

The Handbook of Traumatic Injury Prevention

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*IAP Press
(In review, expected 2013)*

CHAPTER __ 2 __

*The Stay On Your Feet (SOYF) NSW Program**

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* This case study is a completely new version of Stay On Your Feet (SOYF) by Shirley Thomson that appeared in Volpe, R. and Lewko, J. (2006) Preventing Neurotrauma: A Casebook of Evidenced Based Practices.

1. Background

Senior falls are a prevalent problem with significant health and economic repercussions. Falls are the most common reason for unintentional injury among people over 60 years of age (Kempton et al., 2000; Weir and Culmer, 2004). Although many older adults perceive their risk of falling as low (Hughes et al., 2008), an annual approximation of the prevalence of elderly falls indicates that falls occur in 28-35% of older adults living in the community (Yoshida, 2007) and 50% of older adults living in residential care facilities or nursing homes (McClure et al., 2005). Half of those who fall will continue to fall repeatedly (Tinetti, 2003). The prevalence of falling also increases dramatically with age, and 80% of individuals who are 80 years or older will experience a fall each year (NICE, 2004). Furthermore, it is important to consider that the incidence of elderly falls is predicted to increase with the increasing number of elderly people in both the developed and developing world (Kannus et al., 2005).

Though falling has sometimes been defined upon a continuum, from trips or stumbles to loss of balance, the definition for a fall has recently been accepted as “an unexpected event in which the participant comes to rest on the ground, floor, or lower level” (Lamb et al., 2005, p. 1619). Falls may or may not result in injury. Although falls occur in people of all ages, falls have special significance for older people, compared to younger people, due to their higher incidence rate, increased susceptibility to injury, and lower recovery rates. Falls amongst older adults is a significant source of morbidity (Sattin, 1992) and mortality (Yoshida, 2007). While most falls do not result in injury, 20% require medical attention, and 5-10% of falls cause other serious injuries such as major head trauma, dislocation, lacerations (Sattin et al., 1990, Kannus et al., 2005; Gillespie et al., 2004; Rubenstein and Josephson, 2002). Even higher reports of major injury exist for certain demographics, especially amongst women aged 75 years or older who live alone and have fallen previously (Kannus et al., 2005; Hahn et al., 1998). In addition, longstanding pain, functional impairment, immobility and debilitation often accompany falls (Kannus et al., 2005).

In addition to the physical maladies associated with falls, the emotional and psychological implications are also devastating. Falls can result in depression and anxiety due to serious disability, curtailment of activities, social withdrawal, heightened fear of falling, and the loss of confidence, mobility and independence (Cumming et al., 2000; Salkeld et al., 2000; Gates et al 2008). These findings have led to the use of the adage “falls can break self-confidence as well as bones” (Kempton et al., 1998, p.5). A consequence of falling is that many older people become reluctant to leave their homes and their inactivity increases the likelihood of their falling in the future (Kempton et al., 1998). These concerns are not unsubstantiated; falls by older adults is the most salient

cause of restricted activity among older adults (Rubenstein, 2006) and are often connected to a range of complications that are precursors of an individuals' loss of independence and institutionalization in about 50 percent of individuals admitted to hospital (Sattin et al., 1990).

The financial implication of falls is also enormous - one of the most expensive causes of admission to hospital (Garner et al., 1996). In 2006 the National Center for Injury Prevention and Control estimated the cost of fall injuries in the United States estimated that falls was costing over \$19 billion nationally per year (Stevens et al., 2006). In one study, the total annual healthcare cost of a patient with injurious falls were \$19 440 higher (in 1996 U.S. dollars) than for patients who had not fallen (Rizzo et al., 1998). An aging population (Barnett et al., 2004) and escalating health costs will only increase this already substantial figure (Beard et al., 2006).

Elderly falls are a prime target for injury prevention. The prevalence and severity of this problem emphasizes the necessity to develop comprehensive preventative strategies to reduce the health and economic burden (Weir and Culmer, 2004). Despite a considerable body of literature on falls by 1990, Askham et al. (1990) complained that the many different approaches have made it difficult to choose a strategy for preventing elderly falls. This review concluded that most existing studies were inadequate to evaluate community programs for fall prevention. Similarly, Lilley et al. (1995), in their review of the literature, pointed out that despite a plethora of research information in falls, "*prevention of falls is a neglected area of research*" (p.354). The Stay on Your Feet program was originally planned to address the need for an evaluated and effective falls prevention strategy and has become a renowned and enduring program in elderly falls.

1.1. The Stay On Your Feet Program

The Stay on Your Feet (SOYF) program was developed in New South Wales, Australia, in 1992 in response to the need for an evaluated fall prevention program based on published epidemiological evidence (Kempton et al., 1998). The aim of this program was to decrease the number and severity of falls experienced by people over 60 years of age through a multi-strategic, population-based prevention approach where success could be measured (Garner et al., 1996). SOYF is a community-level intervention operating through community mobilization in order to reduce injury. This program targeted individuals who were living in the community, i.e. living in accommodation that they control (not in institutional settings) (Kempton et al., 1998). A community intervention was thought to be more effective than targeting high-risk subgroups because the incidence of falls and related injury is substantial among otherwise healthy older people, and most fall-related risk factors are relatively common (McClure et al., 2010). The principles underpinning the Stay on Your Feet program stem from the Ottawa Charter for Health Promotion (WHO, 1986) and the Jakarta Declaration for Health promotion (WHO, 1997), which declares that health promotion should develop personal skills, create supportive environments conducive to health, strengthen community action for health, re-orient health services towards health promotion and disease prevention, and build public policy directed towards achieving these aims (Powell et al., 2000).

The initial program was implemented from 1992-1996 on the North Coast of New South Wales (NSW), Australia. This area was strategically chosen because the proportion and growth rate of the older population exceeds the Australian national average. The population of older adults on the North Coast includes 90 000 (or 21% of the entire population) non-institutionalized, older people who aged 60 years and over (Sladden, 1993; Garner et al., 1996; Hahn et al., 1996). The rate of falling among older North Coast's residents is high and 2 in 9 individuals fall each year (approximately 20 000 individuals) (Garner et al., 1996). The initial evaluation of 2 000 older adults from the intervention region was compared to 1 600 older adults living on the Sunshine Coast, Queensland, where there were no existing fall prevention activities (van Beurden et al., 1998). The regions were otherwise similar from a demographic and geographic standpoint. The evaluation of SOYF demonstrated a significant 20% reduction rate of falls-related hospital admissions (van Beurden et al., 1998). The reported success of SOYF has resulted in wide replication and adaptation of the Stay on Your Feet in other states of Australia and internationally (Beard et al., 2006).

1.2 Program Objectives

The aim of the Stay on Your Feet program was to reduce falls and subsequent injury among older persons (60 years and over) in the general, non-institutionalized, community (Hahn et al., 1996; Kempton et al., 1998). SOYF planned to develop a multi-strategic prevention approach that addressed the lifestyle and medical causes of elderly falls and evaluate the cost-effectiveness, sustainability, and outcome of the program. This process involved a number of stages, including (van Beurden et al., 1998; Kempton et al., 1998):

- A literature review and community consultation to ascertain the extent of knowledge on falls prevention and strategies (in 1992)
- Analysis of health data regarding North Coast fall demographics and determining a baseline of the levels of falls risk factors on the North Coast
- An assessment of community needs through focus group discussions
- An overview of current falls prevention policy and practice in North Coast local government
- Inclusion of specific principles in relation to health promotion with older people as identified in the Ottawa Charter for Health Promotion
- Determining delivery methods for interventions that are sustainable
- Developing a best practice model for community-based falls interventions that is cost-effective and sustainable
- Undertaking an evaluation of best practice strategies by using a pre-/post-intervention repeated measure design with comparison to national, state and local falls-related data
- Refining the model based on research outcomes
- Sharing findings

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2. Resources

The total cost of the four-year Stay on Your Feet program (in Australian dollars) was \$600 000 including evaluation (Kempton et al., 2000)¹. According to the Interbank rate, the cost of SOYF in Australian dollars equalled \$406 800 American dollars on January 1st 1994 (Ganz and Wu, 2007). Using the inflation calculator at the Bureau of Labor Statistics website (www.bls.gov), this equals \$594,792.66 in 2010 US dollars.

This calculation of ‘total cost’ does not reflect all the costs associated with the program including the contributory costs incurred by community networks such as government agencies, health promotion agencies, medical organizations and non-government organizations focused on seniors. For example, the Community Health Education Groups (CHEGS), a non-profit, incorporated organization, received ongoing support and training from health promotion workers (Kempton et al., 1998). CHEGS took a community development approach by recruiting and training local seniors to run classes on fall prevention, recovering costs of class leaders by charging participants a fee. Further, the reported cost of SOYF does not include the time of clinicians (GPs), community health staff, and volunteers (Beard et al., 2006). According to Beard et al. (2006), “it was not possible to estimate a number of costs borne by the community arising from the program. Neither the cost of travel to classes nor the costs of home modification were recorded” (p. 744). This implies that the cost of running SOYF is greater than was reported.

