






# Social Support, General Self-Efficacy, Fear of Falling, and Physical Activity Among Older Adults in a Middle-Income Country

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## Abstract

**Objectives:** To investigate the levels and interrelationships between fear of falling (FOF), physical activity (PA), social support (SS), and general self-efficacy (GSE) among older adults in a Nigerian community. **Methods:** This was a cross-sectional survey involving 100 older adults (65.0% females; mean age = 74.25 ± 8.01 years) consecutively recruited from Nnewi community. Participants' FOF, PA, GSE, and SS were assessed using standardized questionnaires. Data were analyzed using descriptive statistics, Spearman rank order correlation, and structural equation modeling at a 0.05 level of significance. **Results:** The participants' mean FOF, PA, GSE, and SS scores were 15.22 ± 7.43 (fearful), 114.76 ± 90.18 (low), 21.64 ± 8.25 (low) and 5.72 ± 1.19 (high) respectively. There were significant correlations between each pair of FOF, PA, GSE, and SS scores of the participants ( $p < .05$ ). FOF and GSE were significant predictors of PA while GSE and SS were significant predictors of FOF. **Conclusion:** FOF and SS were high while PA and GSE were low in this sample of Nigerian older adults. Significant correlations existed between FOF, SS, GSE, and PA, with FOF and GSE being predictors of PA while GSE and SS significantly predicted FOF. Measures should be geared towards reducing FOF and improving PA, GSE, and SS in this group.

## Keywords

social support, physical activity, fear of falling, general self-efficacy, older adults

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## Introduction

Ageing is a natural process that is usually associated with a lot of physical, psychological and social challenges (Akosile et al., 2018; Anand, 2014). Active lifestyle has been proven to be very effective in preventing and slowing down these health challenges (Ku et al., 2013), while inactive lifestyle can compound these problems among older adults. Despite this, majority of older adults still do not meet the minimal recommended weekly physical activity (PA) level of 150 minutes of moderate-intensity PA, or 75 minutes of vigorous-intensity PA, or an equivalent combination of both (Notthoff et al., 2017). Consequently, many older adults are faced with the attendant adverse effects of physical inactivity which may

include: muscle atrophy; de-conditioning; increased risk of cardiovascular and non-communicable diseases (like obesity,

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diabetes, cancer, hyperlipidemia, hypertension, stroke, heart disease, osteoporosis); reduced health; poor physical functioning; increased chances of developing anxiety and depression; decreased quality of life; and increased all-cause mortality (Boulton et al., 2018; Dupuy et al., 2015). Sequel to this, associated factors of PA and physical inactivity among older adults have been variously surveyed. The shortfall in PA among older adults was reportedly due to many factors like: unavailability of facilities for PA; socio-demographic factors (sex, age, education and so on); social support; ill health; fear of falling; and so on (Akosile, Agu et al., 2014; Borhaninejad et al., 2015; Smith et al., 2017).

Fear of falling is one of the mostly reported predictor of physical inactivity among older adults (Akosile et al., 2021; Matsuda et al., 2020; Sawa et al., 2020). It is highly prevalent and deleterious among older adults, and has adverse physical, cognitive, social, behavioural, psychological, family, medical and economic consequences in this group (Makino et al., 2018; Okoye et al., 2021). Fear of falling can lead to fall, reduced quality of life, social isolation, loss of balance confidence, avoidance of daily activities, anxiety and depression, institutionalization and so on (Beauvais & Beauvais, 2014; Denkinger et al., 2015). Fear of falling and PA have mutual cause-and-effect relationships that is usually stronger among female and older individuals who experience falls and limitations in activities of daily living (Kempen et al., 2009). Consequent upon the serious adverse effects of fear of falling and PA, their associated factors among older adults are attracting serious attention (Akosile, Agu et al., 2014; Akosile, Anukam et al., 2014; Akosile et al., 2015; 2021; Hirase et al., 2020; Matsuda et al., 2020; Sawa et al., 2020). However, reports on the relationships between fear of falling and some of its potential associated/risk factors are either conflicting or non-existent. Social support and general self-efficacy could be argued to fall within this category of risk factors.

Among older adults, social support and general self-efficacy are very important constructs that confer physical, social, emotional, cognitive and behavioural benefits (Thoits, 2011). These benefits can potentially influence falls, fear of falling and PA among older adults. Social support is referred to as positive exchanges with network that help people especially older adults stay healthy or cope with adverse events. It can offer the following benefits to older adults: living a healthy and long life; maintenance of an overall sense of stability and self-worth; coping with setbacks; and serving as a protective barrier against threats to well-being in the sense of restoring self-esteem, moderating levels of cardiovascular reactivity and restoring feeling of competence (Akey et al., 2013; Guruge et al., 2015; Thoits, 2011). This support can be emotional (e.g., nurturance), informational (e.g., advice), companionship (e.g., sense of belonging), tangible (e.g., financial assistance) or intangible (e.g., personal advice) (Racino, 2006; Uchino, 2009). It can come from many sources, such as family, friends, pets, neighbors, coworkers, organizations, government, and so on (Taylor, 2011). On the

other hand, general self-efficacy, which refers to an individual's overall belief in his/her ability to succeed, confers the following benefits to older adults: mediation of emotional, cognitive and behavioral patterns in a wide range of domains of psychological and physical functioning; improvement in interest and deep engrossment in activities; setting challenging goals and maintenance of strong commitment to them; heightening and sustaining efforts in the face of conditions; quick recovering of sense of efficacy after setbacks; and approaching threatening situations with assurance that they can exercise control over them (Kuys et al., 2015; Schwarzer, 2012). From the aforementioned benefits of social support and general self-efficacy, it could be inferred that both constructs could improve many aspect of life that usually translate into lower fear of falling and better PA participation among older adults.

Though the relationship between PA and fear of falling has been variously explored (Akosile, Agu et al., 2014; Borhaninejad et al., 2015), hardly is there any report available on the relationship between each construct and general self-efficacy among older adults. Social support has equally been reported to be associated with PA (Smith et al., 2017) but reports on its relationship with each of fear of falling and general self-efficacy especially among older adults is still hard to come by. Knowledge of the relationships between these constructs could drive appropriate interventions in remedying fear of falling and physical inactivity among older adults. The present study was designed to investigate on the levels and interrelationships between fear of falling, PA, self-efficacy and social support among older adults in Nnewi, Anambra State, Nigeria

## Methods

### Design

This was a cross-sectional survey involving 100 volunteering older adults consecutively recruited from a community (Nnewi) in Anambra State, Nigeria. Nnewi is a commercial community with an estimated population of 1,050,860 in 2020 (World Population Review, 2020). The participants were ambulant older adults (65 years and above) who were well-oriented in time, place and person. Written or verbal consent was obtained from each of the participants after the aims of the study had been painstakingly explained to them. The sample size was calculated using G-power 3.0.10 software. A sample size of 100 had a 95% power of detecting a change of 0.25 at an alpha level of 0.05 (Faul et al., 2007). The participants' socio-demographic variables (age, sex, occupation, highest educational attainment, marital and ambulatory statuses) were documented. The short Falls Efficacy Scale-International, the Physical Activity Scale for the Elderly, the Multidimensional Scale of Perceived Social Support and the General Self-efficacy Scale were used to collect data on fear of falling, PA, social support and

general self-efficacy respectively among the participants. All the questionnaires have been cross-culturally adapted and validated in Nigeria (Okoye et al., 2020, unpublished data). The questionnaires were either self- or researcher-administered depending on each participant preference and literacy level.

