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Review

Falls among Older Adults: Screening, Identification, Rehabilitation, and Management

Silvia Giovannini [1,2,*], Fabrizio Brau [1,2], Vincenzo Galluzzo [1,2], Domenico Alessandro Santagada [3], Claudia Loreti [4], Lorenzo Biscotti [4,5], Alice Laudisio [6], Giuseppe Zuccalà [1,4] and Roberto Bernabei [1,4]

1 Department of Geriatrics and Orthopaedics, Università Cattolica del Sacro Cuore, 00168 Rome, Italy
2 UOS Riabilitazione Post-Acuzie, Fondazione Policlinico Universitario A. Gemelli IRCCS, 00168 Rome, Italy
3 UOC Chirurgia Vertebrale, Fondazione Policlinico Universitario A. Gemelli IRCCS, 00168 Rome, Italy
4 Department of Aging, Neurological, Orthopaedic and Head-Neck Sciences, Fondazione Policlinico Universitario A. Gemelli IRCCS, 00168 Rome, Italy
5 Presiding Officer of Geriatric Care Promotion and Development Centre (C.E.P.S.A.G), Università Cattolica del Sacro Cuore, 00168 Rome, Italy
6 Unit of Geriatrics, Department of Medicine, Campus Bio-Medico University of Rome, Via Álvaro del Portillo 200, 00128 Rome, Italy
* Correspondence: silvia.giovannini@unicatt.it; Tel.: +39-0630154341

Abstract: A fall is an event where a person unintentionally and traumatically finds themselves on the floor or a lower level. Falls are very common, especially in the older adult population. One in four people falls at least once a year after age 65. Because of falls, there can be injuries, whereby there can be an impairment of health status. Fractures, reduced mobility, disability, and the need for institutionalization are potential consequences after falls. In older adult patients, especially frail ones, these types of complications are more common. There are several risk factors for falls. Falls generally result from a combination of factors operating simultaneously. Sarcopenia, cognitive impairment, or poly-pharmacotherapy are just a few examples of risk factors that are common in the older people. Through careful clinical evaluation, it is possible to identify risk factors and conditions predisposing to falls. In some cases, it is possible to correct these factors. Several types of treatment are available to restore the health status before the fall and prevent subsequent falls. Using multi-component interventions, the risk of falls can be effectively reduced. Aware that this review will not be exhaustive of such a broad topic, the purpose of this narrative review is to summarize relevant and recent evidence in the current literature to encapsulate fall-related risk factors, risk identification, fall prevention, and management, including various rehabilitation techniques. This article conforms to the Scale for Assessment of Narrative Review Articles (SANRA) guidelines.

Keywords: falls; rehabilitation; older adults; risk factors; personalized medicine

Citation: Giovannini, S.; Brau, F.; Galluzzo, V.; Santagada, D.A.; Loreti, C.; Biscotti, L.; Laudisio, A.; Zuccalà, G.; Bernabei, R. Falls among Older Adults: Screening, Identification, Rehabilitation, and Management. *Appl. Sci.* **2022**, *12*, 7934. https://doi.org/10.3390/app12157934

Academic Editor: Hanatsu Nagano

Received: 23 June 2022
Accepted: 6 August 2022
Published: 8 August 2022

1. Introduction

Falls are associated with negative outcomes in all ages, but the consequences of this phenomenon on older adults could be worse [1]. First, a fall can cause a reduction in an older adult functionality, even to the point of losing independence. Second, the consequences of a fall are not limited to functional performance but affect multiple aspects of life, including psychological and cognitive domains. A fall is defined as when a person drops inadvertently on the floor or other lower level [2]. A fall can be identified as deriving from a combination of predisposing and precipitating factors [3–6]. Falls could hide an acute illness, especially in older adults, when the common symptoms of an infection or a cardiac problem are blurred. To maintain a normal gait and avoid falls, it is necessary to coordinate between several functions: vision, hearing, proprioception, intact neural networks, adequate muscle tone, and mental concentration [7]. Aging is associated with worsening of

gait, due to the deterioration of the functions mentioned above, but also due to other aging-related phenomena, such as sarcopenia, slower pace, and shorter step. These age-related factors explain why older people are more exposed to falls [8,9]. When an individual falls, especially an older adult, psychological changes may occur, which we will call "fear of falling", it can lead to loss of confidence, expressed by increased fear of performing physical activities or even fear of leaving the house [10]. Falls represent an actual issue in the worldwide community. It is a complex medical problem and several strategies can be applied to prevent and manage falls and related injuries. The optimal management involves a multidisciplinary team made up of physicians, physical and occupational therapists, and caregivers [11].