On the other hand, innovative schemes proposed in the original implementation of SOYF created savings that (likely) would not be present in future program replications. For example, awareness-raising partnerships were made with commercial networks to decrease distribution costs (Kempton et al., 1998). In one endeavour, SOYF proposed putting fall prevention messages on 316,000 milk cartons. This was not only an effective marketing mechanism but also resulted in the dairy company absorbing the distribution cost. Replications of SOYF may have to subsidize distribution and other costs that were avoided in the initial implementation.

Funding for SOYF was obtained from the NSW Health Department and funding for the evaluation of SOYF was obtained from the National Health and Medical Research Council. Table 1, below, shows the monetary input of running SOYF. From the outset, evaluating SOYF was seen as an integral aim of the program. The evaluation cost \$145 000, \$137 000 of which was received from external funding (Table 1).

Table 1: Cost of the Stay on Your Feet Program (1992-1997)²

	1992/93	1993/94	1994/95	1995/96	1996/97
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¹ More accurately, the total cost of SOYF is \$678 703 (see Table 1).

² The evaluated implementation phase occurred from 1992-1996; however, 1996-1997 is included in this table because the evaluation and program was ongoing (personal communication with Eric van Beurden).

	1992/93	1993/94	1994/95	1995/96	1996/97
Salaries/wages	\$79 076	\$38 229	\$62 222	\$44 000	\$18 625
Goods/services	\$87 801	\$53 500	\$55 500	\$86 000	\$8 750
Evaluation *external grants		\$50 000*	\$8 000	\$32 000*	\$55 000*
TOTAL	\$166 877	\$141 729	\$125 722	\$162 000	\$82 375

Source: Kempton et al. (1998)

3. Implementation

3.1 Overview

SOYF planned to reduce elderly falls by addressing eight recognized lifestyle and medical causes for falling. These factors are: insufficient physical activity; inadequate management of medications (especially when multiple drug are used); poor and deteriorating vision; unsafe footwear; an underlying physical condition; muscle weakness; poor balance and gait; and home and public environmental hazards (Kempton et al., 1998; Tinetti, 2003; van Beurden, 1998).

Mindful of the salient risk factors, SOYF used an umbrella model that was designed to allow for a wide-range of strategies. Five co-occurring strategies were integrated to ameliorate the risk of falling using different mechanisms. The program aimed to: 1) raise awareness about the problem of falls and disseminate information on falls prevention, 2) increase community education, 3) reduce home hazards, 4) develop partnerships with health professionals, and 5) develop falls prevention policies (Hahn et al., 1996; Kempton et al., 1998). These major strategies were phased in over the life of the program, each encompassing numerous activities (as described below).

3.2 SOYF Individual Strategies

3.2.1. Awareness Raising

Many older adults believe that falls are an unpreventable aspect of the aging process. Raising awareness amongst the target population was therefore undertaken in the earliest phase of the program to counter this view. The awareness campaign, which was also important in creating a SOYF brand identity, had two key messages: 1) falls are significant health issues, and 2) falls are preventable (Kempton et al., 1998). This information was distributed through media outlets, including television, radio, newspapers, milk cartons, calendars, and fridge magnets (Kempton et al., 1998).

Media advertisement and the distribution of resources was the main method of raising awareness. For example, on television, a series of 15-second community service messages that “life is better without a fall” were telecasted throughout 1993. In addition, a set of six community-service radio dialogues about fall-prevention measures were developed and broadcasted on community radio networks (Kempton et al., 1998). Media strategies also informed the public about falls prevention activities through print outlets.

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In addition the local radio stations conducted interviews whereby community educators discussed fall prevention and the Stay on Your Feet programs. Local newspapers also publicized SOYF's activities. Another interesting venture was the organization of falls prevention expositions in several major towns and smaller communities.

Specialty products carrying falls prevention messages were distributed broadly to raise awareness. For example, a calendar was produced for each of the first three years of the program and distributed free of charge through pharmacies, general practitioners and community health and education networks. A total of 47 000 calendars were distributed with positive images of older people, SOYF cartoons, and falls prevention messages (Kempton et al., 1998). A further 316 000 milk cartons carried falls prevention messages for three months in 1993 (Kempton et al., 1998).

Once the target group had been made aware that falls were preventable, the program began to provide clear, concise information about measures to prevent falls. Information dissemination activities involved the community in many ways. One initiative was providing a three-year action plan to health workers and service providers within five health districts, as well as to government and non-government agencies. In 1993, Stay on Your Feet also distributed 24 000 books on falling prevention to older people throughout the North Coast. Another book, published in 1994, distributed 30 000 copies by 1996.

SOYF also trained advisors in diverse areas who were responsible for disseminating information to the target group. Fall prevention advisors were aged over 50 (mostly over 60) and gave interviews about their work and assisted with SOYF efforts (e.g. by staffing expos and stalls). The falls prevention advisers were able to reach approximately 3 000 older people through talks and expositions at clubs and other venues (Kempton et al., 1998). Another initiative was the training and employment of nine Medication Workshop Leaders who, on a part-time basis, facilitated discussion groups on safe medication use. Approximately 500 older adults attended these workshop sessions. Furthermore, fifteen Home Safety Advisors were trained to give presentations on falls prevention strategies and home safety products.

3.2.2. Community Education

As well as the face-to-face instruction given by Falls Prevention Advisers, Medication Workshop Leaders, and Home Safety Advisors, the North Coast Community Health Education Groups (CHEGS) took several measures to orchestrate education at the community level (Kempton et al., 1998). SOYF used both health professionals and trained older people as community educators (Kempton et al., 1998). Fall prevention days were scheduled to educate the community about unsafe footwear, gentle exercise and other fall prevention techniques. A 'pill spill' campaign was a popular initiative that encouraged older people to dispose of outdated medication.

Workshops that focused on various aspects of falls prevention were also popular. For example, 950 older adults attended a nine-week gentle exercise workshop where they improved their balance and leg strength throughout the workshop. An interesting and

well-received venture was the ‘walking on air workshop’. This program focused upon the care of feet by incorporating a massage, foot/ankle exercises and a discussion about safe and unsafe footwear. Other community education efforts included belly-dancing classes and walking stick decoration classes.

3.2.3. Home Safety Measures

A home safety checklist that provided a list of home modifications and safety products was developed. A 1993 seed grant enabled a community nurse and two students to trial a home safety checklist (Kempton et al., 1998). Another initiative, the ‘Home Safety Month’, saw high participation, with 90% of the 48 hardware stores and 100% of the 19 tile stores situated in the area participating in this project (Kempton et al., 1998). Furthermore, three quarters of the stores believed that the intervention was beneficial to their customers and staff and half of the stores were later found to be stocking falls safety products (Kempton et al., 1998).

3.2.4. Health Professionals

Both general practitioners (GPs) and community health nurses (CHNs) are key to a falls prevention strategy (Barnett et al., 2003; Kempton et al., 1998). This is partly because GPs and CHNs are viewed by the target group as an important source of health information (Barnett et al., 2003). As part of a SOYF initiative, a North Coast GP developed educational tools and outreach education to other GPs throughout the intervention region. This package included educational materials that addressed medications, patient falls-risk assessment, lack of physical activity, foot problems, vision, and home hazards. In addition, information evenings were organized in conjunction with their Divisions of General Practice and the Certified Medical Education (CME) program (Kempton et al., 1998). One-hundred GPs attended these information evenings, each receiving Certified Medical Education (CME) points.

Another venture was the development of a referral pad by which community health nurses could refer at-risk older clients to a range of other services such as occupational therapists, podiatrists, optometrists, gentle exercise classes, and general practitioners. This referral pad provided a well-researched response with great potential to reduce falls and related injury.

3.2.5. Policy Development

Policy development involved working inter-sectorally with government and non-government organizations, including the Department of Housing and local councils (Kempton et al., 1998). Policy initiatives included encouraging local council to adopt a falls prevention policy for public places; hospitals to accept policy for patient management and ward environments; and the Department of Housing to be compelled to have falls-safe building codes. To this effect, Stay on Your Feet developed a set of guidelines entitled ‘Preventing falls in public places: Challenges and opportunity for local government’ which was distributed to all councils on the North Coast (Kempton et al.,

1998). This document sought to assist local governments in understanding the issue of senior's falls and taking falls prevention measures.