### Research Instruments

**Short Falls Efficacy Scale-International.** This is a 7-item scale developed for measuring fear of falling among older adults. It is a shortened version of the Falls Efficacy Scale-International, and has four-point Likert scale responses rated from 1–4. It includes a balanced range of items assessing common activities that: provoked very low levels of fear in some people (e.g., getting dressed); provoked medium levels of fear (e.g., going up and down stairs); and provoked very high levels of fear in some people (e.g., walking down a slope) (Zijlstra et al., 2007). Participants are asked to rate how concerned they are that they might fall while doing each activity. Scores of the individual items are summed to get the total score which ranges from 7 (no concern about falling) to 28 (severe concern about falling). The scoring is interpreted thus: low concern (7–8); moderate concern (9–13); and high concern (14–28). It exhibited acceptable internal consistency (Cronbach's alpha = 0.92), test-retest reliability (ICC = 0.83) and construct validity ( $r = 0.97$ ) without any ceiling effect.

**Physical Activity Scale for the Elderly.** This is a 12-item scale that measures the levels of self-reported PA in individuals aged 65 years or older. The items explore the frequency and duration of occupational, household and leisure activities during 7 days period (Siordia, 2012). It can be administered by self, through interview, through mail or on the telephone. Self-administered or interviewer-administered versions can be completed in 5–15 minutes. The Physical Activity Scale for the Elderly (PASE) consists of scores for three types of physical activities (leisure time, work-related, and household activities) (Ku et al., 2013) with each question being scored differently (Ayvat et al., 2017). Participation in leisure activities are scored as (1) never, (2) seldom, (3) sometimes and (4) often. Household activities are scored as (1) Yes and (2) No. Duration of the activities are scored as (1) less than 1 hour, (2) 1–2 hours, (3) 2–4 hours, and (4) more than 4 hours (Ku et al., 2013). The scores for leisure time, work-related, and household activities are summed to get the overall PASE score that ranges from 0 to 400 or more, with higher scores showing better PA levels (Washburn et al., 1993). It has an acceptable internal consistency ( $\alpha = 0.815$ ), test-retest reliability (ICC = 0.967), and validity (Okoye et al., 2020; Washburn et al., 1993).

**Multidimensional Scale of Perceived Social Support.** It is a 12-item instrument designed to assess the perception of social support adequacy from the sources of family, friends and

significant others (Adamczyk, 2013). It has three subscales (family, friends and significant other) that contain four items each. Participants are required to rate their perception on a 7-point Likert scale ranging from “very strongly disagree” (1) to “very strongly agree” (7). Each participant's total score is the average of the sum of all the items while each domain score is the average of the sum of the items that make up the domain. Hence, each score ranges from 1 to 7. Any mean scale score ranging from 1 to 2.9 could be considered low support; a score of 3–5 could be considered moderate support; and a score of 5.1–7 could be considered high support. It has adequate psychometric properties (NurFatimah et al., 2013; Rizwan & Aftab, 2009).

**General Self-Efficacy Scale.** This scale is designed to assess the general sense of perceived self-efficacy with the aim of predicting coping with daily hassles of older adults as well as adaptation after experiencing all kinds of stressful life events. It is a 10-item self-administered scale with a 4-point Likert scale response options scored thus: (1) not at all true, (2) hardly true, (3) moderately true and (4) exactly true. The sum of the responses to all the 10 items are obtained to yield the final composite score which ranges from 10 to 40 with higher scores indicating higher self-efficacy. Each item refers to successful coping and implies an internal-stable attribution of success. It has acceptable internal consistency ( $\alpha = 0.76$ – $0.90$ ), and criterion-related validity is documented in numerous correlation studies where positive coefficients is found with favorable emotions, dispositional optimism and work satisfaction. Negative coefficient were found with depression, anxiety, stress, burnout, and health complaints (Juárez & Contreras, 2008).

### Data Analysis

Obtained data were analyzed using the Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics of frequency count, percentage, range, mean and standard deviation were used to summarize participants' socio-demographic data and their scores on fear of falling, PA, general self-efficacy and social support. Data were subjected to normality test using the Kolmogorov-Smirnov's test before Spearman rank order correlation was used to determine the relationships between each pair of fear of falling, PA, general self-efficacy and social support among the participants. Partial correlation was used to control for the influence of age, sex, and education in the relationships between fear of falling, PA, general self-efficacy and social support of the participants. Structural equation modeling was used to depict the predictors of PA and fear of falling. Alpha level was set at 0.05.

## Results

### Socio-Demographic Profiles

A total of 100 community-dwelling older adults (35.0% males; mean age =  $74.25 \pm 8.01$  years) participated in this study.

**Table 1.** Socio-Demographic and Clinical Variables of the Participants.

Variable	Class	Frequency	Percentage
Sex	Male	35	35.0
	Female	65	65.0
Occupation	Unemployed	48	48.0
	Civil/Public servant	5	5.00
	Farming	25	25.0
	Trading	22	22.0
Education	None	38	38.0
	Primary	43	43.0
	Secondary	16	16.0
	Post-secondary	3	3.00
Marital status	Married	54	54.0
	Divorced	5	5.00
	Widowed	41	41.0
Ambulation status	Confined to bed most times	4	4.00
	Restricted to wheel chair most times	4	4.00
	Using a walking stick	24	24.0
	Walking without aid	68	68.0

Majority (81.0%) had at most primary education and were still occupationally active (52.0%) with farming (25.0%) being the predominant occupation. Forty-six percent of the participants were either divorced or widowed whereas 68.0% were still ambulating without any mobility aid (Table 1).

### Levels of Fear of Falling, Physical Activity, General Self-Efficacy and Social Support

The mean fear of falling ( $15.22 \pm 7.43$ ) score of the participants was high while their mean general self-efficacy ( $21.64 \pm 8.25$ ) score could be interpreted as low as it is only 38.8% of range of the entire scoring spectrum. Majority (75.0%) of the participants had moderate to high concern about falling. All the mean social support scores (total and domain) fell within the range for high social support with the support from family ( $5.72 \pm 1.19$ ) being the highest. Most (72.2%) of the participants' rated the total social support available to them as high. The mean PA score is  $114.76 \pm 90.18$ , indicating a physically inactive population. Major contributors to participants' PA were leisure time and household domains while contributions from work-related domains were low (Tables 2 and 3).