The purpose of this review is to provide the reader with a comprehensive cross-sectional view on the topic and to summarize the state of the art on falls in older adults in the current literature, with a focus on epidemiology, risk factors, assessment, prevention, and a specific focus on rehabilitation techniques.

2. Methods

2.1. Data Sources and Search Strategy

We conducted our review based on studies published in PubMed (MEDLINE), Web of Science, Scopus, and Google Scholar. Our research was conducted between 1 November 2021 and 30 April 2022. The following terms were used for the literature search: "Falls", "Older adults", "Management", and "Rehabilitation".

2.2. Study Selection

2.2.1. Inclusion Criteria

In our narrative review, we identified as inclusion criteria: (1) studies investigating older adults with a history of falls or with fall-related risk factors, concerning clinical and instrumental assessment tools of older adults with a history of falls or at risk of falls, or concerning the management of falls in older adults; (2) studies with patients of any race and any gender with at least 65 years of age, regardless of publication date; and (3) studies with both hospitalized and community-dwelling participants.

2.2.2. Exclusion Criteria

Editorials, case reports, letters to the editor, animal studies, and conference abstracts were excluded.

2.2.3. Quality Assessment

This review conforms to the Scale for Assessment of Narrative Review Articles (SANRA) guidelines [12].

3. Epidemiology

Falls are mostly a geriatric issue [13]. Almost 25% of people aged 65 and over living in the U.S. report a fall in the last 12 months [14]. The incidence of falls among older adults in nursing homes increases to 50% [15].

The majority of falls do not cause injures. However, one third of older people need a visit in the emergency department following a fall-related injury. Bone fractures and head trauma require hospitalization more than other injuries [16]. It seems that women are at higher risk of having fall-related injuries than men [17]. In total, 87% of all fractures among older people derives from falls [18]. This is particularly due to the higher incidence of osteoporosis in these ages. Among nursing home residents, the incidence of injuries and fractures is twice that compared with the community-dwelling population [19]. Major injuries (fractures and head trauma) occur in falls associated with loss of consciousness, while soft damages are seen after no syncopal falls [20].

Among older adults, falls represent the first cause for injuries that require hospitalization [21]. Falls represent the second leading cause of unintentional injury deaths [2]. Moderate to severe injuries lead to loss of independence in the majority of very old patients. Other consequences of falls, even in patients without injuries, are the functional decline and the fear of falling. These clinical conditions are often associated with higher risk of institutionalization.

The economic impact of falls is likely to increase worldwide due to an aging population. Currently, medical costs in the U.S. for nonfatal falls are USD 50 billion per year [22] and this amount mainly derives from fall-related major injuries. However, the social costs related to the assistance of dependent patients after falls are not quantifiable. In 2015, the financial impact of fatal falls was estimated as USD 754 million [23]. It is necessary to remark that fatal falls derive especially from the consequences of major injuries. Prevention with multifactorial interventions on nursing home residents should be adopted to reduce the incidence of falls and their related costs [24].

4. Risk Factors

Falls derive from a combination of different factors [25,26]. As reported above, aging is associated with an increased risk of falls. This is due to the age-related changes that include cognitive problems, incontinence, loss of muscle mass and function, balance impairment, slower reaction times, and worsening of vision [27]. The majority of risk factors progressively worsen with aging, but some of them can be modified with multiple interventions. Polypharmacy and the use of psychoactive drugs have strong association with falling [28]. Deprescribing medications represent a challenge for physicians that approach geriatric patients. The choice of adding medications in this category of patients should be carried out with caution. Particularly, it is necessary to emphasize a correct management of pain [29,30]. Polyarthritis is the major cause of pain in older adults and is associated with difficulties while doing activities. Both polyarthritis and pain can alter gait [31]. It seems that the risk of falling augments in proportion to the number of interrupted daily activities [32]. Previous falls and fear of falling are predictors of falling [17]. Moreover, recent hospitalization makes an older patient more vulnerable to a new fall [23]. A careful evaluation of fall risk is indicated in patients with Parkinson's disease [33]. People affected by postural hypotension, dizziness, and depression tend to be at higher risk of falling [34]. Assessment of blood pressure is suggested for patients who have been taking antihypertensives for many years and manifest signs of postural hypotension. In the early stages, mood disorders can be confused with cognitive problems. It is important to remark that depression needs to be evaluated also in older adult ages. The Stopping Elderly Accidents, Deaths, and Injuries (STEADI) algorithm was made to identify fall risk among older people at an early stage or, eventually, after a fall. This algorithm may discriminate if a patient is at risk for falling or not; after that, it suggests how to intervene and the timing of follow-up visit [35].