In addition, in 1993 four North Coast local councils received seed grants from the Public Health Unit. Each council (i.e. Bellingen Shire Council, Hastings Shire Council, Kempsey Shire Council, and Nambucca Shire Council) was able to undertake their own falls prevention activities in order to identify and rectify fall hazards within local town centers. For example, Nambucca Shire Council undertook safety audits of businesses and provided proprietors with a copy of the safety assessment and a document showing how falls safety and access could be improved.

In the Final Report of SOYF, Kempton et al. (1998) note that SOYF would have benefited from an earlier introduction of policy development strategies. Though, as mentioned above, a few local councils were early partners with SOYF; most partnerships with local councils only occurred in the last year of the intervention.

3.3 A Final Note on the Implementation of SOYF

Throughout the implementation of SOYF there was an emphasis on the involvement and empowerment of older adults (Garner et al., 1996). SOYF employed an older woman as the Falls Prevention Coordinator, which Kempton et al. (1998) believed added to SOYF's "credibility and acceptance" (p.62). Seniors were involved in planning risk reduction, educating other seniors, and evaluating the results. In 2009, Peel and Warburton (2009) reflect on the innovativeness and effectiveness of this approach. Although the results of SOYF cannot solely be attributed to this single component, Peel and Warburton (2009) argue that peer education provides effective communication, positive role models and a cost-effective and sustainable approach for fall prevention (Peel and Warburton, 2009).

SOYF also worked with existing community networks and structures and took into account the community's own perception of their needs. Specific aims of this approach included: utilizing local knowledge, leadership and expertise; fostering community ownership of the problem and input into solutions; allowing for a mix of strategies; and providing for future sustainability.

Garner et al. (1996) report that the key to the success of SOYF's implementation was the inclusion of:

- widespread involvement of older people in program delivery;
- development of effective partnerships and networks;
- well researched and appropriate resources;
- carefully targeted media messages;
- employment and training of peer-group community educators;
- use of seeding grants as local government incentives;
- harnessing of established links between older people, their general practitioners and other health workers; and
- strategies based on formative research, and regular monitoring and improvement of those strategies

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These components can be usefully incorporated in any replication of SOYF.

A further point of consideration is that part of initial success of an intervention is its novelty and the eagerness of staff. Replications should be mindful of recapturing these components. Another final note made by the Final Report on SOYF recommends that future adaptations target a specific age group, rather than attempting to create programs that target all people over 60 (Kempton et al., 1998). In this pursuit it is important to be mindful that different age groups would likely require different strategies.

4. Outcome

4.1 Overview

Evaluation strategies of SOYF were wide-ranging in order to obtain a diverse understanding of outcomes. The Stay on Your Feet five-year evaluation budget was \$148 000 (according to van Beurden et al., 1998) and involved a large-scale demonstration program with the availability of evaluation expertise. Strategies to evaluate SOYF included surveys of annual reach, local government policy and practice, and of the knowledge and attitudes of the target group towards falls. A comparison of hospital admissions in the intervention area with the rest of New South Wales and with the Queensland control area was also obtained³ and analyzed (Kempton et al., 1998; van Beurden et al., 1998).

The methodology used in the evaluation of SOYF was comprehensive. The control area (Sunshine Coast, Queensland) was carefully selected to match New South Wales' intervention area in terms of geography (coastal, rural region with urban centers), demography (high proportion of retirees) and climatic factors, while at the same time being remote enough not to be influenced by the interventions (Kempton et al., 2000). The control area did not have any systematic falls prevention interventions in place at the outset of SOYF and the health service providers in the control area agreed to stay intervention-free for the duration of the program (Kempton et al., 2000). The control area was used to compare falls related hospital morbidity data from the two regions. In addition, a longitudinal telephone risk-factor survey was conducted amongst 2.5% of North Coast (intervention, n=2000) and Queensland (control area, n=1600) residents. Phone calls lasted a maximum of 20 minutes and were used to obtain information on the knowledge, attitudes, falls incidence and falls outcomes (van Beurden et al., 1998). Focus-group discussions were also conducted with nine groups of 8 to 10 older people to gauge opinions, beliefs and perception about falls (van Beurden et al., 1998).

After the 1992-1996 Stay On Your Feet falls prevention program ended, cost-effective and sustainability analyses were conducted (Beard et al., 2006; Barnett and van Beurden, 2002). These later analyses further our understanding of the long-term outcome of SOYF.

³ Sources included the NSW Inpatients Statistics Collection via HOIST (1991-1995), the Queensland Morbidity Data Collection (1991-1992), and the Queensland Morbidity and Mortality System (1993-1995)

4.2 Independent Measures of Effect

4.2.1 Hospitalizations

The evaluation of SOYF revealed measurable gains in health outcomes from a community intervention that targeted falls prevention (Kempton et al., 2000). At the final year of follow-up for hospitalizations (1994/1995), age-standardized falls related admissions for North Coast residents aged 60+ years was 20% lower than admissions for the Sunshine Coast (control group) residents (Rate ratio= 0.80; 95% CI 0.76 to 0.84; $p<0.01$) (Kempton et al., 2000). A similar result was observed when comparing North Coast residents to in the rest of North South Wales. See Table 2 for the rates of falls per 100,000 for the years between 1991/2 and 1994/5.

The reduction in falls was similar for males (23%) and females (19%). As expected with an ageing cohort, the mean falls incidence (baseline versus follow-up) rose in both intervention (0.297-0.365 falls/person/year) and control group (0.280-0.413 falls/person/year) (Kempton et al., 2000). This may be due to an increase in age as well as an increase in medication use, which may cause unsteadiness (Hahn et al., 1996).

The statistically significant 20% reduction in falls was found in both a comparison to the control community and the state of New South Wales as a whole (Kempton et al., 2000; Kempton et al., 1998, Table 2). This figure is argued to be a conservative estimate of effect because the data for the final year of the intervention (1995/1996) was not available (Kempton et al., 1998), and was therefore not included in this widely cited calculation (Kempton et al., 2000; Barnett et al., 2003; Barnett et al., 2004; McClure et al., 2010).

Table 2: Direct Age Standardized Falls-related Hospital Separation rates per 100,000 persons in New South Wales North Coast (NC), Queensland Sunshine Coast (SSC), and NSW total residents aged 60 years and over (1991/92 to 1994/95)

Year	NC rate/ 100,000 (±95% CLs)	SSC rate/ 100,000 (±95% CLs)	Total NSW rate/ 100,000 (±95% CLs)	NC vs. SSC Rate Ratio (±95% CLs)	NC vs. Total NSW Rate Ratio (±95% CLs)
1991/92	1653.5 (1640.3, 1667.3)	1666.0 (1651.8, 1680.9)	1808.8 (1801.6, 1816.1)	0.99 (0.94, 1.05)	0.91 (0.86, 0.96)*
1992/93	1732.4 (1719.2, 1746.2)	1649.4 (1635.4, 1664.0)	1919.1 (1911.8, 1926.4)	1.05 (0.99, 1.11)	0.90 (0.85, 0.95)**
1993/94	1712.2 (1699.2, 1725.8)	1822.6 (1808.5, 1837.4)	2017.7 (2010.4, 2025.1)	0.94 (0.89, 0.99)*	0.85 (0.80, 0.89)**
1994/95	1641.8 (1629.1, 1655.0)	2051.2 (2036.8, 2066.2)	2016.5 (2009.2, 2023.8)	0.80 (0.76,0.84)**	0.81 (0.77, 0.86)**

* $p<0.05$, ** $p<0.01$

Source: Kempton et al. (1998).

North Coast Rate Ratio 1991/92 (baseline) versus 1994/95 (follow-up): females = 0.96, Males = 1.12, Persons = 0.99.

4.2.2 Self-Reported Falls

At follow-up, there was a non-significant lower rate of self-reported falls in the intervention cohort compared to the control cohort. A Multivariate analysis, which controlled for age and gender differences, showed the impact of the intervention was a non-significant reduction (from 0.297) of 0.066 falls/person/year (-22%), $\beta(\text{intervention}) = -.071$, $SE = 0.047$, $F = 2.22$, $p = 0.14$ (Kempton et al., 2000). This 22% (ns) self-reported reduction in falls has been seen to support the statistically significant 20% reduction in hospitalization that results from elderly falls (Kempton et al., 2000).

4.2.3 Attitudinal and Behavioural Changes

Stay on Your Feet was found to have a significant influence on attitudes towards falls. Intermediate and health outcomes were evaluated via a longitudinal telephone interviews (Hahn et al., 1996, Kempton et al., 2000). After only 18 months of the SOYF intervention there was a 6% reported increase in the belief that falls are preventable (Hahn et al., 1996). The full effect of four years of SOYF produced a statistically significant 34% increase in the awareness that falls are preventable and a 31% increase in elderly respondents considering they were at moderate or high risk of having a fall (Kempton et al., 2000). These attitudinal changes are reflected in many behavioural changes, and there was a significant increase in intervention subjects wearing safer footwear (35%) and non-significant improvements in other aspects of behaviour including more frequent vision checks, increased physical activity, and fall-safe changes to the home (Kempton et al. 2000). At the outset of SOYF, Kempton et al. (1998) thereby concluded in SOYF's final report that "the program has raised the awareness of older people regarding the risk of falling, improved their perceptions in relation to the preventability of falls and increased their knowledge of risk factors" (p.1).