### Correlation Analysis

There were significant correlations between each pair of fear of falling, PA, general self-efficacy and social support of the participants ( $p < .05$ ). Physical activity had negative correlations with each of fear of falling ( $\rho = -0.68$ ;  $p < .001$ ) and social support ( $\rho = -0.41$ ;  $p < .001$ ) but had positive correlation with general self-efficacy ( $\rho = 0.73$ ;  $p < .001$ ). This indicates that higher fear of falling and social support

**Table 2.** Mean Age, Falls-Efficacy, General Self-Efficacy, Social Support and Physical Activity Scores of the Participants.

Variable	Range	Mean $\pm$ SD
Age (years)	65–94	74.25 $\pm$ 8.01
SFES-total	7–28	15.22 $\pm$ 7.43
GSES-total	10–40	21.64 $\pm$ 8.25
Social-support-significant order	1–7.00	5.68 $\pm$ 1.23
Social-support-family	1.75–7.00	5.72 $\pm$ 1.19
Social-support-friends	1–7.00	5.54 $\pm$ 1.38
Social-support-total	1.25–7.00	5.64 $\pm$ 1.22
PASE-leisure-time	0.0–12.54	41.20 $\pm$ 48.28
PASE-household	0.0–6.00	65.72 $\pm$ 49.54
PASE-work-related	0.0–1.40	7.83 $\pm$ 9.85
PASE-total	0.0–451.44	114.76 $\pm$ 90.18

Note. SFES = Short falls efficacy scale; GSES = General self-efficacy scale; PASE = Physical activity scale for the elderly.

and lower general self-efficacy connote lower PA. Fear of falling, general self-efficacy and social support predicted 45.6%, 53.6% and 16.4% of the variances in PA respectively. Fear of falling had a positive correlation with social support ( $\rho = 0.45$ ;  $p < .001$ ) and a negative correlation with general self-efficacy ( $\rho = -0.78$ ;  $p < .001$ ) with social support and general self-efficacy predicting 20.4% and 61.5% of the variances in fear of falling respectively. This shows that higher social support and lower general self-efficacy will lead to higher fear of falling among the participants. There was a significant negative correlation between social support and general self-efficacy among the participants ( $\rho = -0.34$ ;  $p < .001$ ) with each predicting 11.4% of the variances in each other. (Table 4). Participants' age had significant positive correlations with their fear of falling ( $\rho = 0.78$ ;  $p < .001$ ) and their social support ( $\rho = 0.45$ ;  $p < .001$ )

**Table 3.** Levels of Fear of Falling and Social Support Scores Among the Participants.

Variable	Category	Frequency	Percentage
Fear of falling	Low concern	25	25.00
	Moderate concern	27	27.00
	High Concern	48	48.00
Significant orders domain of social support	Low	2	2.00
	Moderate	28	28.00
	High	70	70.00
Social support family category	Low	2	2.00
	Moderate	24	24.00
	High	74	74.00
Social support friends category	Low	4	4.00
	Moderate	35	35.00
	High	61	61.00
Social support total category	Low	2	2.10
	Moderate	25	25.80
	High	70	72.20

**Table 4.** Spearman Rank Correlation Showing the Relationships Between Fear of Falling, General Self-Efficacy, Social Support and Physical Activity Scores of the Participants.

Variables	FOF	GSE	SS	PA
FOF	rho=	-0.784	0.452	-0.675
	p=	<0.001*	<0.001*	<0.001*
	c.d=	0.615	0.204	0.456
GSE	rho=	-0.337	0.732	0.732
	p=	<0.001*	<0.001*	<0.001*
	c.d=	0.114	0.536	0.536
Social support	rho=	-0.405	-0.405	-0.405
	p=	<0.001*	<0.001*	<0.001*
	c.d=	0.164	0.164	0.164
Age	rho=	0.777	-0.612	-0.605
	p=	<0.001*	<0.001*	<0.001*
	c.d=	0.604	0.375	0.205
Educational attainment	rho=	-0.326	0.245	-0.155
	p=	0.001*	0.014*	0.123
	c.d=	0.106	0.060	0.024

Note. C.d = coefficient of determination; FOF = Fear of falling; GSE = General self-efficacy; PA = Physical activity.

\*significant at  $p < .05$ .

but significant negative correlations with their general self-efficacy ( $\rho = -0.61$ ;  $p = <.001$ ) and PA ( $\rho = -0.61$ ;  $p = <.001$ ) indicating that older age is associated with higher fear of falling and social support but lower general self-efficacy and PA. Age predicted between 20.5% and 60.4% of the variances in these constructs. Participants' highest educational attainment had significant negative correlations with their fear of falling ( $\rho = -0.33$ ;  $p = .001$ ) but significant positive correlations with their general self-efficacy ( $\rho = .25$ ;  $p = <.001$ ) and PA ( $\rho = .27$ ;  $p = <.01$ ). This means that higher educational attainment is associated with reduced fear of falling and but increased general self-efficacy and PA (Table 4).

After controlling for participants' age, sex and educational attainment, the significant relationships that existed between social support and each of PA and general self-efficacy

disappeared ( $p > .05$ ). Though the strength of the correlations between all the other variables pairs reduced, the significant statuses and directions of the correlations remained the same after controlling for participants' age, sex and educational attainment (Table 5).

### Structural Equation Modeling

Structural equation modelling revealed that fear of falling and general self-efficacy (but not social support) significantly predicted PA among the participants. It was also revealed that fear of falling was significantly predicted by the participants' general self-efficacy and social support (Table 6). The predictions are pictorially represented in Figures 1 and 2.

**Table 5.** Partial Correlation Between Fear of Falling, General Self-Efficacy, Social Support and Physical Activity With Participants' Age, Sex and Educational Attainment Controlled For.

Variables	FOF	GSE	SS	PA
FOF	rho=	-0.572	0.230	-0.423
	p=	<0.001*	0.023*	<0.001*
	c.d=	0.278	0.053	0.179
GSE	rho=		-0.064	0.585
	p=		0.531	0.001*
	c.d=		0.004	0.342
Social support	rho=			-0.134
	p=			0.191
	c.d=			0.018

Note. C.d = coefficient of determination; FOF = Fear of falling; GSE = General self-efficacy; PA = Physical activity.

\*=significant at  $p < .05$ .

## Discussion

### *Physical Activity and Fear of Falling Levels of the Participants*

This study was designed to determine the levels and inter-relationships between fear of falling, PA, general self-efficacy, and perceived social support among community-dwelling Nigerian older adult population. This is necessitated by the fact that having in-depth knowledge about associated factors of fear of falling and physical inactivity is a prerequisite for development of interventions for tackling these problems (Okoye et al., 2021). Participants in this study exhibited high level and prevalence of fear of falling. High prevalence of fear of falling had been reported in the local environment and world over (Akosile, Agu et al., 2014; Akosile, Anukam et al., 2014; Alcolea-Ruiz et al., 2021; Tomita et al., 2018), and this had been attributed to the negative impact of ageing process on the body systems (Akosile et al., 2018). The mean PA score recorded in this study depicts a low PA level, and falls within the same quartile range previously reported among older adults in different parts of the world (Akosile et al., 2021; Ng et al., 2020; Siegmund et al., 2021). Physical inactivity had been reported as one of the major public health problems among older adults (Levinger & Hill, 2021). House-hold and work-related activities had the highest and the lowest contributions to the PA score of the participants similar to previous reports (Akosile, Agu et al., 2014). This may not be surprising as many of the adults must have retired from active employment, and were more likely to engage in lawn, yard and in-house works.

