

CHAPTER 12

Psychosocial Factors Associated With Physical Activity in Older Adults

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ABSTRACT

Overwhelming evidence supports the health benefits of physical activity and the negative health consequences associated with physical inactivity. Nonetheless, the vast majority of older adults (65+ years of age) are insufficiently active. There is an array of psychosocial factors associated with physical activity among older adults. This chapter provides an overview of several of these key psychosocial factors that may be unique to older adults and are amenable to change through intervention. They should be considered when developing interventions to increase or maintain physical activity participation, regardless of intervention setting. Expanding our understanding of, and addressing psychosocial factors associated with, physical activity among older adults may strengthen programs designed to increase physical activity in this age group, which can lead to both reduced chronic diseases and disabilities and increased quality of life.

INTRODUCTION

Overwhelming evidence supports the benefits of physical activity in attenuating the physiologic changes associated with aging, promoting cognitive and psychological well-being, improving physical function, preventing and managing

chronic disease, increasing longevity, and reducing the risk of falls (American College of Sports Medicine, 2014; Chodzko-Zajko, Schwingel, & Park, 2009; Nelson et al., 2007). Conversely, physical inactivity can have significant negative health consequences (American College of Sports Medicine et al., 2009; Chodzko-Zajko et al., 2009; Nelson et al., 2007) including increasing the risk factors associated with chronic disease that result in poorer health, more visits to the doctor, more medication, and increased health-care costs. All of these outcomes place a burden on the health-care system (Wang, Pratt, Macera, Zheng, & Heath, 2004). Two out of every three older adults have multiple chronic conditions (Centers for Disease Control and Prevention, 2013), many of which could be attenuated by participation in regular physical activity.

Despite the known benefits of physical activity and the risks associated with inactivity, the vast majority of older adults (65+ years of age) are insufficiently active. In 2010, only 11% reported participating in 150 minutes of leisure-time aerobic activities and two bouts of muscle-strengthening activities per week as recommended by the 2008 Federal physical activity guidelines (American College of Sports Medicine et al., 2009; Physical Activity Guidelines Advisory Committee, 2008), making older adults the least physically active of all age groups in the United States. Physical activity declines with age: fourteen percent of people aged 65–74 met the guidelines for leisure-time aerobic and muscle-strengthening activities compared to 4% of those 85+ years of age (Federal Interagency Forum on Aging-Related Statistics, 2012). Men are more active than their female counterparts, with 13.6% meeting both activity recommendations compared to 8% of women (Federal Interagency Forum on Aging-Related Statistics, 2012).

On average, nearly 10,000 people in the United States turn 65 each year, and it is projected that the number of older adults will double to 72 million over the next 25 years—accounting for about 20% of the U.S. population by 2030 (Centers for Disease Control and Prevention, 2013). The rapidly aging U.S. population poses an unprecedented public health challenge, and addressing this challenge will require increased financial resources and changes to existing infrastructure to provide needed services. Public health interventions designed to promote healthful behaviors including physical activity among the older adult population are needed (Birkel et al., 2015; Centers for Disease Control and Prevention, 2013). Adopting and maintaining physical activity is essential to postpone or prevent chronic disease. Yet, it can be challenging for health-care experts and clinicians to develop intervention programs to assist older adults in adopting and maintaining regular physical activity due to many factors such as existing health-related problems, functional limitations, and safety concerns (e.g., accessible and safe walking areas; Chodzko-Zajko, 2014). Thoughtful

approaches are needed to promote and maintain physical activity in this age group, as older adults may carry a lifetime of habits and attitudes that may inhibit physical activity.

There is a vast array of psychosocial factors associated with physical activity among older adults. The purpose of this chapter is not to discuss all of these potential elements, but rather to provide an overview of several key psychosocial factors that may be unique to older adults and are amenable to change through intervention. Although the focus is on modifiable factors at the individual and interpersonal level, we recognize the importance of nonmodifiable factors (e.g., sex, age, socioeconomic status). Individuals working to promote physical activity need to be cognizant of nonmodifiable factors due to their potential impact on physical activity. Nonmodifiable factors should be taken into account when designing interventions and health promotion strategies, as recommended activities may require modifications. For each factor discussed in the following sections, we provide a brief review of the current literature and highlight interventions that have successfully incorporated the factor and/or suggest possible intervention strategies. We have used an ecological model (McLeroy, Bibeau, Steckler, & Glanz, 1988; Sallis et al., 2006) to frame our discussion, which is focused on the individual and interpersonal levels. Additionally, throughout this chapter, we use *physical activity* as an umbrella term that includes unstructured exercise, leisure-time physical activity, physical activity for transport, physical activity associated with caring for one's house, and so forth, as well as planned/structured exercise activity.