4.2.4 Reach

The program had success in terms of its reach. Program reach was tracked annually from 1994-1996 in cross-sectional, random sample telephone surveys in the intervention area only (Kempton et al., 2000). These surveys aimed to identify what fall prevention strategies were most effective in increasing awareness in older people (see Table 3) (Kempton et al., 2000). The gender ratio was 2:1 (for females to males) and the age distribution was 71% aged 60-74, 24% aged 75-84, and 5% aged over 85 years (Kempton et al., 2000).

The final survey results for reach and outcomes of the Stay on Your Feet program, from a random (0.8 percent) sample of 744 North Coast residents aged 60 plus, are available in Table 3 (Kempton et al., 1998). In comparing 1996 with the previous two annual reach surveys, dramatic and significant increases in awareness of and involvement in the

various components of Stay on Your Feet were evident (Kempton et al., 1998). Over half the respondents had heard of the Stay on Your Feet program, a statistically significant increase since 1994 of 27 percent ($p<0.001$). About one third of older people received a copy of the Stay on Your Feet book (31 percent), which increased significantly from 1994 ($p<0.001$).

Effectiveness of media releases and promotions was reflected in the steady increase to almost 40 percent of respondents reporting reading a newspaper item about falls and one third reporting viewing a TV advertisement about falls, by 1996. Radio advertisements were less effective at only 13 percent hearing a SOYF radio advertisement, by 1996. The reach surveys indicate that awareness-raising strategies had significant reach amongst older North Coast residents, approximately a third to half of older North Coast residents (Kempton et al., 2000). Kempton et al. (2000) makes the assumption that significant reach has an effect on outcomes: “there were greater improvements in falls rate, wise medication use, physical activity and balance among subjects whose attitudes or knowledge had improved” (p. 32).

Table 3: ‘Cross-sectional surveys of SOYF program reach, indicating target population exposure to different SOYF components’

SOYF component	1994 n=494 No. (%)	1995 n=709 No. (%)	1996 n=744 No. (%)
Seen, read or heard about falls prevention	212 (43.0)	399 (56.4)	504 (67.7)**
Heard of SOYF	117 (23.7)	310 (43.7)	378 (50.8) **
Seen a falls TV ad	119 (24.1)	238 (33.5)	248 (33.3) **
Seen a falls newspaper item	100 (20.2)	168 (23.7)	294 (39.5)**
Received a SOYF book	60 (12.1)	155 (21.8)	233 (31.3)**
Received a SOYF calendar	37 (7.5)	NA	64 (9.0)*
Heard a SOYF radio ad	NA	NA	98 (13.2)
Used a ‘pill bag’	NA	36 (5.1)	69 (9.3)*
Attended a SOYF talk about falls	28 (5.7)	39 (5.5)	46 (6.2) *
Attended a gentle exercise class	26 (5.3)	37 (5.2)	59 (7.9) *
Had a SOYF home safety check	11 (2.2)	30 (4.2)	81 (10.9) *
Attended a Medication Workshop	7 (1.4)	4 (0.6)	18 (2.4)**
Attended a SOYF falls Expo	1 (0.2)	2 (0.2)	NA
Involved with any SOYF component	255 (51.6)	480 (67.7)	572 (76.9)**

* $p<0.05$, ** $p<0.001$ (χ^2 test comparing first and last instance: $df=1$).
NA – not available (interventions not conducted in these years).

Source: Kempton et al (2000)

Reach in NSW was also compared to the control area. This provided another measure of the exposure of falls and falls prevention messages provided in the intervention area by SOYF programs. Over half of participants in the intervention area (52.4%) had seen read or heard about fall or fall prevention, which is greater than the control area (17.7%) (Kempton et al., 1998).

4.2.5 Survey of Local Government Policy and Practice

This survey indicated that though the content of hazard-related complaints remained consistent from 1992 to 1996, the number of complaints rose dramatically throughout the intervention. Kempton et al. (1998) believe this is the result of greater falls prevention awareness and prioritization amongst the target population, as well as an increased awareness of the local government's responsibilities. The most common complaint was regarding providing and improving footpaths, improving lighting, improving surface finish, providing ramps, and improving access to facilities. During the program there was also a rise in specific protocols for dealing with reported falls (i.e. for insurance and hazard rectification). In this regard, the guideline that SOYF published was cited by 6 (of 13) local councils as a useful tool in developing fall prevention strategies (Kempton et al., 1998).

4.3 Cost-Effectiveness

In 2005, Kannus et al. explained that a major difficulty with multifactorial falls prevention strategies is that they can be labour intensive and thereby may not yield a cost-effective strategy to prevent falls and related injuries. Contrary to this view, it has also been argued that for the cost of one hip replacement (approximately \$40 000), you can run SOYF for a year (Evaluation of SOYF, 2006; Kempton et al., 2000).

In order to accurately determine the economic utility of SOYF, Beard et al. (2006) conducted a thorough cost-benefit analysis that was published in *Public Health*. This analysis 1) compared the estimates of savings from avoided hospital admissions in the intervention region to the control group, as well as 2) compared the hospital utilization in the intervention region with the state of New South Wales as a whole. In this assessment Beard et al. (2006) considered direct costs (i.e. inpatient costs, medical services, pharmaceutical benefits, nursing homes expenses, and allied health services) as well as indirect costs (i.e. time lost due to illness, pain, and suffering). Both methods in Beard et al.'s investigation showed a net savings of A\$5.4 million (direct costs alone) to A\$16.9 million (direct and indirect costs). As a result this research group concluded that SOYF was a highly cost effective falls prevention program.

Though Beard et al. (2006) argue that "well designed interventions for falls prevention among older people can be highly cost effective and a wise investment for all levels of government" (p. 750); this does not necessarily denote that the cost-benefit of SOYF cannot be improved upon further. For example, Kannus et al. (2005) points out that one limitation of a multidisciplinary fall-prevention intervention (like SOYF) is the inability to locate which part of an intervention is most effective. Accordingly, it is possible that one or two of the components of SOYF is largely responsible for the significant reduction in elderly falls. If this is the case, the surplus spent on additional components may be superfluous from a cost-benefit perspective, though deemed important as part of SOYF's multistrategic strategy. Independent calculations of the cost-effect for different components of the program would be recommended in the future (Beard et al., 2006). Nevertheless, given the enormous cost of falls and related injuries, it is promising that a prevention programs like SOYF can yield dramatic savings.

4.4 Sustainability

Sustainability is an important aspect of the quality of health promotion programs that provides enhanced health benefit and enables a program to sustain itself after funding has elapsed (Hanson et al., 2009). The systematic study of program sustainability has been proposed as “in its infancy” (Barnett et al., 2004) whereby even the definition of sustainability is dependent on the view of stakeholders (Hanson et al., 2009). Those who have evaluated the sustainability of SOYF have defined sustainability as incorporating program sustainability, agency sustainability, and sustainability of program effects (Crisp and Swerissen, 2002). A number of years after the original SOYF intervention was completed, Barnett et al. (2004) assessed the sustainability of SOYF amongst multiple community stakeholder groups including general practitioners, pharmacists, community health staff, local councils, and the original target group (older adult participants).

Barnett et al. (2004) found that 74% of GPs who had heard of SOYF believed that the program had influenced their practice. The most common activity of GPs was checking for medication that may contribute to an increased risk of falling in older patients (Barnett et al., 2003, 2004). Barnett et al. (2003) found that more than half of GPs didn't give advice to their patients about fall prevention, and more than one-quarter never used gentle exercise or walking groups in their referrals (both of which are beneficial for preventing falls). Pharmacists had less recall than GPs (45%), but many of those who had remembered SOYF reported being ‘somewhat’ influenced by the program (79%) (Barnett et al., 2003). Similar to physicians, pharmacists' main activity was checking patient medication and urging clients to dispose of out of date medication.

Community health staff demonstrated the highest degree of sustainable activities. Medication checks and gentle exercise classes were sustained at greater than 50%. Barnett et al. (2004) explain that this is especially “encouraging” given that a 60% rate of sustained activities has been considered a reasonable achievement (Bracht et al., 1994). It is also heartening that more than half of older adults described behavioural changes they made due to SOYF. The intervention strategies were designed to be self-sustaining (Garner et al., 1996) and it is heartening that daily walking, improving home safety, footwear changes, eye-check-ups and other behavioural changes were continued past the life of the original program.