Unsafe environments represent a further risk for those who have visual and gait problems. Some dangers are steps, irregular or slippery surfaces, home obstacles, inadequate footwear, and poor lighting. Fall is probably the result of the interaction between intrinsic factors, such as age-related changes, medications, or clinical conditions, and extrinsic factors (unsafe environments) [26] (Table 1).

Frail patients are at high risk of falling while performing elementary actions, i.e., when they change position in a safe environment or during mobilization. Differently, older persons with a good health condition are more susceptible to falling while performing multiple actions, such as talking during a rapid walk or going to bathroom during the night when the lighting is down. Then, the combination of intrinsic and extrinsic factors manifests itself in different ways depending on the patient's health status. Although gait and balance problems represent the main causes of falling [36], it is also notable that some chronic conditions interact with specific environmental situation in the onset of falls, as reported in Figure 1.

Table 1. The combination of intrinsic factors (chronic conditions and precipitating factors) and extrinsic factors in the onset of falls.

Intrinsic Factors		Extrinsic Factors
Chronic Conditions	**Precipitating Factors**	
Gait/balance disorders	Weakness	Poor lighting
Sarcopenia	Confusion	Inadequate footwear
Polyarthritis	Delirium	Slippery surfaces
Dizziness	Pain	Irregular surfaces
Postural hypotension	Dehydration	Steps
Dementia	Infections	Home obstacles
Previous stroke	Arrhythmias	
Visual impairment (glaucoma, cataract, macular degeneration)	Acute metabolic disorders (Hyper/hyponatremia, hyper/hypoglycemia, dysthyroidism)	
Movement disorders (Parkinson's disease, dyskinesia, etc.)	Anemia	
Depression		
Positive fall history		
Fear of falling		
Use of psychoactive drugs		
Use of diuretics		
Use of antiarrhythmic		
Low Vitamin D levels		

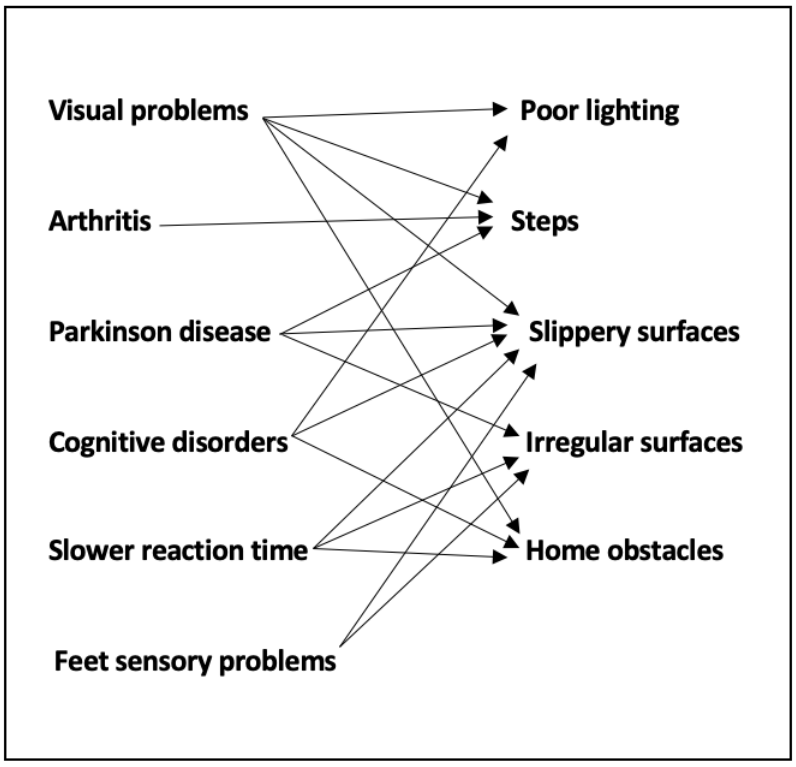

Figure 1. Examples of interactions between some intrinsic factors and the main extrinsic factors in the onset of falls.

Caregivers should pay attention in those dangerous situations that may potentially lead to an acute injury.