### *General Self-Efficacy and Social Support Levels of the Participants*

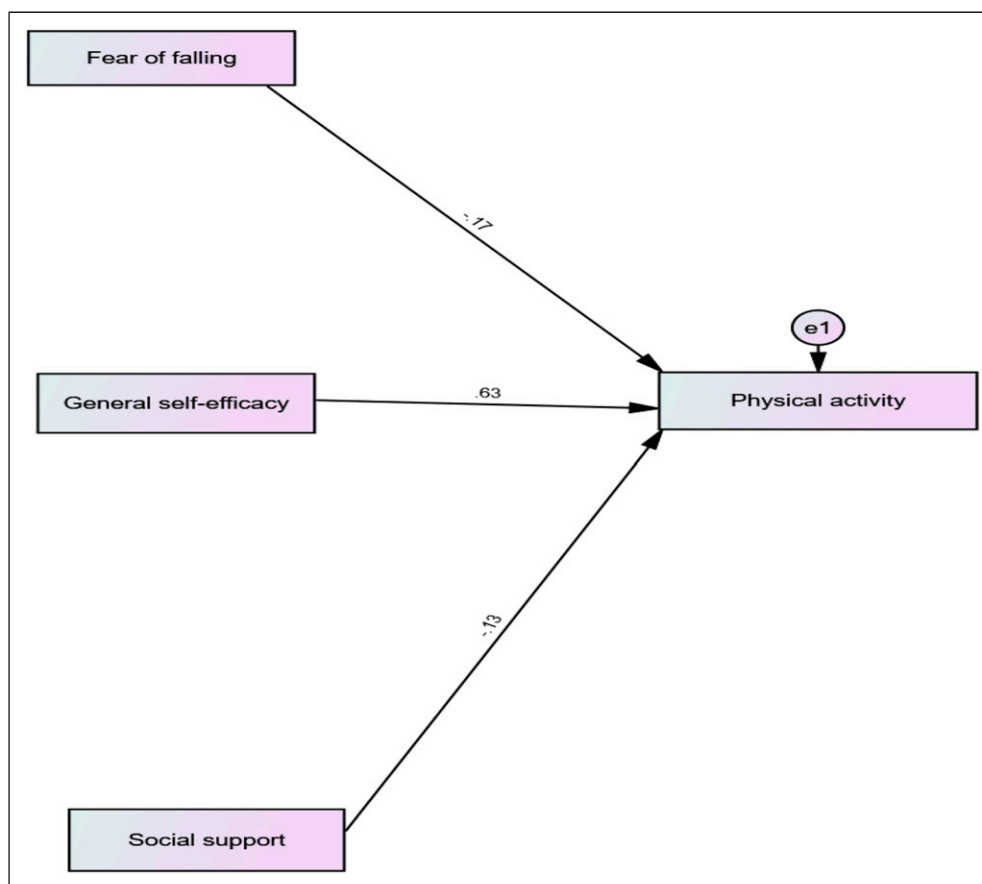
Participants' mean general self-efficacy score was only 39% of the range of the scoring spectrum (10–40) thereby depicting a

**Table 6.** Structural Equation Model Showing the Prediction Pattern for Physical Activity and Fear of Falling.

Variables	Estimates	p
Physical activity		
Fear of falling	-0.170	.023*
General self-efficacy	0.630	<.001*
Social support	-0.135	.072
Fear of falling		
General self-efficacy	-0.717	<.001*
Social support	0.241	<.001*

\*significant at  $p < .05$ .

poor level of general self-efficacy. This may be a cause for concern considering the reported adverse effects of poor self-efficacy to health and well-being (Whitehall et al., 2021). Though self-efficacy had been studied in different areas (including balance, falls, exercise, foot care and so on) among older adults (Levy et al., 2020; Sharoni et al., 2018; Weiss & Perry, 2020), studies on general self-efficacy in this group are rather rare. The mean general self-efficacy score in the present study was lower than previous figures among the general population (Bonsaksen et al., 2019), nurses (Yao et al., 2018), sports referees (Karaçam & Pular, 2017) and so on. The fact that stroke survivors (Volz et al., 2019), a group with serious debilitating condition had a higher score than the participants of this study might be a pointer to how poor the present score is. Participants in the present study had high level of perceived social support with majority rating their social support highly. The widely varied measures of social support used in previous studies could make comparison with the present report difficult. However, previous reports had reported low (Bai et al., 2018) and high (Iglesias & Arias, 2015) levels of social support among older adults. The fact that the setting of the present study practice extended family setting where the family members have a filial responsibility of taking care of their old or sick



**Figure 1.** A path diagram showing structural equation modelling of the prediction of physical activity by fear of falling, general self-efficacy and social support of the participants.

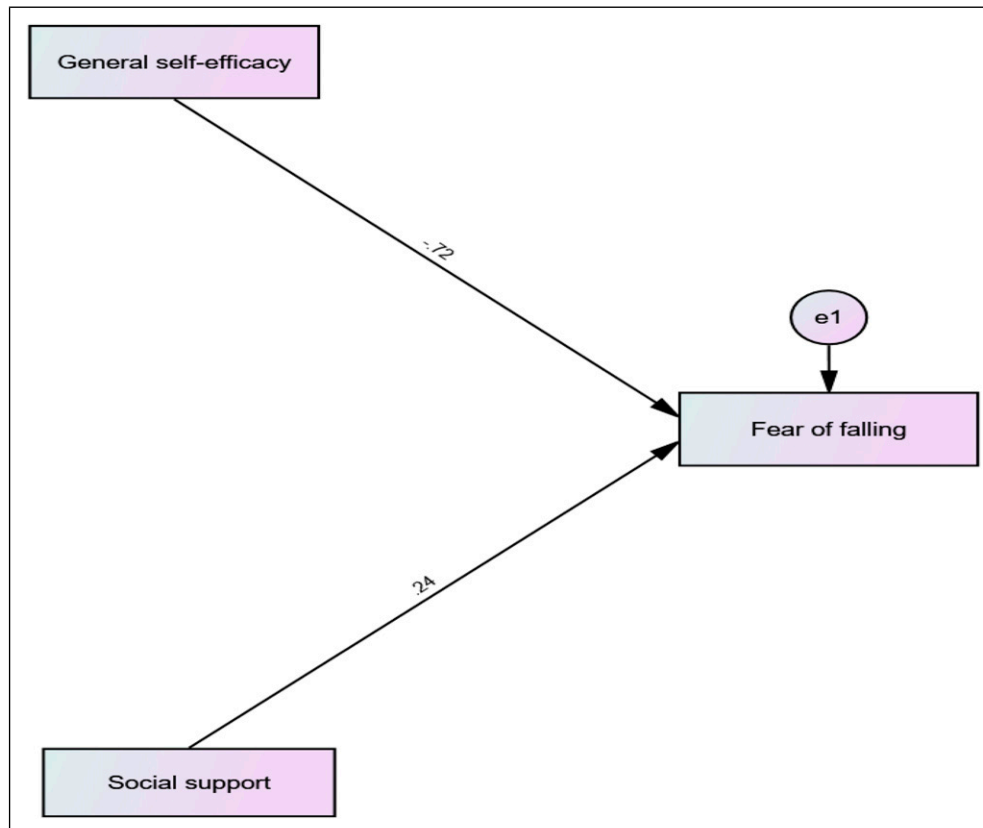
relatives might explain the high level of social support recorded in this study (Okoye et al., 2019). This opinion might have been buttressed by the fact that support from the family contributed the most to the overall perceived social support among the participants. This notwithstanding, support from friends and significant others were also highly rated. This may be attributed to the communal life styles practiced in the setting of this study where the community-dwellers are closely, filially and socially knitted together. They partake together in activities like village meetings, marriage ceremonies, child naming or dedications, funerals, and postpartum care which serve as veritable means of support to older adults (Ebimgbo et al., 2019).