The least sustainable of SOYF activities was amongst local government (shire councils and their access committees). Though regular checks on footpaths and other safety policies were sustainable, Barnett et al. (2004) believe that this was “most likely directly related to fear of litigation” rather than result of SOYF (p. 286). In support of this view, it was found that only one of the ten councils reported still using SOYF's manual, ‘Preventing Falls in Public Places’, as a guideline. In order to increase sustainable changes in local government, future adaptations are recommended to concentrate on key policy changes as opposed to manuals that may or may not be adhered to (Barnett et al., 2004).

Of course, the sustainability of a program will be influenced by the prioritization and reach of a program. In the later regard, Kempton et al. (2000) has shown that the reach for SOYF was extensive. In addition, other internal factors within organizations, personal interest, and influence from other sectors, will be influential (Barnett et al., 2004). However, though the sustainability of SOYF had varying degrees of success depending on the stakeholders, Barnett et al. (2004) conclude that SOYF has demonstrated immediate outcomes as well as long-term sustainability. This is especially true when considering the approach of health practitioners and the behavioural changes in the original target group. In future studies it would be important to determine whether program sustainability translates into a continual reduction in fall-related hospital admissions (Barnett et al., 2004).

It has been noted that SOYF NSW period of evaluation finished in 1997; however, the NSW SOYF program has led to a statewide falls prevention program with adaptations and replications worldwide. National policies, in Australia and New Zealand, have also increased the benefit and sustainability of SOYF.

4.5 Methodological Advantages and Limitations

There are some methodological limitations of SOYF that are noteworthy. For example, the estimations of hospital rates may be subject to annual fluctuations (Kempton et al 2000). Also, similar to other community-based fall prevention approaches, SOYF was not a randomized study (Kempton et al., 2000; McClure et al., 2005). It would be difficult to ensure compatibility of different randomized communities and to standardize SOYF in each locality. A randomized intervention design was also thought not to be suitable as awareness-raising through media outlets would effect neighbouring control areas (van Beurden et al., 1998). Instead, SOYF utilized a prospective, longitudinal evaluation design whereby cohort subjects were randomly selected from the intervention and control areas that were comparable for key demographic attributes, and multivariate methods were used to adjust for potential confounders (Kempton et al., 2000). However, the problem of a cohort design is that repeat measurements might influence responses of cohort participants.

Another limitation of a cohort design is attrition, which is an obvious concern considering reasons for attrition in SOYF may be associated with study outcomes (e.g. fall incidence) (van Beurden et al., 1998). Problems of attrition are expected in cohort studies, particularly in elderly cohorts (persons over 60) whereby morbidity, mortality and relocation (or move to nursing homes) provide a further difficulty in participant follow-up. To counter this problem, SOYF evaluations made an effort to locate persons who moved prior to the follow-up. Adjustments were also made for baseline differences through a covariate analysis (van Beurden et al., 1998). A further methodological limitation of SOYF's evaluation is the difference, albeit small, in the age distribution between the control and intervention group. The control group had 5% more individuals aged 60-64 years-old and 5% less aged 80-84 years old ($p < .001$ and $p < .02$) (Kempton et al., 2000).

Notwithstanding these limitations, Kempton et al. (1998) and other research groups have since credited SOYF as a well-executed and comprehensively evaluated community intervention program, which demonstrated measurable gains. For example, a Cochrane meta-analysis examined the effectiveness of community-wide, multi strategy initiatives aimed at reducing falls in older adults. McClure et al. (2005) was only able to identify five studies (out of 23 identified study) that met the criteria for inclusion into the analysis. The only Australian fall prevention program to date (with a rigorous evaluation) was reportedly SOYF, which also was the largest study of those reviewed with one of the highest reported success rates in reducing falls (McClure et al., 2005).

4.6 Summary

The extensive evaluations and clear presentation of the SOYF program has distinguished SOYF in the field of falls prevention. According to Kempton et al (1998) “Stay on Your Feet has demonstrated that a well planned, well executed and comprehensively monitored and evaluated community intervention to reduce falls can achieve measurable gains in both intermediate and health outcomes” (Kempton et al., 1998, p.1).

It is encouraging that health outcomes in SOYF are cross-checked from different sources and all indicators are linked in an integrated framework that reinforce each other. For example, the 20% reduction in hospitalization as a result of falls is corroborated by a 22% reduction in self-reported falls (see above). SOYF conducted evaluation on multiple levels (e.g. process, formative and outcome), using quantitative and qualitative methods (e.g. telephone and written surveys, hospitalization data), and diverse approaches (e.g. cost benefit and sustainability analyses) to fully understand the effect of the program (van Beurden et al., 1998). The broad and in depth approach taken in the evaluation adds credibility to the program, as does the many publication of SOYF’s findings in academic journals (Ganz and Wu, 2007).

The result of SOYF’s evaluation—of reach, cost, sustainability, falls reduction, and changes in attitudes and knowledge surrounding falls—illustrate measurable gains in intermediate and lasting health outcomes from a community falls prevention program (Kempton et al., 2000). The reported success of this program has helped SOYF gain intersectoral support by obtaining grants for extended implementation and evaluation, and has made SOYF a model for falls prevention program (van Beurden et al., 1998).

5. Adaptations

Though the funding for the initial Stay on Your Feet program ceased in 1997, the program continues to be replicated, adapted and a major influence in the field of elderly fall prevention. There are multiple factors that vary among newer SOYF programs, expertise; however, the breadth and diversity of these programs attest to SOYF's worldwide impact on the field.

5.1 New South Wales, Australia

As detailed above, the SOYF program began on the North Coast, NSW. New South Wales has continued their falls prevention efforts. In 2006, three years of funding was received from the NSW Health Department to adapt the most successful aspects of SOYF to Gosford and Ryde/Hunters Hill. This ongoing program retained a multistrategic approach to raise awareness and education amongst local partners and within the community. In SOYF NSW awareness campaigns target adults over 65 while physical exercise is offered to those aged 50 and over (personal communication with Helen Kale). The aim of SOYF NSW is to promote active and positive aging. Implementation of SOYF NSW is involved in increasing physical activity, conducting home safety checks, and improving vision in older adults.

The awareness campaign in SOYF NSW took on an inventive strategy whereby a single risk factor is focused upon for three months before progressing to another risk factor. This approach is conducted in order to retain interest in the SOYF message by continually providing new and useful material as well as allowing the organizers to effectively network with partner organizations that are specific to each risk factor. Awareness campaigns also involve educational talks to seniors concerning falls, prevention of falls, and the fear of falling. Furthermore, resource kits were developed and include a shopping bag with the SOYF logo, practical resources (e.g. pill cutters), fact sheets, and other falls awareness material (personal communication with Helen Kale). In addition, newspaper, banners, advertisements on buses, community radio interviews and other media outlets are utilized. Over the last three years, the brand identity of SOYF has increased and the organizers have witnessed an anecdotal change in senior's behaviour (personal communication with Helen Kale).

Working with local partners was emphasized throughout the program and was manifest in the SOYF NSW implementation (personal communication with Suzanne Miten-Lewis and Helen Kale). For example, Gosford involved ambulances and libraries in disseminating information regarding falls and falls prevention. Local optometrists were also enlisted to promote the message of regular eye checkups. Incentives were used to reinforce the SOYF message. For example, between March and April 2008, older community members who had an eye examination or obtained new glasses from participating optometrists received a free falls prevention information pack. The ongoing SOYF NSW program has also encouraged GPs, Community Nurses, densitometry technicians, and other healthcare workers to refer patients. Patients are given free passes to Tai Chi classes, which is believed to be an important incentive (personal

communication with Helen Kale). Another initiative, regarding home safety, was encouraging local hardware stores to promote and display home safety products and give away falls prevention information packs to their customers. A similar initiative occurred in the summer of 2008 whereby pharmacies gave out kits and promoted the 'manage your medicines' message to their customers.

In terms of physical activity and exercise promotion, SOYF NSW has developed 'Staying Active Directories' that contain a local list of physical activity opportunities in the community. After 400 people responded to a Tai Chi ad in the Gosford local paper, twenty-seven Tai Chi classes in eighteen locations were also established. These classes have been particularly popular and there is a large involvement (approximately 200 people attend classes weekly) (personal communication with Helen Kale). The success of this program may be due to the initial receipt of (one to three) free classes, the low cost of classes, and the enlistment of health professionals to refer patients to the program.

In Ryde/ Hunters Hill, SOYF NSW worked directly with public housing residents to increase physical activity and initiate exercise classes. Furthermore, a Staying Active Expo was also held in May 2007 whereby 130 people were able to taste different types of exercise and gather information from guest speakers and stalls. A further Expo entitled 'Active Mind Active Body' was held in October 2007, which won the Council's 'Best Community Event' award for 2007 and was repeated in 2008. A further inventive event is the 'Walking Challenge', which has occurred in both SOYF NSW locations and has been extremely popular. Using pedometers, participants are able to test and increase their level of physical activity during a four-week period.