INDIVIDUAL-LEVEL FACTORS

Adults, including older adults, face many common challenges such as lack of time that may make it difficult to become physically active or to maintain a physically active lifestyle. In addition, there are many individual-level psychosocial factors associated with physical activity participation (e.g., intention to be physically active, satisfaction with physical activity) that are common to many adults, including older adults. This section highlights individual-level factors that may be particularly salient to older adults, including fear of falling, perceptions regarding appropriateness of physical activity, physical activity intentions, motivation, and self-efficacy.

Fear of Falling

Approximately 30% of older adults report having fallen at least once (Masud & Morris, 2001; Talbot, Musiol, Witham, & Metter, 2005), placing them at an increased risk of being disabled, hospitalized, admitted to nursing homes

(Gill, Murphy, Gahbauer, & Allore, 2013), or dying. Due to the frequency of falls and the negative physical and psychological outcomes associated with falling, many older adults have a fear of falling (Austin, Devine, Dick, Prince, & Bruce, 2007; Murphy, Williams, & Gill, 2002). Fear of falling includes psychosocial concerns such as fear, anxiety, loss of confidence, and impaired perception of ability to walk without falling, and impacts individuals who have previously fallen and those who have not (Scheffer, Schuurmans, van Dijk, van der Hooft, & de Rooij, 2008; Zijlstra et al., 2007). Both qualitative studies (Lees, Clark, Nigg, & Newman, 2005; Mathews et al., 2010) and quantitative studies (Jefferis et al., 2014; Murtagh et al., 2015) have found that fear of falling is associated with reduced physical activity. For example, the Irish Longitudinal Study on Ageing determined that participants ($n = 4,892$) who had not fallen and were not afraid of falling were less likely to be physically inactive compared to those who had fallen or were afraid of falling (Murtagh et al., 2015). Fear of falling is associated with restriction of activity (Howland et al., 1998; Tinetti, Mendes de Leon, Doucette, & Baker, 1994) and curtails participation in social activities contributing to social isolation (Zijlstra et al., 2007), which, in turn, is associated with decreased physical activity. This decrease in physical activity can lead to a downward spiral, with older adults becoming less physically active due to fear of falling, which, in turn, makes them even more fearful to be physically active.

Being physically active may reduce fear of falling. A recent meta-analysis conducted by Kendrick et al. (2014) that included 30 intervention studies with community-dwelling older adults found modest evidence that exercise interventions reduced the fear of falling, although there was insufficient evidence to determine if fear of falling was reduced beyond the intervention period. This study is consistent with an earlier review (Gilespeie et al., 2012) that suggested that group and home-based programs including strength and balance exercises help prevent falls among older adults living in the community. Home-based programs have traditionally focused on increasing aerobic activity such as brisk walking; thus, there is a need to emphasize strength and balance. Given the negative outcomes associated with the fear of falling and the potential benefits of participating in physical activity in reducing this fear, intervention efforts should be directed toward older adults who are afraid of falling, regardless of fall history. The Centers for Disease Control and Prevention (CDC) is now in the process of creating partnerships with community-based organizations such as YMCAs to implement effective fall prevention programs (Ehrenreich et al., 2015). The CDC has also created STEADI (Stopping Elderly Accidents, Deaths and Injuries), an intervention to be implemented by health-care providers, which is available on their website (www.cdc.gov). Additionally, individuals working with older adults should discuss strategies to minimize fall risk. For example, health-care

providers could discuss the potential risks associated with throw rugs and low lighting, especially for older adults with vision impairments. Older adults should be advised to conduct home audits to identify potential fall risks and to devise strategies to overcome these potential risks as home hazard assessment and modification result in decreased falls (Gillespie et al., 2003). The AARP provides tools to assess home and community environments (www.aarp/housing).