### *Correlational Analysis and Structural Equation Modeling*

There were significant correlations between each pair of PA, fear of falling, general self-efficacy and social support scores of the participants. Fear of falling and general self-efficacy were significant predictors of PA while general self-efficacy and social support were significant predictors of fear of falling. Participants' fear of falling had significant negative correlation with each of their general self-efficacy

and PA but had positive correlation with their social support. Physical activity had been variously reported to associate negatively with fear of falling (Akosile, Agu et al., 2014; Akosile et al., 2021) with both constructs sharing mutual cause-and-effect relationship. However, no previous study is available for referencing on the relationship between fear of falling and general self-efficacy. The significant relationship between fear of falling and PA may not be surprising considering the physical, social, psychological and cognitive benefits of PA (Devereux-Fitzgerald et al., 2016; World Health Organization, 2021) which would understandably reduce fear of falling. In the same vein, general self-efficacy (described as an individual's overall belief in his/her ability to succeed), a construct that confers physical, functional, cognitive, behavioural and psychological benefits (Kuys et al., 2015) would also understandably reduce fear of falling. Studies on the relationships between social support and fear of falling are sparse.

The positive relationship and predictive association between fear of falling and perceived social support in the present study is in contrast with previous reports from other climes that reported negative (Vo et al., 2020) and no (Todd



**Figure 2.** A path diagram showing structural equation modelling of the prediction of fear of falling by general self-efficacy and social support of the participants.

et al., 2021) significant relationship between the two constructs. As earlier stated, the setting of the present study practice communal lifestyle where everyone has the responsibility of looking out for their peers especially a close relative during a period of ill-health or incapacitation. It is likely that more attention are channeled to individuals that experience fear of falling or any other debilitating condition. This could also explain the negative relationship between social support and general self-efficacy in the present study. Though this was not directly investigated in the present study, it could be reasonably assumed. What could not be ascertained was whether the provided support was only centered in meeting needs of the individuals without being channeled towards improving their performance or self-confidence in life. This could be a focus for future studies. However, a critical look at the items of the instrument used in assessing social support in this study suggests that a chunk of the reported social support received by the older adults in this study might have been emotional support with no focus on whether the support was geared towards changing maladaptive beliefs and attitude, and encouraging improvement in their physical functioning and performance. There was a significant positive relationship between PA and general self-efficacy

in the present result. Though there are previous reports on the positive relationship between PA/exercise self-efficacy and PA (Liu & Dai, 2017), there seems to be none on the relationship between general self-efficacy and PA among older adults. However, significant relationships had been reported between general self-efficacy and PA in surgery candidates (McAuley et al., 2011) and adolescents (Reigal et al., 2014). The two constructs confer similar benefits, and could logically correlate significantly with each other.

In the present study, participants' age had significant positive correlation with their fear of falling and social support but significant negative correlation with their general self-efficacy and PA. This may not be unexpected considering the deleterious effect of ageing on the psychological, physical, and social health of older adults (Anand, 2014), which would understandably reduce their general self-efficacy and PA but increased their fear of falling. As earlier stated, family and community members would potentially channel more support to more incapacitated participants, who would logically be the older ones. Educational attainment of the participants had significant negative correlation with their fear of falling and available social support but significant positive correlation with their general self-efficacy



and PA. This may not be surprising. Higher education attainment would understandably translate to better awareness of the health benefits of PA participation. Hence, more educated individuals would tend to participate more in PA, which would in turn improve their general self-efficacy, and reduce their fear of falling. This purported increase in PA among the more enlightened older adults would then reduce the amount of social support channeled towards them.

In this study, controlling for participants' age and educational attainment obliterated the significant correlation between social support and each of PA and general self-efficacy, and reduced the strength of the correlations between all the other variable pairs. Age and educational attainment of older adults had been previously reported to influence the correlation between older adults fear of falling and educational attainment (Kempen et al., 2009). This may be highlighting the need to pay attention to age and educational attainment while considering the correlations between these constructs among older adults.

### *Limitations*

Some limitations to the present study ought to be acknowledged. The participants were conveniently recruited, and this could have to some extent affected the generalizability of the present results. The participants were recruited irrespective of their comorbidity thereby making it difficult ascertaining the roles of comorbidities on the levels and interrelationships between the constructs. The cross-sectional nature of the study did not allow the establishment of direction of causality with findings only reported based on the observed relationships. Hence, the present study should be interpreted with caution.

### *Implications for Practice and Research*

Elevated fear of falling, low PA participation and poor general self-efficacy among the sampled older adults calls for attention of relevant stakeholders, including governments, health professionals, educators, communities, and older adults and their family members. This study revealed that promoting PA among older adults could reduce their fear of falling as well as improve their general self-efficacy. This has thus highlighted the need for provision of facilities for exercise and recreation by the government in every community. Also, government should intensify effort towards improving the neighbourhood safety (especially in the face of the present serious security challenges in the setting of this study) as this would encourage outdoor physical activity participation among older adults. In

Nigeria (and many other low-and-middle income countries) where public social security is very poor or non-existent, older adults may need to solely rely on their family members, friends and community (at least for the time being) for the needed social support. Though the older adults reported receiving high social supports from their family members, friends and significant orders, these supports may need to be properly channeled in order to improve the physical health of the older adults. In addition to providing emotional support and basic needs of older adults, family members, friends and communities also need to channel their efforts towards encouraging PA participation, and changing older adults' attitudes and beliefs about their abilities and participation in PA. Physical activity participation should not be sacrificed on the altar of filial responsibility of providing all the needs of older adults. Educators and health professionals would need to educate the populace (including the older adults) on how to avoid counterproductive social support that would be detrimental to the health and well-being of older adults. Though the nature of social support rendered to the older adults was not explored in the presented study, the items on the outcome measure suggested that the support was probably centered on meeting the emotional and basic needs of the older adults. Future studies are needed to explore the nature of social support rendered to older adults in low-and-middle income countries. While rendering all the aforementioned interventions, special attention should be channeled to older adults who are more advanced in age and had less educational attainment.