The SOYF NSW program has been highly regarded; however, one significant challenge was the large percentage of non-English speakers in Ryde/Hunters Hill. This challenge was tackled by translating resources (e.g. the home safety fact sheets) into 6 different languages, and by distributing these resources to libraries, service clubs and community organizations. Furthermore, presentations in Ryde/Hunters Hill were also given to non-English speaking local community groups. For example, in September 2008 SOYF NSW organized a Tai Chi 'taste test' for an Italian-speaking women's group. Another challenge was providing physical activity to those who are financially disadvantaged. Often this population is at a greater risk for falling because of more inactivity and a higher incidence of chronic illness. In response, SOYF NSW developed partnerships and allowed participants to 'come and try' events. Further, SOYF funded exercise programs at each site, which led to increased access.

The funding for SOYF NSW was due to finish in June 2009, but SOYF NSW received an extension to externally evaluate the program. The evaluation is expected in June 2010 and will assess whether there have been any changes in community physical activity participation as well as survey all SOYF partner organizations (personal communication with Helen Kale).

5.2 Western Australia, Australia

Stay on Your Feet Western Australia (SOYFWA) is a current statewide falls prevention program that began around 1996 in the South West region following the successful New South Wales implementation. In 1998 the Department of Health Injury Prevention Branch officially adopted the Stay On Your Feet WA[®] model, and registered the trademark. SOYFWA is funded by the Department of Health Western Australia (personal communication with Karina Moore). The Department of Health Western Australia funds personnel costs (approximately (US) \$100,000/annum), printing and distributing of SOYF[®] Resources (approximately (US) \$30,000/annum), and other advocacy and promotional activities (approximately (US) \$700,000/annum).

SOYFWA is currently being driven by various collaborative groups working in partnerships within government and non-government organizations, across multiple sectors, and with key stakeholder with broad representation. Volunteers are also an active and important component of SOYFWA's success. Over the years, the implementation of SOYFWA has changed slightly; however, since 2001 the key service provider has been the Injury Control Council Western Australia (ICCWA). Nevertheless, SOYFWA has maintained a collaborative approach that was consolidated with the formation of the Falls Prevention WA Health Network in 2006. This network developed a model of care, giving advice regarding the location and general mechanism of falls prevention measures in WA, with SOYFWA taking a central role in this effort.

SOYFWA is focused on three primary services: (1) awareness raising, (2) volunteer management, and (3) orchestrating a SOYFWA Week on an annual basis. Awareness raising efforts include expos (in areas that are populated by the target group), community presentations, viewings of SOYFWA's video, as well as publishing and disseminating the quarterly SOYFWA newsletter and e-newsletter. SOYFWA also provides information on falls prevention to governmental, health and community organizations. SOYFWA's utilizes volunteers to spread messages of falls prevention. Through a peer role modeling and education program, volunteers participate in industry committees, networks, and meetings where appropriate. Furthermore, SOYFWA has a multi-faceted communication strategy to disseminate their message. In so doing, television, radio, print and other resources are utilized. ICCWA is also involved in other educational promotional activities through the principles of positive ageing. Culturally and Linguistically Diverse (CALD) materials were developed and are also disseminated as part of awareness raising efforts. SOYFWA runs an April No Falls Day, and their SOYFWA Week includes participation from local government, local health services, and regional communities. In 'SOYFWA Week', healthcare workers, volunteers and staff disseminate fall prevention material and merchandise, and discuss fall prevention with community members.

One venture that is particularly attention worthy was run in Burnbury, WA. In Burnbury, the Safety Walks Group evolved from the Stay on Your Feet Program. This venture was supported by local government where, partially due to a prevention awareness policy, the group was allocated \$20 000 from the local government budget for the purpose of hazard identification and rectification (Powell et al., 2000). The Safety Walks Groups targets behavioural and environmental changes across the five strategies set out by SOYF. For

example, besides the walking group being a forum for exercise, it strives to work with local authorities to remove public hazards in pedestrian areas, business houses and accommodation. Furthermore, seniors are trained, in four 2-hour sessions, about the risks of falls and fall prevention strategies. In group-meetings, participants walk and assess the safety of a location. A report of the group's findings is later given to local government or business for rectification. Over 18 months the group identified and rectified 86 hazards (Powell et al., 2000). Powell et al. (2000) believe that the success of this group is due to the funding and commitment of the local government, community empowerment, and the partnerships between agencies, people and communities.

Evaluation of SOYFWA is largely process driven with broader outcome evaluation undertaken by the falls prevention health network. Accordingly, feedback is collected on SOYFWA's resources, presentations, and events. Furthermore, the number of presentations, resources disseminated, and other activities are tracked.

The SOYFWA® program has become recognized nationally and worldwide with requests being received from both government and non-government agencies to use the program to help develop area specific literature and programs.

5.3 Queensland, Australia

Queensland Health and Injury Prevention Control Australia Ltd conducted a five-year falls prevention trial project from 2001 to 2006 called Stay Active, Stay Independent, Stay on Your Feet in the Wide Bay/ Burnett region. This program targeted people aged 60 years and over who were living independently in the Wide Bay/Burnett community. The Wide Bay/Burnett region was chosen for this trial because it has Queensland's highest proportion of people aged 60 years and over (approximately 49 000 people). This program was a direct cooperation and collaboration effort with the Northern Rivers NSW SOYF program. SOYF Wide Bay/Burnett spanned 21 local government authority areas and involved a range of communities, from regional, coastal, to rural.

In implementing this program, a few focal principles guided SOYF Wide Bay/Burnett practice, including to:

- encourage local involvement and ownership;
- be inclusive, accessible, simple and practical;
- start from what is already in place and aim to enhance and extend the reach;
- be guided by research (Queensland Health, 2008).

In practice, SOYF Wide Bay/Burnett program efforts translated into an awareness campaign, a volunteer program, community falls prevention education and training, and an emphasis on physical activity. Other SOYF Wide Bay/Burnett strategies included the message of safe footwear, home modification, medication review, and public safety (McClure et al., 2010). The awareness campaign, that aimed at raising the profile of SOYF amongst local older people and stakeholders, was involved with updating, creating

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and distributing falls prevention fact sheets, brochures, 'One Step Ahead' booklets, display boards, calendars, as well as publishing a bi-monthly community newsletter. In addition, a 30-second television advertisement on three regional television networks ran from June to November 2005 and January to April 2006. This was developed jointly with Northern Rivers Area Health Service. In addition, SOYF Wide Bay/Burnett implemented an Ambassadors Program whereby older community members were trained to volunteer with other local older people to promote independence and activity by sharing falls prevention information with them and supporting older adults in an informal, friendly and non-threatening manner (McClure et al., 2010). SOYF Wide Bay/Burnett also provided local education and training for workers who provide in-home services.

Physical activity was an emphasis in the SOYF Wide Bay/Burnett program. Physical opportunities were promoted widely, and numerous 'come and try' days were held in a number of locations across 33 communities and 21 Local Government Authority areas. Furthermore, new physical activities were developed through training local leaders (77 local leaders were trained in 20 communities). Inventive physical activities to get older adults involved included Nordic Pole Walking, Life Ball, Tai Chi for Arthritis and Gentle Exercise classes. Another useful adaptation to improve access and reach was a library loan system for physical activity equipment and resources on physical education.

The outcome of this five-year trial project (2001-2006) resulted in an increased proportion of older people who agreed that falls are preventable, which was also accompanied with behavioural changes in older adults (e.g. increased calcium intake and reported changes to home environments). Furthermore, due to SOYF's efforts more local activities were organized, particularly those relating to physical activity. An evaluation of the program revealed that there was no significant improvement in the incidence of self-reported falls or falls related injury based on self-reports, hospital admissions, or mortality data. However, as Queensland Health (2008) point out, "benefits may require several years to accrue". SOYF Wide Bay/Burnett has made some very useful recommendations on improving their program. These recommendations can be viewed at http://www.health.qld.gov.au/stayonyourfeet/documents/soyf_exec_summary.pdf.

While the Northern Rivers collaboration effort has ceased to exist and all those involved in that program have now moved on (personal contact with Helen Kale); Queensland's SOYF program is currently in its second phase of implementation, which is taking place in Queensland's Fraser Coast and Wide Bay Health Service District areas. Following from the trial project, in March 2006, the Falls Injury Prevention Collaborative (FIPC) was established. This clinician-led statewide collaboration organizes working groups to undertake research, resource development, education, and conducts special initiatives. FIPC also aims to reduce falls in Queensland by a multistrategic, 'SOYF umbrella model' implementation. As recently as 2008, FIPC's activities included developing prevention resources and developing strategies to support falls injury prevention initiatives, strategies, research and policy across Queensland. Furthermore, in Queensland, falls prevention across the continuum of care (including hospitals, residential aged care

facilities and in the community) is currently acknowledged as Queensland Stay On Your Feet® (Queensland Health, 2008).

