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EDITORIAL

Falls Prevention: Adherence, Fear of Falling, Assessment, and Intervention

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Due to the demographic aging, new events are coming more into the medical focus. The change from disease-oriented to function-related geriatric medicines under the umbrella of healthy aging (World Health Organization, 2015) puts sudden events as "falls or even injurious falls" right into the middle of geriatric prevention and rehabilitation activities (World Health Organization, 2008). Due to several global initiatives (American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention, 2001; Clemson et al., 2010; Guirguis-Blake et al., 2018; Medical Advisory Secretariat, 2008), it is now widely accepted that 28%–38% of the population over 65 years fall at least once annually, with a high percentage falling several times. As age increases, the rates of falls tend to increase as well, suggesting an age-related increase in fall risk rising up to nearly 50% in the age group 80 years and above. Falls are posing a burden to the public health care system and to older persons themselves as in up to 30% of falls cause mild-to-severe injuries, and in some cases even cause death. Injuries after a fall event can lead to prolonged use of health care service including high health care costs (Montero-Odasso et al., 2021). The estimated annual costs for fall-related medical services range from $31.3 billion dollars to $49.5 billion dollars in the United States (Haddad et al., 2019; Houry et al., 2016).

Therefore, falls are a serious threat to older persons for healthy aging, as falls and especially fall-related injuries are associated with a higher risk of onset of disability, reduced mobility, loss of independence, and even higher risk of mortality (Scuffham et al., 2003; Todd & Skelton, 2004). Falls prevention has become in many countries a mandatory goal by implementing national strategies to reduce falls in the older population (Campbell & Robertson, 2010; Hill et al., 2018; Rose et al., 2007).

Many risk factors for falls have been identified and can be categorized into intrinsic, behavioral, and extrinsic factors (Rubenstein, 2006; Todd & Skelton, 2004). The most important intrinsic risk factors are, for example, a fall in the last 12 months, gait and balance disorder, and low strength (all with an odds ratio between 2 and 3; Deandrea et al., 2010; Todd & Skelton, 2004). Behavioral risk factors are fall-related psychological concerns (FrPC) including fear of falling, as well as the other side of the coin, self-efficacy. Environmental risk factors are, for example, loose carpets, low lightening, or missing handrails (Todd & Skelton, 2004).

Preventive interventions with the most positive reduction in fall rate have been identified and include multicomponent exercise programs (Hopewell et al., 2018; Sherrington et al., 2019). Exercise programs including challenging balance exercise and progressive strength training have shown very effective results as well as Tai Chi exercise interventions (Nyman, 2020; Sherrington et al., 2019).

Despite the evidence of effective intervention, major challenges and barriers exist to a worldwide reduction in fall rates on national and international levels. In this special issue on falls, the main topic is therefore related to implementation research of fall preventive strategies, as well as on FrPC as both can pose a barrier for older persons to enter effective programs. Less focus is given in this special issue to risk factors for falls or exercise intervention as there is already good evidence available. Uptake, motivation, and dissemination, (Part 1) and FrPC (Part 2) are the main focus of this special issue. Future perspectives and a small section on assessment form Parts 3 and 4, respectively.

Research has shown that the uptake rate in older persons on fall related exercise programs (often named different) can be as low as 10% (Yardley, Donovan-Hall, et al., 2006). Taking into account, also, higher dropout rates and noncompliance in this age group, the benefits of exercise programs could be hampered. The article of McPhate et al. (2016)[1] addresses, for example, the motivation for uptake of fall prevention classes. One of the major barriers are in the first part probably the different language between researcher and older adults in defining falls or further more recalling falls, and the attitude of older persons on fall prevention. This is an important aspect in the recruitment process (Freiberger & de Vreede, 2011; Hawley-Hague et al., 2014; Yardley et al., 2006, 2007). In many cases, the older person is not motivated for exercise classes including strength and balance components (Burton et al., 2017), and is unaware about the long-term benefits, as shown by the article of Osho et al. (2018). Both articles provide important information on recruitment and adherence issues. As uptake and motivation not only relate to fall prevention but also, for example, to physical activity or strength training, the articles by Hyde et al. (2021) and Laybourne et al. (2011) have been included to provide further information. The study by Lee et al. (2015) could also be headed under the psychological part of this special issue. A very specific older population addresses parts of the recruitment and motivational aspects in older persons with dementia.

The second main focus of this special issue presents articles in the area of FrPC including the construct of fear of falling (FoF) and self-efficacy in an early paper by McAuley et al. (1997). The systematic review by Papadimitriou (2020) provides information and current effectiveness on interventions to reduce fear of falling. Currently accepted manuscripts address the association between FrPC and physical activity or sedentary behavior (Canever et al., 2021; Yu Shiu, 2021). The article by Schott and Tietjens (2019) presents information about the relationship between falls, social support, falls, efficacy, and physical activity.

As an outlook into the future, in Section 3, new interventions are presented. For example, the article of Arkkukangas et al. (2020) combining exercise and behavioral intervention. Another is a dual-

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task intervention that combines physical exercise with cognitive load (Javadpour et al., 2021). Based on the evidence of cognitive load in balance control in later life, and the possibility of early marker on cognitive decline, this approach will gain interest in the next years (Beauchet et al., 2016; Herman et al., 2010; Verghese et al., 2013). The article by Nyman (2020) tackles the issue of Tai-Chi and future aspects.

One last short recognition is related to the topic of assessment issues. The early paper by Woollacott and Shumway-Cook (1996) provided methodological aspects and the paper by Vivrette et al. (2011) relates to the psychological and motivational side of fall prevention.

In conclusion, good evidence is given for effective exercise interventions in the area of fall prevention but major challenges remain such as recruitment, uptake, and adherence, as well as dissemination. *Journal of Aging and Physical Activity* would be interested to see future articles on these topics that future research could address. *Journal of Aging and Physical Activity* has been a great outlet for innovative fall research on issues that make a real difference to the lives of older people. It would be helpful if more researchers publish articles in the same way as Stevens, and report barriers, and challenges in randomized controlled trials, to prevent other researchers "from inventing the wheel" again (Stevens et al., 2013). More research is also needed in the area of dissemination as a systematic review demonstrated (Child et al., 2012) as well as the report by Horton et al. (2018). In the field of FrPC, more research is also needed with regard to the predictive nature, for example, on fear of falling on falls or systematic reviews on effective interventions to reduce FoF and increase physical activity.

Notes

1. The *JAPA* papers cited in-text are included in the virtual special issue.

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