### **Conclusion**

Fear of falling was quite prevalent in this sample of older adults who had poor levels of PA and general self-efficacy but high level of perceived social support. Significant correlations (which was influenced by age and educational attainment) exists between fear of falling, PA, general self-efficacy and social support. The high fear of falling and low PA and general self-efficacy in the sample is worrisome and requires attention of relevant stakeholders (including the government, health professionals, civil society groups, and so on). Government should provide safe environment and facilities for exercise and recreation in order to encourage PA among older adults. Family and community members may need to change the nature of social support rendered to older adults by shifting focus towards encouraging PA and improving self-confidence in this group. Educators and health professionals will need to educate the populace on the correct mix of support to be rendered to the older adults.

## Appendix

### List of abbreviations

FOF	Fear of falling
SFES-I:	Short Falls Efficacy Scale International
SS	Social support
MSPSS	Multidimensional Scale of Perceived Social Support
GSE	General self-efficacy
GSES	General Self-Efficacy Scale
PA	Physical activity
PASE	Physical Activity Scale for the Elderly

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### Ethical Approval

An ethical review board approved this study. Before commencement of data collection, the study was approved by the Ethics Committee of the Faculty of Health Sciences and Technology, Nnamdi Azikiwe University, Nnewi Campus, Anambra State, Nigeria, in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards (Approval number: ERC/FHST/NAU/2018/047).

### Informed Consent

Informed consent was obtained from the participants prior to data collection.

### Data Availability

The dataset used and/or analysed during the current study are available from the corresponding author on reasonable request.

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### References

- Adamczyk, K. (2013). Development and validation of the Polish-language version of the multidimensional scale of perceived social support (MSPSS). *Revue Internationale de Psychologie Sociale*, 26(4), 25–48. <https://www.cairn.info/revue-internationale-de-psychologie-sociale-2013-4-page-25.htm>
- Akey, J. E., Rintamaki, L. S., & Kane, T. L. (2013). Health belief model deterrents of social support seeking among people coping with eating disorders. *Journal of Affective Disorders*, 145(2), 246–252. <https://doi.org/10.1016/j.jad.2012.04.045>
- Akosile, C. O., Agu, C. U., Adegoke, B. O. A., Okoye, E. C., Okeke, I. A., & Emeahara, G. (2014a). Physical activity, fear of falling and falls in nigerian older adults. *Ageing and Social Change*, 3(2), 25–35. <https://doi.org/10.18848/2160-1909/CGP/v03i02/35240>
- Akosile, C. O., Anukam, G. O., Johnson, O. E., Fabunmi, A. A., Okoye, E. C., & Iheukwumere, N. (2014b). Fear of falling and quality of life of apparently-healthy elderly individuals from a nigerian population. *Journal of Cross-Cultural Gerontology*, 29(2), 201–209. <https://doi.org/10.1007/s10823-014-9228-7>
- Akosile, C. O., Igwemmadu, C. K., Okoye, E. C., Odole, A. C., Mgbeojedo, U. G., Fabunmi, A. A., & Onwuakagba, I. U. (2021). Physical activity level, fear of falling and quality of life: A comparison between community-dwelling and assisted-living older adults. *BMC Geriatrics*, 21(1), 12. <https://doi.org/10.1186/s12877-020-01982-1>
- Akosile, C. O., Mgbeojedo, U. G., Maruf, F. A., Okoye, E. C., Umeonwuka, I. C., & Ogunniyi, A. (2018). Depression, functional disability and quality of life among Nigerian older adults: Prevalences and relationships. *Archive of Gerontology and Geriatrics*, 74, 39–43. <https://doi.org/10.1016/j.archger.2017.08.011>
- Akosile, C. O., Odidika, F. J., Okoye, E. C., Adegoke, B. O. A., Maruf, F. A., Oderinde, A. A., Kehinde, A. O., & Raji, N. O. (2015). Physical function, fear of falling, occupational status and falls in a nigerian older adults sample. *Ageing International*, 40(4), 327–337. <https://doi.org/10.1007/s12126-014-9202-2>
- Alcolea-Ruiz, N., Alcolea-Ruiz, S., Esteban-Paredes, F., Beaud-Lagos, M., Villar-Espejo, M. T., & Pérez-Rivas, F. J. (2021). Prevalence of fear of falling and related factors in community-dwelling older people. *Atencion Primaria*, 53(2), 101962–101962. <https://doi.org/10.1016/j.aprim.2020.11.003>
- Anand, A. (2014). Understanding depression among older adults in six low-middle income countries using WHO-SAGE survey. *Behavioral Health*, 1(2), 1–11. <http://jghcs.info/index.php/bh/article/view/363>
- Ayvat, E., Kilinc, M., & Kirdi, N. (2017). The Turkish version of the physical activity scale for the elderly (PASE): Its cultural adaptation, validation, and reliability. *Turkish Journal of Medical Sciences*, 47(3), 908–915. <https://doi.org/10.3906/sag-1605-7>
- Bai, X., Yang, S., & Knapp, M. (2018). Sources and directions of social support and life satisfaction among solitary Chinese older adults in Hong Kong: The mediating role of sense of loneliness. *Clinical Interventions in Aging*, 13, 63–71. <https://doi.org/10.2147/cia.s148334>
- Beauvais, A., & Beauvais, J. E. (2014). Reducing the Fear of falling through a community evidence-based intervention. *Home Healthcare Nurse*, 32(2), 98–105. <https://doi.org/10.1097/nhh.0000000000000017>

