

Supplementary file 3: Summary of qualitative thematic analysis

Overarching theme	Theme	Sub theme	Level of confidence in evidence for intervention type
Physical health benefits of physical activity interventions for PEH	Belief that physical activity improves the body shape of people experiencing homelessness	Improved body shape and self-image	High (Running groups[1], Indoor group instructor-led exercise[2])
		Weight loss	High (Running groups[1]) Low (Soccer- group training[3])
	Belief that physical activity improves physical condition of people experiencing homelessness	Perception of improved fitness levels	High (Running groups[1], Soccer- group training and Tournament participation[4], Indoor group instructor-led exercise[2]) Moderate (Earn-a-bike[5]) Low (Soccer- group training[3]) Very Low (Group instructor-led dance[6])
		Physical skill development	Moderate (Group Outdoor adventure[7]) Low (Soccer- group training[3]) Very Low (Group instructor-led dance[6])
	Belief that participating in physical activity interventions makes people experiencing homelessness more active in general	Participating in the physical activity intervention increased physical activity in everyday life	High (Running groups[1], Indoor group instructor-led exercise[2]) Moderate (Earn-a-bike[5]) Low (Soccer-group training[3])
		Broader aspects of the intervention (clothes, equipment, skill) facilitated physical activity participation	High (Running groups[1]) Very Low (Group instructor-led dance[6])
Mental health benefits of physical activity interventions for PEH	Belief that physical activity facilitated people experiencing homelessness in self-develop and their ability to cope with life situations	Confidence, empowerment and self-esteem	High (Group running[1], Soccer- group training and tournament participation[4], Indoor group instructor-led exercise[2]) Moderate (Earn-a-bike[5], Group outdoor adventure[7]) Low (Gardening group[8], Soccer- group training[3]) Very low (Group instructor-led dance[6])
		Resilience, coping and hope	High (Group running[1], Group outdoor adventure[9]) Moderate (Group outdoor adventure[7]) Low (Gardening group[8], Soccer- group training[3]) Very low (Group instructor-led dance[6])

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	Belief that physical activity resulted in people experiencing homelessness feeling mentally better	Independence, focus, personal development and relationships	<p>High (Group running[1], Soccer- group training and tournament participation[4])</p> <p>Moderate (Group outdoor adventure[7], Earn-a-bike[5])</p> <p>Low (Gardening group[8], Soccer- group training and tournament participation [10])</p> <p>Very low (Group instructor-led dance[6])</p>
		Positive effect on stress and anxiety	<p>High (Group running[1], Indoor group instructor-led exercise[2], Group outdoor adventure[9])</p> <p>Moderate (Soccer- tournament participation[11], Earn-a-bike[5])</p> <p>Low (Gardening group[8], Soccer- group training and tournament participation [10])</p> <p>Very low (Group instructor-led dance[6])</p>
The impact of physical activity interventions on the wider life of PEH	Belief that the benefits of physical activity interventions carry into wider life of people experiencing homelessness	Development of life and interpersonal skills	<p>High (Group running[1], Group outdoor adventure[9])</p> <p>Moderate (Soccer- tournament participation[11], Earn-a-bike[5], Group outdoor adventure[7])</p> <p>Low (Soccer- group training and tournament participation[10], soccer- group training[3], Gardening group[8])</p> <p>Very low (Group instructor-led dance[6])</p>
		Improved social connection and building relationships with others	<p>High (Group running[1], Group outdoor adventure[9])</p> <p>Moderate (Soccer- tournament participation[11], Earn-a-bike[5], Group outdoor adventure[7])</p> <p>Low (Soccer- group training and tournament participation[10], soccer- group training[3], Gardening group[8])</p>
		Physical activity as a catalyst for positive healthy life change	<p>High (Group outdoor adventure[9])</p> <p>Moderate (Soccer- tournament participation[11])</p> <p>Low (Soccer- group training and tournament participation[10], Gardening group[8])</p>
		Practical and functional benefits developed from participation	<p>Moderate (Earn-a-bike[5])</p> <p>Low (Soccer- group training and tournament participation[10], soccer- group training[3])</p>

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	Perception of challenges related to physical activity participation whilst homeless	Homelessness presents specific barriers to PA participation	High (Group running[1]) Moderate (Earn-a-bike[5]) Low (Soccer- group training and tournament participation[10], soccer- group training[3]) Very low (Group instructor-led dance[6])
		Participating in soccer tournaments can be stressful	High (Soccer- group training and tournament participation[4]) Moderate (Soccer- tournament participation[11])
		Perceived poor performance/ aptitude can negatively impact confidence and coping	High (Soccer- group training and tournament participation[4]) Moderate (Soccer- tournament participation[11]) Very low (Group instructor-led dance[6])
	Belief of physical activity positive impact on self-medication, prescribed medication and addiction for people experiencing homelessness	Reduction in need for prescription medication and self-medication	Moderate (Earn-a-bike[4])
		Reduced substance misuse	High (Soccer- group training and tournament participation[10]) Moderate (Earn-a-bike[4]) Low (soccer- group training[7])
		Diversion from temptation of addiction	Low (soccer- group training[7])

1. Dawes, J., C. Sanders, and R. Allen, "A Mile in Her Shoes": A qualitative exploration of the perceived benefits of volunteer led running groups for homeless women. *Health & social care in the community*, 2019. **27**(5): p. 1232-1240.
2. Malden, S., et al., A theory based evaluation of an intervention to promote positive health behaviors and reduce social isolation in people experiencing homelessness. *Journal of social distress and the homeless*, 2019. **28**(2): p. 158-168.
3. Sherry, E. and V. Strybosch, A kick in the right direction: longitudinal outcomes of the Australian Community Street Soccer Program. *Soccer & Society*, 2012. **13**(4): p. 495-509.
4. Magee, J. and R. Jeanes, *Football's coming home: A critical evaluation of the Homeless World Cup as an intervention to combat social exclusion*. *International Review for the Sociology of Sport*, 2011. **48**(1): p. 3-19.
5. Grimes, A. and M. Smirnova, *Perspectives on an earn-a-bike intervention on transportation, health and self- esteem among men experiencing homelessness*. *Journal of Transport & Health*, 2020. **18**: p. 11.
6. Knestaur, M., M.A. Devine, and B. Verlezza, 'It Gives Me Purpose': The Use of Dance with People Experiencing Homelessness. *Therapeutic Recreation Journal*, 2010. **44**(4): p. 289-301.

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7. Parry, B.J., et al., *Improving outcomes in young people experiencing homelessness with My Strengths Training for Life™ (MST4Life™): A qualitative realist evaluation*. Children and Youth Services Review, 2021. **121**: p. 105793.
8. Grabbe, L., J. Ball, and A. Goldstein, *Gardening for the mental well-being of homeless women*. Journal of holistic nursing : official journal of the American Holistic Nurses' Association, 2013. **31**(4): p. 258-66.
9. Parry, B.J., et al., *Promoting Personal Growth in Young People Experiencing Homelessness Through an Outdoors-Based Program*. 2021, 2021. **16**(5): p. 36.
10. Sherry, E., *(Re)engaging marginalized groups through sport: The Homeless World Cup*. International Review for the Sociology of Sport, 2010. **45**(1): p. 59-71.
11. Peachey, J., et al., *Street Soccer USA Cup: Preliminary findings of a sport-for-homeless intervention*. The ICHPER-SD Journal of Research, 2013. **8**: p. 3-11.