Perceptions Regarding Appropriateness of Physical Activity for Older Adults

An individual's implicit attitudes toward aging and assigned gender roles influence participation in physical activity. Existing social norms influence whether older adults exercise and also the type of physical activities in which they engage. Research supports that the more the older adults endorse negative aging stereotypes, the less likely they are to exercise (Sánchez Palacios, Trianes Torres, & Blanca Mena, 2009). The Aging and Stereotypes and Exercise Scale (Chalabaev et al., 2013) may be a useful measure to understand older adults' attitudes regarding exercise. There is also some work suggesting that these biases impact not only older adults but also health professionals. For example, research has found that physicians are less likely to recommend physical activity to older patients than to middle-aged patients (Austin, Qu, & Shewchuk, 2013). It is important that health profession training programs address and attempt to combat aging stereotypes as they may undermine older adults' attitudes regarding exercise. The theory of reasoned action posits that positive attitudes and subjective norms are associated with intention to perform the behavior (Fishbein & Ajzen, 2010). An individual's attitude toward physical activity is a strong predictor of intentions to engage in the behavior (French et. al., 2005). Therefore, older adults who believe that being physically active is appropriate behavior for people their age are more likely to be physically active than those who think it is more suitable for younger adults and children. Without appropriate role models, older adults may not consider the idea that they can and should be physically active throughout their life span. The lack of role models may be particularly salient for women in this current cohort of older adults who were in high school and college prior to Title IX of the Education Amendments Act of 1972 ("Education Amendments Act of 1972," 1972) and more likely perceive physical activity as behavior more appropriate for males than females. Title IX prohibits discrimination "on the basis of sex in any federally funded education program or activity," and requires federally funded education programs or activities to offer equitable athletic opportunities to men and women. When designing interventions, it is important to consider strategies to counter these implicit

attitudes that may be undermining activity levels. Use of vignettes, video examples, and exercise leaders with similar characteristics may all help counter negative attitudes.

Intentions

The theory of planned behavior postulates that the intention to engage in a behavior is the immediate and important predictor of behavior, assuming that the individual has the needed abilities, resources, and opportunities to perform the behavior (Ajzen, 1991). Yet, intentions alone do not guarantee initiation or maintenance of behavior, as evidenced by the gap between intentions and behavior (Godin & Conner, 2008). Developing implementation intentions may increase the likelihood of meeting physical activity goals (e.g., exercising regularly). An implementation intention specifies when, where, and how the goal will be achieved (Gollwitzer, 1999). For example, an individual may say to himself/herself, "I will walk for 30 minutes each morning in my neighborhood immediately after finishing breakfast." Implementation intentions may strengthen the relationship of intention to behavior by engaging not just motivation but also decision-making and planning systems, and interventions with older adults focusing on implementation intentions show promise. A study of older women aged 61–89 years ($n = 75$) determined that those who were randomized to a weekly implementation intentions for physical activity intervention (vs. implementation intentions intervention for an alternate behavior or a control group) reported more physical activity over the 4-week intervention. Women with stronger executive function benefited the most from the intervention, supporting the notion that effects may be operating through the engagement of higher order cognitive processes (Hall, Zehr, Paulitzki, & Rhodes, 2014).

Self-Efficacy

Self-efficacy, an individual's belief in his/her capabilities to complete a course of action or perform a behavior, is a central construct in social cognitive theory. It is one of the strongest predictors of physical activity (Hu, Motl, McAuley, & Konopack, 2007; McAuley, 1993), including physical activity among older adults (Resnick, Orwig, Magaziner, & Wynne, 2002; van Stralen, De Vries, Mudde, Bolman, & Lechner, 2009). Self-efficacy affects choice of activities, effort exerted, and perseverance in overcoming barriers and difficulties when participating in selected activities (Bandura, 1997). Older adults with higher levels of exercise self-efficacy are more active than individuals with lower levels (McAuley, 1993). Within the physical activity and exercise realm, self-efficacy has been

conceptualized as the confidence to perform exercise/physical activity (task self-efficacy) and barrier self-efficacy (self-regulatory efficacy), the confidence to be physically active in the face of common barriers such as lack of time, illness/poor health, and inclement weather. Older adults may have low self-efficacy to be physically active due to limited experience in physical activity, lack of familiarity with current gym equipment, and lack of physical activity role models. It is important to recognize that the first step is to instill in older adults the belief that they can complete the desired bout of activity, as without that initial belief, barrier efficacy is meaningless.