- Bonsaksen, T., Lerdal, A., Heir, T., Ekeberg, Ø., Skogstad, L., Grimholt, T. K., & Schou-Bredal, I. (2019). General self-efficacy in the Norwegian population: Differences and similarities between sociodemographic groups. *Scandinavian Journal of Public Health, 47*(7), 695–704. <https://doi.org/10.1177/1403494818756701>
- Borhaninejad, V., Rashedi, V., Tabe, R., Delbari, A., & Ghasemzadeh, H. (2015). Relationship between fear of falling and physical activity in older adults. *Medical Journal of Mashhad University of Medical Sciences, 58*(8), 446–452. <https://doi.org/10.1002/pmjr.12289>
- Boulton, E. R., Horne, M., & Todd, C. (2018). Multiple influences on participating in physical activity in older age: Developing a social ecological approach. *Health Expectations, 21*(1), 239–248. <https://doi.org/10.1111/hex.12608>
- Denkinger, M. D., Lukas, A., Nikolaus, T., & Hauer, K. (2015). Factors associated with fear of falling and associated activity restriction in community-dwelling older adults: A systematic review. *American Journal of Geriatric Psychiatry, 23*(1), 72–86. <https://doi.org/10.1016/j.jagp.2014.03.002>
- Devereux-Fitzgerald, A., Powell, R., Dewhurst, A., & French, D. P. (2016). The acceptability of physical activity interventions to older adults: A systematic review and meta-synthesis. *Social Science & Medicine, 158*, 14–23. <https://doi.org/10.1016/j.socscimed.2016.04.006>
- Dupuy, O., Gauthier, C. J., Fraser, S. A., Desjardins-Crèpeau, L., Desjardins, M., Mekary, S., Bherer, L., Hoge, R. D., Pouliot, P., & Bherer, L. (2015). Higher levels of cardiovascular fitness are associated with better executive function and prefrontal oxygenation in younger and older women. *Frontiers in Human Neuroscience, 9*, 66. <https://doi.org/10.3389/fnhum.2015.00066>
- Ebimbo, S. O., Obi-Keguna, C. N., Chukwu, N. E., Onalu, C. E., Abonyi, S. E., & Okoye, U. O. (2019). Culture-based social support to older adults in Nnewi, South-East Nigeria. *African Population Studies, 33*(2), 4891–4900. <https://doi.org/10.11564/33-2-1402>
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). A flexible statistical power analysis program for the social, behavioral and biomedical sciences. *Behavior Research Methods, 39*(2), 175–191. <https://doi.org/10.3758/bf03193146>
- Guruge, S., Thomson, M. S., George, U., & Chaze, F. (2015). Social support, social conflict, and immigrant women's mental health in a Canadian context: A scoping review. *Journal of Psychiatric and Mental Health Nursing, 22*(9), 655–667. <https://doi.org/10.1111/jpm.12216>
- Hirase, T., Okubo, Y., Sturmieks, D. L., & Lord, S. R. (2020). Pain is associated with poor balance in community-dwelling older adults: A systematic review and meta-analysis. *Journal of the American Medical Directors Association, 21*(5), 597–603. <https://doi.org/10.1016/j.jamda.2020.02.011>
- Iglesias, S., & Arias, A. V. (2015). Structural and functional social support in elderly objective and subjective health ratings. *European Journal of Investigation in Health, Psychology and Education, 5*(2), 243–252. <https://doi.org/10.3390/ejihpe5020023>
- Juárez, F., & Contreras, F. (2008). Psychometric properties of the general self-efficacy scale in a Colombian sample. *International Journal of Psychological Research, 1*(2), 6–12. <https://doi.org/10.21500/20112084.907>
- Karaçam, A., & Pular, A. (2017). Examining the relationship between referee self-efficacy and general self-efficacy levels of football, basketball and handball referees. *Universal Journal of Educational Research, 5*(9), 1571–1579. <https://doi.org/10.13189/ujer.2017.050914>
- Kempen, G. I., van Haastregt, J., McKee, K. J., Delbaere, K., & Zijlstra, G. A. (2009). Socio-demographic, health-related and psychosocial correlates of fear of falling and avoidance of activity in community-living older persons who avoid activity due to fear of falling. *BMC Public Health, 9*(1), 170–177. <https://doi.org/10.1186/1471-2458-9-170>
- Ku, P. W., Sun, W. J., Chang, C. Y., & Chen, L. J. (2013). Reliability and validity of the Chinese version of the physical activity scale for the elderly. *Sports & Exercise Research, 15*(3), 309–319. <https://doi.org/10.5297/SER.1503.006>
- Kuys, S. S., Donovan, J., Mattin, S., & Low Choy, N. L. (2015). Balance self-efficacy in older adults following inpatient rehabilitation. *International Journal of Rehabilitation Research, 38*(2), 167–172. <https://doi.org/10.1097/mrr.000000000000106>
- Levinger, P., & Hill, K. D. (2021). Are the recommended physical activity guidelines practical and realistic for older people with complex medical issues? *Journal of Geriatric Physical Therapy, 44*(1), 2–8. <https://doi.org/10.1519/jpt.0000000000000291>
- Levy, S. S., Thralls, K. J., Goble, D. J., & Krippes, T. B. (2020). Effects of a community-based exercise program on older adults' physical function, activities of daily living, and exercise self-efficacy: Feeling fit club. *Journal of Applied Gerontology, 39*(1), 40–49. <https://doi.org/10.1177/0733464818760237>
- Liu, H., & Dai, X. (2017). Correlation between physical activity and self-efficacy in Chinese university students. *Revista de Psicología del Deporte, 26*(4), 110–114. <https://www.semanticscholar.org/paper/Correlation-between-physical-activity-and-in-Liu-Dai/cf61764fcd7a0b11c8dd9b4b4553e6940807bef8>
- Makino, K., Makizako, H., Doi, T., Tsutsumimoto, K., Hotta, R., Nakakubo, S., Suzuki, T., & Shimada, H. (2018). Impact of fear of falling and fall history on disability incidence among older adults: Prospective cohort study. *International Journal of Geriatric Psychiatry, 33*(4), 658–662. <https://doi.org/10.1002/gps.4837>
- Matsuda, P. N., Eagen, T., Hreha, K. P., Finlayson, M. L., & Molton, I. R. (2020). Relationship between fear of falling and physical activity in people aging with a disability. *PM & R, 12*(5), 454–461. <https://doi.org/10.1002/pmjr.12289>
- McAuley, E., Szabo, A., Gothe, N., & Olson, E. A. (2011). Self-efficacy: Implications for physical activity, function, and functional limitations in older adults. *American Journal of Lifestyle Medicine, 5*(4), 361–369. <https://doi.org/10.1177/1559827610392704>