The physician's intervention needs to be applied when risk factors can be modified. Although cognitive disorders or other neurologic diseases are mostly irreversible factors for falls, a multidisciplinary approach based on the assessment of the other factors may improve balance and gait. At first, hearing aids and the correction of visual problems might ameliorate sensorial perception of the environment. Particularly, physical exercise may promote muscle strength and improve balance problems, with the purpose of increasing confidence while doing activities. Adequate management of pain and correct use of medications are fundamental to decrease the risk of falling.

5. Evaluation for Patients with Increased Fall Risk

Falling risk should be evaluated in all older adults and in every adult who has already fallen two or more times in the past year or has had a recent fall, reports any injury from a fall, has gait or balance disorders, or reports any difficulty in walking or balance [37].

5.1. Clinical History

Of great significance is the assessment of fall risk. It is valuable to gather the patient's history and identify risk factors. A history of falls is one of the most critical risk factors, as it increases the risk of future falls [38]. It is also fundamental to understand the context in which the fall occurred. The type of activity that was being performed before the fall, prodromal symptoms (dizziness, imbalance, and lightheadedness), when and how the fall occurred, whether there was any loss of consciousness, and whether there were any specific signs (e.g., tongue bite and sphincter release) that may indicate a clear underlying cause: this is a piece of very relevant information in the evaluation. It is also crucial to identify environmental factors that may have contributed to the fall, such as the surface on which one was walking, lighting, and objects that may have gotten in the way or caused slipping. Beyond context, there may be conditions that predispose to falling, as well as aging itself, for example, conditions such as Parkinson's disease, cognitive deficits or dementia, osteoarthritis, neuropathy or sensory or motor impairments, visual or hearing impairments, and use of inappropriate footwear. In addition, these conditions can affect the outcome of rehabilitation. Although already present before the fall, some comorbidities may only manifest after the fall. Not only certain conditions may predispose to falls, but also the use of certain drugs, such as neuroleptics and sedatives, antidepressants, antiepileptics, and antihypertensives, may contribute to the fall event. That is another reason why it is important to collect the pharmacological history. The use of substances, such as alcohol, can affect the control of movement and balance and, therefore, a fall event. Before beginning treatment, it is valuable to assess rehabilitation potential, any conditions that may delay treatment initiation, and the setting in which it will be provided. In this context, prior functional status, comorbidities, cognitive problems, and motivation may influence the outcome. A previously bedridden patient will likely have less potential than an individual who runs 30 min every day. Similarly, a patient with significant heart failure will likely have less resistance to exercise than someone without heart disease. In addition, it may be difficult for a patient to perform rehabilitative exercises when cognitive impairment is present. Evaluating cognitive status is fundamental before therapy begins. Another aspect is the patient's motivation for rehabilitation treatment. The patient with high motivation, for example, who aspires to recover to resume an activity they care about has better potential than an unmotivated patient. Finally, the economic condition can also be a determinant of the rehabilitation outcome.

5.2. Physical Examination and Tests

During the physical examination, a physician evaluates alterations in muscle function, such as weakness in the lower extremities. Many tests can assess physical performance; one of the most widely used is the Short Physical Performance Battery (SPPB). SPPB is a tool that

has been used to predict subsequent disability and worsening of mobility associated with injurious falls. It has recently been proposed as a screening tool for falls. This outpatient test has three rating scales (balance test, gait speed test, and chair stand test), each of which assigns a score from 0 to 4. The SPPB can assess several functional abilities, including balance, and can predict falls [39] and disability [40,41]. The presence of an SPPB score of <10 is independently associated with a history of falls [42–44] in community-dwelling older adults, with a sensitivity of 71% and a specificity of 78% [10,45].

Another frequently used test is the Timed Up & Go [46]. It consists of assessing the patient's ability to get up from a chair, remain balanced, travel a fixed distance (e.g., 3 m), and return while sitting in the chair. The ability to perform each command may already allow identification of a difficulty. The time taken by the patient to complete the test is compared with the average time of subjects with the same age range (e.g., 70–79). A recent study identified how, with a cut-off point of 13.9, the test's sensitivity is 92% and specificity 64% to discriminate between fallers and non-fallers [42] in community-dwelling older adults. A combination of SPPB and TUG tests would have a good predictive potential for falls. However, a recent meta-analysis indicates sensitivity of 70% and specificity of 49% [47].