Exercise self-efficacy and barrier self-efficacy are malleable; therefore, interventions to promote physical activity/exercise often include components designed to increase these factors. Increasing physical activity will lead to increased exercise self-efficacy. There are a number of approaches outlined using the primary sources of efficacy judgments that can be used to increase exercise self-efficacy, such as the use of small steps, the start low, go slow concept of exercise, and positive feedback. Similarly, an individual's barrier self-efficacy can be increased by developing strategies to overcome potential barriers. For example, an older adult living in a low-rise apartment building who has low self-efficacy to be physically active during inclement weather could be encouraged to walk the hallways in his/her apartment building when the weather is not hospitable to walking outside. Changes in barrier self-efficacy are associated with changes in physical activity (Rejeski et al., 2003). Barrier self-efficacy can be increased by having older adults develop strategies to overcome obstacles to being physically active. Both exercise self-efficacy and barrier self-efficacy predict maintenance of exercise behavior (McAuley & Blissmer, 2000; McAuley, Jerome, Elavsky, Marquez, & Ramsey, 2003; Neupert, Lachman, & Whitbourne, 2009; Sallis et al., 1986); thus, it is essential to develop both.

INTERPERSONAL-LEVEL FACTORS

Several interpersonal-level psychosocial factors associated with physical activity may become increasingly important as a result of changing social networks due to advancing age and morbidity. Changing social networks may alter physical activity participation through changes in informal social support, while formal social support may have a greater influence on physical activity participation. Social support, broadly defined, refers to the supportive actions from members of an individual's social network, and this support can be offered through informal (e.g., family, friends) or formal (e.g., health-care providers) networks. These factors and examples are discussed in detail in the following section.

Changing Social Networks

Aging is associated with a decrease in the size of the aging adult's social networks, due to relocation, morbidity, and mortality. The decreasing network size results in increased loneliness and in isolation, both of which negatively impact opportunities and motivation for exercise. A longitudinal study of adults aged 50–68 found that loneliness was associated with declines in physical activity over 2 years (Hawkey, Thisted, & Cacioppo, 2009). Older adults who participate in physical activity with others have increased opportunities for social interaction and access to resources to expand social interactions (McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003). Older adults may find social interaction offered through group exercise to be appealing, and socialization offered by exercise programs may promote retention (Belza et al., 2004; Chiang, Seman, Belza, & Tsai, 2008).

Walking groups provide opportunities for conversation and socialization, and a meta-analysis determined that walking groups increase physical activity, with a greatest effect in older adults compared to younger adults (Kassavou, Turner, & French, 2013). Given the positive relationship between opportunities for socialization and physical activity for older adults, communities and organizations should consider strategies to increase attendance at available group activities and increase available programs and facilitate the development of peer-led activities. There is a need to expand the reach of existing programs, and one possible way to do this may be through the use of trained peer leaders who have access to community space (e.g., room at senior center or school gymnasium after hours). Programs may need to consider different walking speed and ability.

Informal Social Support

Due to changing social networks, older adults may have less informal social support for physical activity. There are several types of social support. Instrumental support is tangible support (e.g., providing rides to an exercise program), while emotional support is the expression of caring, love, and empathy (e.g., encouragement). Informational support is the provision of advice and suggestions. A recent study ($n = 138$) determined that older adults with low levels of social support were more likely to incorrectly believe that they met physical activity recommendations, when they did not (Visser, Brychta, Chen, & Koster, 2014). Although results of interventions are not entirely consistent (Hogan, Linden, & Najarian, 2002), perceived social support for exercise (Litt, Kleppinger, & Judge, 2002; McAuley, Jerome, Elavsky, et al., 2003) as well as general social support (Mathews et al., 2010; Schutzer & Graves, 2004; van Stralen et al., 2009) have been identified as key factors associated with both adoption and maintenance of exercise behaviors.