5.4 South Australia, Australia

5.4.1. Adelaide West

SOYF Adelaide West was funded from 2002 to 2005 by the National Falls Prevention for Older People Initiative of the Australian Government Department of Health & Ageing. Though originally only funded for 2 years, a submission for a further one-year of funding was successful. The additional year involved continuation of some activities to continue and expand ongoing falls prevention efforts. A multidisciplinary team of educators whose work was underpinned by a health promotion framework, were employed to carry out SOYF Adelaide West project strategies. Key partners in this project were Adelaide Western Division of General Practice (AWDGP), Active Ageing SA, COTA National Seniors, Osteoporosis SA, Health Promotion SA and the members of the Western Falls Prevention Network (WFPN).

The overall aim of SOYF Adelaide West was to reduce falls-related morbidity in the western region of Adelaide, through well-defined objectives. The first objective was to develop and implement an accessible, sustainable, collaborative network of falls prevention and intervention programs. Through promoting a directory of services and collaborating with Commonwealth Carelink, the region's services were made more accessible. A second objective of SOYF Adelaide West was to improve screening, assessment, and management of at-risk individuals through tailored education directed at health professionals. These education sessions were based on evidence and best-practice guidelines. Furthermore, resource folders were developed that contained an educational program for health professionals.

Another objective of SOYF Adelaide West was to promote broad community awareness of falls risks, consequences and available interventions. A variety of media sources were therefore utilized to disseminate health information throughout the region. Notably, there was a focus on groups where members are likely to be at high risk, such as those with visual impairment. There was, reportedly, a positive response to presentations and materials, and a survey of older people indicated that there had been an improvement in perceptions and knowledge of falls prevention.

SOYF Adelaide West was also involved in physical activity education and programming. Accordingly, a directory of Activity Options for older people was launched at a forum that aimed to promote increased understanding and referrals between health and fitness professionals. The directory of Activity Options was highly rated and widely disseminated.

A last objective of SOYF Adelaide West was to develop and promote culturally specific programs and materials for falls and injury prevention in collaboration with other appropriate agencies. Accordingly, radio messages, newsletters and presentations were

developed to be inclusive of the Greek and Polish communities and other resources were translated and provided to GPs who were identified as serving large numbers of a non-English speaking community. Throughout their activities SOYF Adelaide West approached and worked in conjuncture with local government, consumers, builders, architects, designers and planners within South Australia to increase awareness of features of the built environment that can increase falls and injury risk in older people.

The evaluation of SOYF Adelaide West was completed by researchers from the University of South Australia. SOYF Adelaide West was implemented in phases using an action research model, which allowed researchers to assess a variety of process, impact and outcome measures. The evaluation of SOYF Adelaide West suggested that the number of upper limb related fractures from a fall decreased in the region, and that there was an increase in the number of hip protectors sold in the region. This indicates that there was a behavioural change in older adults towards preventing falls. The evaluation did not reveal any evidence of a reduction in the number of falls related admissions, but similar to SOYF Queensland, this evaluation correctly indicated that many other factors can impact these figures.

Health promotion and action research provided sound frameworks for this project and for future falls prevention activities. Presentations to groups of older people were seen to be particularly successful approach as they allowed interaction, story-telling and personal application of knowledge. Peer education was also perceived to be a useful method in health promotion. Furthermore, an interdisciplinary prevention strategy with intersectoral links (e.g. with fitness professionals and those responsible for planning and construction of built environment) is recommended to be included in future falls prevention planning.

5.4.2 Whyalla, South Australia

SOYF Whyalla was a falls prevention demonstration project that was also funded from 2002 to 2005 under the National Falls Prevention for Older People Initiative of the Australian Government Department of Health & Ageing. This project was one of five similar funded initiatives (including Adelaide West) in Australia between 2002-2005 (Dollard and Fuller, 2005). The funding for \$270 000 (Australian dollars) was distributed over two stages between March 2002 to March 2005.

Whyalla is a regional city in South Australia that is a 4 hours drive from Adelaide, the capital city. Accordingly, the aim of SOYF Whyalla was to adapt the SOYF program to a community based regional setting. The project aimed to establish an improved falls prevention system, to make that system sustainable, and to disseminate the lessons learnt (Dollard and Fuller, 2005). Prior to the commencement of the project, a gap analysis was conducted. This analysis revealed the need for a way to systematically detect individuals at risk of falling and the need for developing a wider range of physical activity opportunities. SOYF Whyalla therefore developed and implemented a range of strategies: (1) screening and referral, (2) workforce development, (3) community promotion and (4) physical activity development and promotion (Dollard and Fuller, 2005).

In order to improve screening and referral, a self-completed Falls Risk Checklist (FRC) was adapted and widely disseminated amongst GPs and other healthcare workers (Dollard and Fuller, 2005). Along with other tools provided to healthcare providers, the FRC was used to more systematically screen and assess clients. Many educational activities were also designed to engage the community and local health professionals in falls prevention, including providing discipline specific resources. Furthermore community promotion was sought by developing and disseminating falls prevention material for community use (e.g. posters, brochures, newspaper, radio copy, talks to community groups, volunteer peer educators). This awareness campaign was perceived to be very effective, especially the use of newspaper and brochures, and have influence on the target group's value of exercise and other beliefs. SOYF Whyalla also encouraged supervised physical activity options for older people (e.g. Tai Chi for Arthritis groups) (Dollard and Fuller, 2005).

As SOYF Whyalla planned to demonstrate system improvement rather than a reduction in falls, a process-focused (rather than outcome) initiative was undertaken (Dollard and Fuller, 2005). This approach allowed for frequent assessments and recommendations to improve the program, make the program more sustainable, and disseminate the lessons learnt.

5.5 New Zealand

5.5.1. Wellington, NZ

From April 2004 to December 2006 Sport Wellington set up a contract for Stay on Your Feet Greater Wellington in New Zealand with the aim to reduce the incidence and consequence of falls in older people in the Greater Wellington/Hutt region. The program was jointly funded by Capital and Coast and Hutt Valley DHBs, and ACC (Accident Compensation Corporation). Due to funding differences, the deliverable outputs from the program differed by region. The annual cost of the program was \$43 975.50 (New Zealand dollars).

The 'Stay on Your Feet Greater Wellington' program was an authentic replication of SOYF in its aim to provide a holistic and comprehensive falls prevention program. The program was involved in health promotion through awareness raising; exercise to improve strength, gait and balance; and improving falls policy. SOYF Wellington was organized by a qualified coordinator (e.g. physiotherapist), while support and guidance was given through a steering committee.

In general, the age range targeted by this program was 60-75 years of age. However, the observation that Maori 'age earlier' than European New Zealanders was taken into account and the falls prevention services were made available to Maori people younger than age 65 when it was appropriate. Referrals to the service were made from a medical practitioners, nurses, community organizations, or self-referral. The program also utilized the 'GrX program', whereby individuals are 'prescribed' an exercise prescription by their GPs, rather than a general pharmaceutical prescription.

Each individual was assessed before they entered the program and their GP was informed of their participation in the program. Individuals were individually assessed so that prevention programs suited their particular needs. For example, if an individual has a number of risk factors for a fall, an individualized exercise program and home management assessment was seen to be the most beneficial intervention. For others, attending a group based exercise session, e.g. a modified Tai Chi class, twice a week was the best management option. By being individually assessed, the individual was believed to receive the best intervention for their circumstances. When the best course of action may be the adjustment of medications, a medication review would be suggested to their GP for implementation. It was also recognized that there are some people who are at a particularly high risk of falling due to a combination of factors such as reduced strength, multiple medications and environmental hazards. When there is an especially increased risk, it was seen as more appropriate for the individual to be referred to a geriatrician.

SOYF Greater Wellington raised awareness amongst the public and health professionals through seminars (via speaker circuits), meetings, newsletters, and through local newspapers. Resources were developed, including a falls prevention pamphlet, prevention posters, risk-assessment questionnaire (used by GPs in referrals), and ‘Take steps to prevent falls’ branded shower mats (for use during home checks). In addition SOYF Greater Wellington ‘trained the trainers’ and thereby targeted key stakeholders and agencies through presentations, network meetings, and marketing initiatives.