The Performance-Oriented Mobility Assessment Tool (POMA) assesses walking and balance with 16 items. The tool allows assessment of autonomy in walking and the ability to maintain balance despite the intrusion of external stimuli (e.g., the subject is pushed). A POMA scale total score of <21 is associated with falls [1,48]. A cut-off point of 19 has a sensitivity of 68% and specificity of 88% to predict whether an individual will have two or more falls [49]. However, reliable cut-offs for predicting falls have not been identified [47]. However, the characteristics of these predictive tools are derived primarily from studies of specific cohorts and not from meta-analyses.

Although these instruments taken individually do not accurately screen for falls risk [47,50], a combination of at least two tests could be an effective screening strategy. One study found a correlation between patients with difficulty in divided attention and falls. Those who had a poor score on the walking while talking (WWT) test fell more frequently [51]. Physical examination of the lower limbs also includes assessment of physical alterations, such as joint deformities, calluses, amputations, and neurological alterations, such as decreased sensitivity or proprioception. A thorough general physical examination is crucial to rule out other causes of the fall. Sensory alterations in hearing or visual acuity may contribute to the fall. Visual and hearing tests are recommended. These alterations may be treated with hearing implants or lenses. Assessing blood pressure and heart rate is important, especially for the evaluation of orthostatic hypotension (OH). These vital parameters should be measured supine and at the implant after at least one to three minutes. Studies have investigated the possibility of delayed orthostatic hypotension, even several minutes after positioning in upright statics. This is because OH is positively correlated with the risk of falls [52]. For this reason, more thorough evaluations can measure pressure even at longer time intervals. The presence of a heart murmur may induce suspicion of valvulopathies, such as aortic stenosis, which is associated with syncope and falls. A suggestive finding is an indication to perform an echocardiogram. Currently, there are no diagnostic laboratory tests that are associated with the risk of falls. Some tests may induce suspicion about the cause of the fall: hemoglobin level, kidney function tests, and diabetes screening are good examples and tools to look for some of the most common causes of falls. It may also be useful to assay vitamin D to identify those who have low levels and are, therefore, at increased risk for sarcopenia and fractures [53,54]. Identified risk factors should be corrected as soon as possible. In any case, interventions should be planned to limit the effects of falling and prevent future events.

6. Rehabilitation and Management

Treatment must have multiple goals, such as eliminating modifiable risk factors, treating acute or chronic conditions that may have contributed to the fall, and preventing further

falls. Rehabilitation programs may include one or more types of interventions (Table 2). Physical exercise, cognitive behavioral therapy, occupational therapy, deprescription of psychoactive drugs, prescription of visual or hearing aids, and podiatric interventions are examples of single-intervention strategies. Multicomponent interventions (MCIs) are pivotal to manage falls in older people. MCIs are a personalized intervention, the aim of which is an individual global evaluation and reduction in the risk of falls and complications [55,56]. In older adult patients, the rehabilitation outcome is generally worse when compared with a younger subject. This is due to several reasons, such as a reduced functional, physical, and cognitive reserve, as well as the higher prevalence of multimorbidity and polypharmacotherapy [4,57]. In addition, it often takes longer to achieve the same outcome. However, several types of rehabilitation interventions can be undertaken after a fall in an older adult.

Table 2. Examples of key rehabilitation intervention modalities.

Component	Benefit
Physical Exercise	reduces the risk of falls, recover muscle strength, balance, improving aerobic capacity, improving motor control and flexibility, can be conducted in groups or home-based, improve several other conditions as well as global health
Technological devices	improve health, balance control, physical function, mobility, cognition, more detailed and personalized program, quality of life improvement, can potentially be performed as home exercise
Psychological and Cognitive	enhance adherence and motivation to exercise, improve balance, group activities-based are effective in reducing social isolation and loneliness, potentially reduce Fear of Falling

6.1. Physical Exercise

Physical exercise is one of the primary rehabilitation modalities after falls, as it consistently reduces the risk of falls [58]. Physical exercise programs can be conducted in groups or can be home-based. To have a consistent effect, it is necessary to perform the workout at least three hours per week [59]. The rehabilitation exercises aim to recover motor function that has been impaired due to a fall. In general, exercise is a safe activity even in older people. However, it is most important to assess any problematic medical condition before starting the treatment, in particular, any uncontrolled condition that may put the patient at risk, such as some heart diseases or diabetes. In addition, especially at the beginning of the rehabilitation program, it is essential to monitor the patient before, during, and after physical activity to assess for any worrisome changes in heart rate and blood pressure. Exercise can achieve several goals: recovery of muscle strength, balance, improving aerobic capacity, and improving motor control and flexibility (Table 3).