Increasing social support among older adults may be an important strategy for promoting and maintaining physical activity. Physical activity interventions for older adults that are framed in both social cognitive theory and group dynamics have resulted in increased activity (Brawley, Rejeski, & King, 2003). Social support offered by group programs is associated with increases in socialization as well as exercise adherence (Cress et al., 2005; Williams & Lord, 1995). A study of adults aged 65–85 ($n = 309$) determined that individuals with low social support were less likely to be physically active even if self-efficacy was high; participants with low self-efficacy were less likely to be active even with social support (Warner, Ziegelmann, Schuz, Wurm, & Schwarzer, 2011). This finding suggests that interventions should work to increase both self-efficacy and social support. Furthermore, qualitative studies with sedentary African American men have identified that having a peer who serves as “buddy” or partner increases the motivation to be physically active (Bopp et al., 2007; Griffith, King, & Ober Allen, 2013). Additionally, studies have determined that middle-aged and older African American men prefer to be physically active in a social setting, and physical activities that involve family and the community may be preferable (Hooker, Wilcox, Rheaume, Burroughs, & Friedman, 2011). Social support for physical activity can be fostered in a variety of ways, including peer-led group exercise classes, community walking groups, and wellness coaching/counseling. Furthermore, support does not have to be offered in person, but can be facilitated by technology—Internet groups, e-mails from staff, online counseling, and telephonic support.

For many older adults, social support from members of their faith communities is second only to that offered by family (Koenig, Moberg, & Kvale, 1988). Social support available within faith communities may promote healthful behaviors (Koenig, 2012). Analyses of data from the National Health and Nutrition Examination Survey determined that European American and Mexican American women aged 60+ who attended church frequently participate in more leisure-time physical activity than those who attended church infrequently (Gillum, 2006). Faith-based interventions have been efficacious in promoting physical activity among older African Americans (Duru, Sarkisian, Leng, & Mangione, 2010; Tussing-Humphreys, Thomson, Mayo, & Edmond, 2013) and may be an important strategy for the promotion of physical activity among Latinos (Bopp, Fallon, & Marquez, 2011; Martinez, Arredondo, Perez, & Baquero, 2009). Future research should continue to explore promoting physical activity through faith-based organizations.

Formal Social Support

Physicians and health-care providers have a valuable opportunity to interact with their older adult patients to promote physical activity (King, 2001). They may be an important source of formal social support (Hinrichs & Brach, 2012) for older

adults in the United States. Physicians are viewed as a valued source for health-related information and their counsel may serve as a catalyst for increasing physical activity (Kreuter, Chheda, & Bull, 2000; Petrella, Koval, Cunningham, & Paterson, 2003). One objective of *Healthy People 2020* is to increase the number of physician office visits that include physical activity education or counseling (U.S. Department of Health and Human Services, 2011). The U.S. Preventive Services Task Force found that behavioral counseling in this setting has a limited effect on increasing physical activity among adults free of cardiovascular disease (CVD), hypertension, hyperlipidemia, or diabetes (U.S. Preventive Services Task Force, 2012) and recommended that patients who are overweight and have additional the risk factors for CVD be offered or referred to intensive behavioral counseling to promote healthy eating and physical activity to prevent CVD (LeFevre & U.S. Preventive Services Task Force, 2014). A meta-analysis found that behavioral counseling of medium-to-high intensity could lead to increases in self-reported physical activity behaviors, although long-term follow-up was very limited (Lin, O'Connor, Whitlock, & Beil, 2010). A recent systematic review found that promotion of physical activity in primary care was associated with small-to-moderate increases in self-reported physical activity at 12 months (Orrow, Kinmonth, Sanderson, & Sutton, 2012). The American Heart Association and the American College of Sports Medicine recently implemented the "Exercise is Medicine" initiative to promote physicians prescribing exercise (Exercise is Medicine, n.d.).

Physician counseling may be limited due to a lack of certainty about the efficacy of physical activity counseling on physical activity, feeling uncomfortable about counseling, and lack of time, training, and reimbursement (Hebert, Caughy, & Shuval, 2012). Group medical visits may be a possible solution to reimbursement concerns. These visits, usually conducted by a physician or nurse practitioner and focused on a condition (e.g., diabetes management), include an individual assessment and an educational session for the entire group (Jaber, Braksmajer, & Trilling, 2006). Group visits could provide opportunities for increased formal and informal social support. Additionally, the Treat and Reduce Obesity Act of 2013 ("Treat and Reduce Obesity Act of 2013," 2013) expands obesity prevention efforts first funded by the Affordable Care Act (Koh & Sebelius, 2010) to include reimbursement for obesity counseling for obese adults. Counseling could increase formal support for physical activity and might encourage obese older adults without health conditions that would limit participation to increase their physical activity.

