vendlet. (n.d.) *VENDLET Bari*. Vendlet, <https://www.vendlet.com/products/vendlet/vendlet-bari>
- City College (2019, March 14). *In demand career: Personal support worker diploma program*. City College. <https://www.citycollegetoronto.com/demand-career-personal-support-worker/>

Thank you!