Table 3. Exercise interventions for the prevention of falls among older adults.

Type of Exercise Intervention	Description
Resistance training	3 sets of 8 repetitions, starting with a minimum intensity and progressing increase to the maximum, for 3 times a week. Patient's body can be used for resistance in exercises that simulate daily activities (such as the "sit to stand" exercise").
Endurance training	Walking with changes in pace and direction, stair climbing, tapis-roulant walking, stationary cycling.
Balance training	Tandem foot standing, multidirectional weight lifts, line walking, heel-toe walking, stepping practice, standing on one leg, weight transfer (from one leg to the other), Tai Chi exercises.
Multiple exercise interventions	Exercises based on balance, flexibility, reaction speed, coordination, resistance and endurance.

Sarcopenia is a well-known phenomenon in older people; it contributes to the worsening of neuromuscular function associated with age [9,60] and can be a potential limitation to the rehabilitation program. Exercises designed to improve muscle strength, both aerobic and endurance, and balance exercises improve stability. Some of these programs, referred to as functional exercises, use combinations to replicate everyday life activities [61]. In particular, strength and balance exercises were studied in the LiFE Study, from which the LiFE Program was created, as an alternative modality to traditional exercises for fall prevention [61]. A prerequisite of the LiFE program is the identification of selected and patient-tailored exercises that integrate with the patient's daily routine. LiFE program exercises are performed whenever the opportunity arises during the day, rather than at predetermined times during the week. It is still unclear whether one type of exercise is superior to another, so the choice is made on clinician decision and patient preference. Several studies show that using a multicomponent program (e.g., strength, aerobic, and balance exercises) is effective and has fewer adverse effects, compared with other types of exercise [61–66]. Indeed, evidence suggests that multimodal physical interventions, especially under supervision, appear to reduce the risk of falls and improve balance [67]. Resistance-based and multimodal exercises enhance physical performance in general [62]. In addition, resistance-based exercises improve several other conditions that may indirectly contribute to falls or complicate a fall, such as sarcopenia, osteoporosis, musculoskeletal health, and promotes maintenance of functional abilities and physical performance and a stable mood [68–71]. In contrast, other studies suggest that moderate- to high-intensity balance training plans substantially reduce falls compared with controls, even in patients with cognitive impairment or Parkinson's disease [59,72,73]. In addition, it is unclear whether acting with exercises that improve muscle strength and balance also have a protective effect concerning fall-related injuries, hospitalizations, or mortality [73–76]. Nutritional modifications, such as the supplementation of protein or vitamin D supplements, are synergistic with exercise, improving outcomes in terms of muscle strength, risk of sarcopenia, and frailty [76–80]. In addition, some studies seem to indicate long-term maintenance of the results obtained after the end of the active period of exercise [81,82]. Starting a rehabilitation program with physical exercise reduces the risk of falls in both institutionalized and noninstitutionalized patients [81,83]. Meditative movements are among the modalities investigated for a possible role in fall prevention. Tai Chi Chu'an (Tai Chi) and Yoga are two of the most famous and worldwide accessible forms of such physical activities. Tai Chi is a Chinese practice that blends the ancient philosophy of Yin-Yang with a combination of deep breathing techniques and slow, gentle movements, improving co-ordination, proprioception, and flexibility [84–87]. Tai Chi also appears to be a protective activity against falls. However, it is unclear whether practicing this activity changes the time to first fall [63]. Yoga is a well-known type of intervention that appears to improve balance in those with balance deficits. Yoga appears to improve motor function, balance, and walking [84]. This type of activity is light-hearted and, therefore, may be better tolerated and accepted than conventional techniques. In addition, this type of activity is frequently associated with meditative spiritual activities that can be a vehicle of motivation for the patient. This modality seems to reduce fall number, although some studies indicate that the benefit is not maintained beyond six months after the end of the activity [88,89]. It is still unclear if Yoga can effectively reduce short- or long-term falling risk.

6.2. Technology

In recent years, the importance of technology in fall rehabilitation and prevention has been increasingly studied, even in older individuals. This is relevant because, in recent years, great importance has been given to interactive technological physical and physical–cognitive training programs, which have proven effective in reducing the risk of falls [90–92]. With technology, it is possible to make precise measurements of certain parameters that are expressions of complex functions, such as balance. It is possible, through current technologies, to have a precise and accurate measurement of movement

and rapid analysis of signals, which would not otherwise be possible with conventional methods [93].