- Ng, L. P., Koh, Y. L. E., & Tan, N. C. (2020). Physical activity and sedentary behaviour of ambulatory older adults in a developed Asian community: A cross-sectional study. *Singapore Medical Journal*, 61(5), 266–271. <https://doi.org/10.11622/smedj.2020022>
- Notthoff, N., Reisch, P., & Gerstorf, D. (2017). Individual characteristics and physical activity in older adults: A systemic review. *Gerontology*, 63(5), 443–459. <https://doi.org/10.1159/000475558>
- NurFatihah, O., Rahmah, M. A., & Rosnah, S. (2013). Informal social support and caregiver burden of caregivers of elderly with dementia. *IOSR-Journal of Humanities and Social Science*, 8(5), 68–72. <https://www.iosrjournals.org/iosr-jhss/papers/Vol8-issue5/I0856872.pdf>
- Okoye, E. C., Akosile, C. O., Maruf, F. A., Onwuakagba, I. U., & Chukwuma, V. C. (2020). Cross-cultural adaptation and validation of Nigerian (Igbo) version of the physical activity scale for the elderly. *Journal of Aging and Physical Activity*, 29(4), 553–561. <https://doi.org/10.1123/japa.2020-0142>
- Okoye, E. C., Akosile, C. O., Maruf, F. A., Onwuakagba, I. U., & Mgbėjojedo, U. G. (2021). Falls and fear of falling among older adults in an assisted-living facility: a qualitative and foundational study for intervention development in a developing country. *Archives of Gerontology and Geriatrics*, 94(2), 104375. <https://doi.org/10.1016/j.archger.2021.104375>
- Okoye, E. C., Okoro, S. C., Akosile, C. O., Onwuakagba, I. U., Ihegihu, E. Y., & Ihegihu, C. C. (2019). Informal caregivers' well-being and care recipients' quality of life and community reintegration—findings from a stroke survivor sample. *Scandinavian Journal of Caring Sciences*, 33(3), 641–650. <https://doi.org/10.1111/scs.12657>
- Racino, J. (2006). Social support. In G. L. Albrecht (Ed.), *Encyclopedia on disability* (pp. 1470–1471). SAGE Publications.
- Reigal, R. E., Videra, A., & Gil, J. (2014). Physical exercise, general self-efficacy and life satisfaction in adolescence. *Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte*, 14(55), 561–576.
- Rizwan, M., & Aftab, S. (2009). Psychometric properties of the multidimensional scale of perceived social support in Pakistani young adults. *Pakistan Journal of Psychology*, 40(1), 51–65. <https://www.proquest.com/openview/799a63db042a0c8447070443eb237d0e/1?pq-origsite=gscholar&cbl=616540>
- Sawa, R., Asai, T., Doi, T., Misu, S., Murata, S., & Ono, R. (2020). The association between physical activity, including physical activity intensity, and fear of falling differs by fear severity in older adults living in the community. *The Journals of Gerontology: Series B*, 75(5), 953–960. <https://doi.org/10.1093/geronb/gby103>
- Schwarzer, R. (2012). *Self-efficacy: Thought control of action*. Hemisphere.
- Sharoni, S. K. A., Abdul Rahman, H., Minhat, H. S., Shariff-Ghazali, S., & Azman Ong, M. H. (2018). The effects of self-efficacy enhancing program on foot self-care behaviour of older adults with diabetes: A randomised controlled trial in elderly care facility, Peninsular Malaysia. *PloS One*, 13(3), Article e0192417. <https://doi.org/10.1371/journal.pone.0192417>
- Siegmund, L. A., Distelhorst, K. S., Bena, J. F., & Morrison, S. L. (2021). Relationships between physical activity, social isolation, and depression among older adults during COVID-19: A path analysis. *Geriatric Nursing*, 42(5), 1240–1244. <https://doi.org/10.1016/j.gerinurse.2021.08.012>
- Siordia, C. (2012). Alternative scoring for physical activity scale for the elderly (PASE). *Maturitas*, 72(4), 379–382. <https://doi.org/10.1016%2Fj.maturitas.2012.05.009>
- Smith, G. L., Banting, L., Eime, R., O'Sullivan, G., & Van Uffelen, J. G. (2017). The association between social support and physical activity in older adults: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 14(1), 56. <https://doi.org/10.1186/s12966-017-0509-8>
- Taylor, S.E. (2011). Social support: A Review. In M. S. Friedman (Ed.), *The Handbook of Health Psychology* (pp. 189–214). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195342819.013.0009>
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52(2), 145–161. <https://doi.org/10.1177/0022146510395592>
- Todd, K., Czech, D. R., & Biber, D. D. (2021). The effect of perceived level of social support on the fear of falling: Prepared for activities, adaptation, and aging. *Activities, Adaptation & Aging*, 45(3), 190–201. <https://doi.org/10.1080/01924788.2020.1746052>
- Tomita, Y., Arima, K., Tsujimoto, R., Kawashiri, S. Y., Nishimura, T., Mizukami, S., & Aoyagi, K. (2018). Prevalence of fear of falling and associated factors among Japanese community-dwelling older adults. *Medicine*, 97(4), Article e9721. <https://doi.org/10.1097/md.00000000000009721>
- Uchino, B. N. (2009). Understanding the links between social support and physical health: A life-span perspective with emphasis on the separability of perceived and received support. *Perspectives on Psychological Science*, 4(3), 236–255. <https://doi.org/10.1111%2Fj.1745-6924.2009.01122.x>
- Volz, M., Voelkle, M. C., & Werheid, K. (2019). General self-efficacy as a driving factor of post-stroke depression: A longitudinal study. *Neuropsychological Rehabilitation*, 29(9), 1426–1438. <https://doi.org/10.1080/09602011.2017.1418392>
- Vo, T. H. M., Nakamura, K., Seino, K., Nguyen, H. T. L., & Van Vo, T. (2020). Fear of falling and cognitive impairment in elderly with different social support levels: findings from a community survey in Central Vietnam. *BMC Geriatrics*, 20(1), 141. <https://doi.org/10.1186/s12877-020-01533-8>
- Washburn, R. A., Smith, K. W., Jette, A. M., & Janney, C. A. (1993). The Physical Activity Scale for the Elderly (PASE): Development and evaluation. *Journal of Clinical Epidemiology*, 46(2), 153–162. [https://doi.org/10.1016/0895-4356\(93\)90053-4](https://doi.org/10.1016/0895-4356(93)90053-4)
- Weiss, D., & Perry, E. L. (2020). Implications of generational and age metastereotypes for older adults at work: The role of agency, stereotype threat, and job search self-efficacy. *Work, Aging and Retirement*, 6(1), 15–27. <https://doi.org/10.1093/workar/waz010>

- Whitehall, L., Rush, R., Górska, S., & Forsyth, K. (2021). The general self-efficacy of older adults receiving care: A systematic review and meta-analysis. *The Gerontologist*, 61(6), Article e302–e317. <https://doi.org/10.1093/geront/gnaa036>
- World Health Organization (2021). *Physical activity fact sheet*. World Health Organization. <https://apps.who.int/iris/bitstream/handle/10665/346252/WHO-HEP-HPR-RUN-2021.2-eng.pdf?sequence=1>
- World Population Review (2020). *Nnewi population 2020*. <https://worldpopulationreview.com/world-cities/nnewi-population>
- Yao, Y., Zhao, S., Gao, X., An, Z., Wang, S., Li, H., Li, Y., Gao, L., Lu, L., & Dong, Z. (2018). General self-efficacy modifies the effect of stress on burnout in nurses with different personality types. *BMC Health Services Research*, 18(1), 667. <https://doi.org/10.1186/s12913-018-3478-y>
- Zijlstra, G. A. R., Van Haastregt, J. C. M., Van Eijk, J. T. M., van Rossum, E., Stalenhoef, P. A., & Kempen, G. I. (2007). Prevalence and correlates of fear of falling, and associated avoidance of activity in the general population of community-living older people. *Age and Ageing*, 36(3), 304–309. <https://doi.org/10.1093/ageing/afm021>