It is important to note that not all social support—whether it is from family, friends, or health-care professionals—is conducive to promoting physical activity. These individuals may encourage sedentary behaviors due to internalizing beliefs that physical activity should decline with advancing age. For example,

results of a focus group study suggest that husbands of Latina women may disapprove of their participation in physical activity, although this research was not specific to older adults (Ramirez, Chalela, Gallion, & Velez, 2007). A problem that often arises in older adults is the issue of overprotectiveness, in which family members may not allow older adults to do activities out of concern for their safety or health. These concerns can undermine self-efficacy and future exercise participation (Berkhuysen, Nieuwland, Buunk, Sanderman, & Rispen, 1999). In an interesting study in a cardiac rehabilitation program, where overprotectiveness is often a concern, spouses who exercised with the patient felt less overprotective, which led to greater adherence (Erling & Oldridge, 1985).

CONCLUSION

Although we have focused on malleable factors, the importance of nonmodifiable psychosocial factors that are associated with physical activity should be considered by those working to promote or maintain physical activity among older adults. For example, religiosity may be extremely valuable for addressing physical activity, as the majority of older adults (69%), especially racial/ethnic minorities, state that religion is very important in their life (Pew Forum, 2008). With aging, the neighborhood in which one resides becomes increasingly important. Declining health and physical impairments associated with aging increase the time spent in one's neighborhood. It has been hypothesized that perceived neighborhood safety is associated with physical activity, although the research has yielded inconsistent results (Foster & Giles-Corti, 2008; Foster, Knuiman, Hooper, Christian, & Giles-Corti, 2014; Humpel, Owen, & Leslie, 2002). Nonetheless, a cross-sectional study analyzing data from the 2004 Health and Retirement Study of older adults aged 50+ determined that those perceiving their neighborhood as safe had an 8% higher mean rate of leisure-time physical activity, compared to older adults who perceived their neighborhood as unsafe, after controlling for socioeconomic status (Tucker-Seeley, Subramanian, Li, & Sorensen, 2009).

There are other psychosocial factors that have had minimal examination and warrant further exploration. For example, resilience, the ability to bounce back from an adverse event (Ryff & Singer, 2003), is a modifiable factor that provides a buffer from negative events and consequences (Clark et al., 2011; Clark, Burbank, Greene, Owens, & Riebe, 2010). Resilience may be increasingly important with age due to the increased likelihood of facing multiple adverse events with age, such as the death of a spouse or hospitalization (Campbell-Sills, Cohan, & Stein, 2006). Older adults with higher levels of resilience may be able to return to their previous level of functioning after an adverse event, while those who are less resilient may be unable to do so. It is possible that resilience

is associated with physical activity behaviors of older adults. A study examining the maintenance of healthful behaviors (exercise and fruit and vegetable intake) among older adults determined that a person's level of resilience is associated with his/her level of physical activity (Mlinac, Lees, Stamm, Saint, & Mulligan, 2014), although the direction of this association is not clear.

This review presents psychosocial constructs that individuals and groups may want to consider when developing interventions to increase or maintain physical activity participation among older adults, regardless of intervention setting. This discussion is not exhaustive, and there are a number of existing reviews examining correlates and/or determinants of physical activity initiation and/or maintenance (van Stralen et al., 2009) and interventions designed to increase physical activity among older adults that can be consulted (Conn, Minor, Burks, Rantz, & Pomeroy, 2003; King, 2001; King, Rejeski, & Buchner, 1998; Taylor et al., 2004; van der Bij, Laurant, & Wensing, 2002). It is, however, important to note that older adults are a diverse and heterogeneous group, and there may be differences in psychosocial factors based on age (e.g., adults aged 65–74 vs. adults aged 85+), race/ethnicity, income, socioeconomic status, location (urban, suburban, or rural), and presence or type of disability. Expanding our understanding of, and addressing psychosocial factors associated with, physical activity among older adults will be important for promoting and maintaining physical activity within this population, which will likely lead to reduced chronic diseases and disabilities associated with inactivity while increasing the quality of life.

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