A lower limb rehabilitation robot (Hunova® Movendo Technology Srl, Genova, Italy) was used to quantify and treat deficit in balance and proprioception related to post-COVID-19 syndrome and for physical treatment [94]; this is particularly relevant because of the impact of rehabilitation on the long-term effect of severe acute respiratory syndrome coronavirus [95]. Technological motor rehabilitation is a very interesting field and can suggest a choice for the most appropriate and personalized treatment for each patient. Two very recent randomized controlled trials intend to investigate the relationship between motor and cognitive performance in fragile patients who have undergone a technological physical rehabilitation by a robotic force platform (Hunova® Movendo Technology Srl, Genova, Italy) (ClinicalTrials.gov Identifier: NCT05280587; NCT05459584) [96,97].

In addition, it is possible to make a fall prevention or rehabilitation program targeted to the individual's needs and deficits. In addition, more generally, the term assistive technology refers to any device or system that enables an individual to perform an activity that they would otherwise be unable to do [98]. This type of technology makes it possible to improve life both at home and in nursing homes for older adults. For example, installing devices such as nonslip bath mats, stair handrails, or grab rails in bathrooms can improve home safety. Another intervention could be an improvement on lighting and edging for outside steps [99]. The use of this technology seems to reduce the risk of falls in older adults living in their own homes or nursing homes [100]. A growing number of studies also point to a possible role for gaming technology and virtual reality (VR). Video games or exergames, although they have been associated with negative events over the years, have important potential use in the medical field. Exergames created specifically for rehabilitative purposes have shown that they can improve health, balance control [101,102], physical function [103], mobility [104,105], and cognition [106] in older adults. In addition, this type of modality can help form a fun and motivating environment to perform therapy. Visual biofeedback and force plate systems, for example, are used to improve balance and mobility [107]. One study shows that the use of exercises based on video games can have significant effects over conventional physical exercises, even in patients with more physical difficulties [108]. In addition, it appears that they may play a role in improving not only physical, but also psychological health [109]. A recent protocol involving the use of exergames is being studied as a treatment for fear of falling [110]. One major problem associated with this type of modality is the acceptability of the proposed activity, which is generally not high among older people and the cost of the respective technologies. A potential advantage is that, following proper education, exergames can potentially be performed as home exercises. In recent years, wearable technologies have been developed, such as smartphones, smartwatches, and wristbands. The majority of the older population uses a smartphone, which makes this resource easily accessible [111]. Many of these technologies are used with specific software to promote health, exercise, and healthy aging. These devices are often equipped with a variety of sensors, such as accelerometer, gyroscope, heart rate monitor, and GPS that can be used for numerous functions. Tracking physical activity, sedentariness [112], and fall detection are some examples of such functions. It seems that the use of devices is a cost-effective and accurate solution for fall detection and calling for help [113]. To this end, projects such as MOBILISE-D have emerged in recent years to integrate data from everyday life with relevant clinical information [114]. However, it is critical to have good adherence to achieve the desired outcome. Therefore, it seems to be of some importance to integrate the physical approach with the psychological one.

6.3. Psychological and Cognitive Components

Cognitive and psychological aspects, such as motivation, are also fundamental in rehabilitation, as they can influence the outcome. It has been seen that most older adults who begin an exercise program stop within six months [115]. During this period the patient will likely change their involvement in the activity. This change may depend on several factors:

attitude, initial expectations, and whether these are achieved with exercise [116,117]. There is now evidence that the use of cognitive and social strategies improves patient attitude and adherence to the exercise program [118]. Social support can occur through verbal support and the involvement of support figures or family members. The theory of planned behavior has been used over the years to assess the patient's attitude toward exercise and the instructor's attitude toward the patient's participation in the program [119,120]. In recent years, efforts have been made to develop behavioral techniques to enhance adherence and motivation to exercise in older adult patients [121]. In addition, group activities play a possible role. Performing the planned rehabilitation in a group can be motivating in many ways. Often, members of a rehabilitation group can encourage each other and be a source of motivation to perform the exercise, thus augmenting treatment adherence [121]. Furthermore, group activities are effective in reducing social isolation and loneliness [122]. The use of group work in the program can be very beneficial. Social meetings, exercise, and motivational meetings are examples of activities that can be performed in groups and improve adherence to the program [123–125]. Moreover, there is often discussion and sharing of information that helps enhance positive behavior concerning the proposed program. Group activities might be a good way to engage patients with cognitive impairment in the programs as well [126]. Some studies have investigated the possible motivational role of financial incentives. This strategy would appear to be cost-effective and improve adherence to the exercise program [127]. Another important aspect is the fear of falling. This psychological condition can significantly impair physical, functional, and social recovery after a fall. Moreover, it seems that the fear of falling is itself a risk factor for a subsequent fall [128]. Addressing this seems to have at least an initial protective effect on falls [88,129]. However, it is unclear whether exercise, alone or integrated with educational interventions, has a lasting long-term effect [129]. Currently, few studies have used multimodal interventions including motivational strategies [68,129,130]. At present, there is limited evidence on psychological interventions and fall risk reduction. It would appear that some types of interventions (e.g., cognitive behavioral therapy) may have a role in reducing fall risk and improving balance in the short–medium term [131]. However, some factors related to the program instructor are also important and can influence patient participation [132]. In general, adherence to the program is influenced by the presence of supervision [133–135]. Finally, it would appear that subjects with better cognitive abilities have better adherence to the program [135].

6.4. Other Interventions

The use of podiatric devices appears to reduce the number of falls, compared with those who do not use them. However, it does not appear to affect the risk of falls [136]. In addition, the use of these types of orthoses appears to improve balance, strength, and ankle flexibility. Another approach is home safety interventions, which are effective when provided by an occupational therapist. These interventions included a comprehensive assessment process complete with hazard identification, support for adaptations, and modifications by involving the older person in prioritization. A key to effectiveness is the subsequent behavioral change of the individual. Successful interventions have had an impact on outdoor and indoor falls. Finally, gradual discontinuation of psychoactive medications may result in a reduction in falls and fall risk [38,136,137]. To do this, it is important for the clinician, particularly the geriatrician, to be vigilant in periodically reviewing drug therapy and deprescribing when possible.

7. Discussion

Falls represent a frequent event, especially among older adults, and can be a major determinant of their loss of independence. Falls are the leading cause of traumatic death in aging. They also constitute a significant increase in direct and social costs for the health system and a major care burden for families and caregivers. Moreover, this phenomenon is likely to increase in future decades. For these reasons, it is necessary to early identify

specific risk factors and choose the more appropriate interventions to reduce their impact. Physicians could indicate single intervention, such as physical exercise, cognitive behavioral therapy, occupational therapy, reduction in pharmacological therapies of psychoactive medications—although some drugs have a protective function [138], prescription of visual or hearing aids, and podiatric interventions, which can have a role in preventing falls. However, MCIs are the most effective interventions to reduce fall risk, even in a high-risk population. MCIs are the basis of the management of falls in older adults and require an accurate assessment of risk factors, clinical history, drug therapy, functional, physical, and cognitive status. The role of the geriatrician and of a comprehensive assessment is crucial. Establishing a multidisciplinary screening/intervention program of risk factors, a home risk assessment, and an exercise program combining different categories of muscle strengthening and balance exercises seems to be a comprehensive and advisable approach. Although many intervention tools are available, traditional, innovative, and technological, and the specialist could indicate the more appropriate interventions for each individual to personalize and maximize the effect of the treatment. For example, it appears that multimodal approaches in various settings are superior to the use of a single intervention technique. However, data about the use of various combined (physical–psycho–cognitive–technological) modalities are scarce. One of the future challenges will be to make innovative approaches, such as technological and psychological interventions, which are often used by older people, more familiar. Future research should make an effort to study more and more integrated approaches. Fall should be considered as a global multidimensional event in older adults and not only a deficit related to a single aspect, whether physical, psychological, or cognitive.

8. Conclusions

This review aims to propose an evidence-based overview on the major clinical aspects of falls in older adults. In recent years, the ability to treat falls has rapidly evolved. In particular, a plethora of studies have investigated various interventions to manage falls. This has generated a huge amount of information, which is very scattered and difficult to summarize in a single paper. Therefore, this paper tried to summarize the key elements and recent innovations to evaluate, treat, and manage this event. This topic is enormous, so that a white book would be needed to fulfill this topic exhaustively. However, further studies should be conducted in the future to improve knowledge and to be applied in medical practice. This overview on the current scientific evidence can be a starting point for further clinical studies and reviews on the specific topics.

Author Contributions: Conceptualization, S.G.; methodology: S.G., F.B. and V.G.; resources, D.A.S., C.L., L.B., A.L. and G.Z.; data curation, S.G. and F.B.; writing—original draft preparation, S.G., F.B. and V.G.; writing—review and editing, S.G. and G.Z.; visualization, L.B. and R.B.; supervision, R.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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