Based on referrals and risk assessments, individuals were recommended an appropriate intervention to increase strength, balance and gait. These including a group exercise class (for low risk individuals), individualized classes by an appropriately skilled peer trainer (for medium risk individuals), and individualized classes by the falls coordinator or other health professional (for high risk individuals). In order to deliver multiple classes physiotherapists trained volunteers, peer trainers (friends, family, or neighbours), and residential care exercise facilitators in proven fall prevention exercises to be delivered individually or in groups. Most of the classes offered were Tai Chi or a modification of the Otago Exercise Program, which both have been proven to be effective. In addition to providing classes, the coordinator also referred individuals on to other services for other appropriate interventions such as vision checks, use of hip protectors, home hazard identification and modification, and a medication review.

SOYF Greater Wellington was also involved in developing relationships with and between organisations and services within the greater Wellington region in order to promote falls prevention. In particular, advocacy efforts focused on promoting physical activity provisions for the elderly population.

SOYF Wellington ceased when it was incorporated into a national falls prevention strategy, which is reflected in New Zealand Injury Prevention Strategy (NZIPS) (personal communication with Barry Hislop). Wellington has lost the SOYF branding in this more widespread implementation of falls prevention; however, Wellington retains the SOYF umbrella model of falls prevention.

5.5.2. Christchurch, NZ

In 2002, Christchurch, New Zealand Community and Public Health in partnership with the Ministry of Health started Stay on Your Feet in response to a report (i.e. 'Elder Care Canterbury: The Broken Hip Project') that highlighted the need for preventing falls in Christchurch's older adult population. SOYF is a volunteer delivered OEP (Otago Exercise Program), an evidence based strength and balance re-training program for older adults which has demonstrated excellent effectiveness, reducing falls and fall-related injuries in frail older-adults by 35% (Robertson et al., 2002).

There is also a focus on working collaboratively and raising awareness in organizations such as the local city council, Canterbury Arthritis Society, community based Physiotherapists, and ACC. This program was originally organized through community and public health, but in order to sustain this program it has moved into the community and is currently provided through Presbyterian Support Upper South Island (personal communication with Phillipa Nicoll). This SOYF adaptation does not contain the umbrella model of the original implementation, but continues to be focused on community education and exercise promotion. The purpose of this program is to prevent falls by promoting exercise through a strength and balance retraining program that has been specifically designed for older adults and empowering older adults to be aware of their risk of falling and help minimize that risk.

There are three elements to the Canterbury Falls Prevention program in Christchurch: Tai Chi, Otago Exercise Program for frail older adults (80+), and SOYF. The Stay on Your Feet program, as implemented in Christchurch, is also known as a modified Otago Exercise Program (OEP). SOYF in Christchurch remains a health promotion model, home-based program, whereby older adults are aided in making lifestyle changes through a supportive environment. In Christchurch, the Canterbury Falls Prevention program targets adults over 65 years who are living in the community or an independent unit. Patients are eligible for the program if they have a fear of falling, have decreased leg strength, decreased balance, or have had a fall in the last 12 months (this includes slips and trips that have not resulted in person lying prone on the floor). Tai Chi and SOYF is best suited for 65+ year olds while OEP and an appointment with a health professional is recommended to those who are frail or 80+.

In Christchurch SOYF is delivered by volunteers who are trained by physiotherapists to conduct the exercise program in a series of home visits. Physiotherapists attend the first visit and ensure quality control throughout the program. Contrary to OEP's twelve-month duration, the modified SOYF at Christchurch lasts for six months. Through the OEP program, participants become more agile by gradually conducting more diverse and challenging exercises (e.g. warm-up, flexibility, balance-based and strength-based). Programs consist of a set of leg muscle strengthening and balance retraining exercises using weights that progress in difficulty, and also incorporates a walking plan. There is much room for regime flexibility and visits can occur up to three times a week and include a walk or a tea break. To promote adherence, participants record the days they

complete the program and the volunteer telephones the client weekly. Other aspects of SOYF implementation are addressed at Christchurch. For example, volunteers address home hazards and safety upon visiting clients' homes and resources/information are distributed to raise awareness. After the program is completed patients are given a 'Green Prescription', a service that provides telephone support after 6 months of SOYF to assist clients in continuing with their exercise program. Around forty volunteers currently are involved in SOYF Christchurch, and each volunteer is involved with 1-3 clients (personal communication with Phillipa Nicoll).

Similar to the original SOYF's implementation, Presbyterian Support also spends time with education health professionals and allied healthcare workers in this area so they are able to refer patients to the falls prevention programs through a central coordinating system (personal communication with Phillipa Nicoll).

Though the total cost of running the SOYF program is \$145 000 annually, the cost of the program is free to the clients. Funding is principally provided by the Ministry of Health and local Primary Health Organizations (personal communication with Phillipa Nicoll). Some limitations of this program are the sustainability of funding and availability of a volunteer workforce (Coggan et al., 2004). Christchurch's SOYF model of elderly care has been replicated in Timaru, New Zealand.

5.6 Ontario, Canada

One very literal replication of SOYF was conducted in Ontario, Canada. In 2004, SOYF was launched in three diverse Ontario communities: 1) Kingston, Frontenac, Lennox and Addington (KFL&A), 2) Grey Bruce, and 3) Elliot Lake (Corlett and Warren, 2006). These three communities were selected after assessing their planning and proposed programs (Volpe, 2004). As SOYF was already considered to have proven success in Australia, the Ontario implementation focused on assessing if and how SOYF could be adapted to three diverse communities in Ontario (Corlett and Warren, 2006). Because of the diversity of the chosen areas, each centre adopted a different model for their implementation. For example, KFL&A is an urban centre that is supported by a Public Health Unit and therefore adopted an 'urban' model'. In contrast, Grey Bruce developed a 'rural model' because of its rural composition of many decentralized towns and small villages with some support from a Public Health Unit. A 'business model' was utilized by Elliott Lake because this isolated northern community had no support from a Public Health Unit but gained most of their support from a major corporations that attracts seniors and retirees to the community (i.e. Elliot Lake Retirement Living) (Corlett and Warren, 2006).

The Ontario Neurotrauma Foundation (ONF) provided a seed grant for up to \$100 000 for each of the three selected communities, \$50 000 to be spent per year, for two years. The goals of the grant were 1) to enable sustainability of SOYF beyond the two-year

project⁴ 2) to work in coordination with other interested stakeholders; and, 3) to create an agenda for policy advocacy and long-term funding with the Government of Ontario and other stakeholders for the implementation of SOYF in communities across the province (Corlett and Warren, 2006). In addition to ONF funding, in-kind or cash contributions from SOYF partners were extremely well received. The amount of these funds depended on each site, with Elliot Lake receiving over three times the value of the grant, Grey Bruce receiving almost four times the value of the grant, and KFL&A receiving an estimated ten times the value of the ONF grant (Corlett and Warren, 2006). Though in-kind funding was very generous, program leaders found the SOYF initial grant was critical to the generation of additional in-kind contributions. ONF also added an additional, one time grant of \$10,000 for program evaluation.

One commonality between the three sites was the ONF provision that all initiatives took into account SOYF's umbrella model, containing each of the five thematic areas of implementation into their effort. Each site developed plans, initiated activities under the five SOYF strategies and provided updates on their progress and achievements. In this respect the program was in keeping with the initial Australian implementation. The implementation process in Ontario began in September 2003. Eric van Beurden, a research and evaluation coordinator for the original SOYF Program, assisted in ONF's aim of "best practice" transfer (Volpe, 2004).

In each site programs encouraged networks, alliances, and referral patterns. In order to maximize the collaborative opportunities in the province, the ONF and SmartRisk established a strategic alliance. ONF was responsible entirely for the adjudication of program submissions, and conducted the process in a manner that would be fair and equitable to all communities. SmartRisk assisted in advertising, consulting and supporting communities in capacity building through joint activities, such as the development of the Falls Forum discussion board (Volpe, 2004).

During the implementation process, the communities encountered barriers in implementing SOYF. Elliot Lake reportedly had difficulty distributing their information to French-speaking seniors and relocated seniors. Grey Bruce had the challenge of distributing their material amongst a population that has a low-literacy rate and is culturally diverse (including Aboriginals and Amish individuals). Lastly, Kingston faced the challenge of serving a population that is very isolated (i.e. 30-50% of seniors living alone) and therefore at great risk of falls and other serious health outcomes (Culmer and O'Grady, 2005). The difficulty of reaching rural and isolated low-income seniors was an important obstacle. The two rural groups, Elliot Lake and Grey Bruce, not surprisingly also had difficulty due to geographical distance, lack of adequate transportation systems, and poor weather. Future initiatives in Ontario will benefit from lessons learnt from the implementation of the three originally funded ONF sites (Corlett & Warren, 2006). Though the umbrella approach was sought, due to capacity issues more selected

⁴ In so doing the role of public health units in organizing and maintaining the program beyond its original funding was essential (Corlett and Warren, 2006; personal communication with H  l  ne Gagn  ).

strategies were implemented (e.g. home safety, exercise) with the hope that other strategies will be included at a later stage (personal communication with H  l  ne Gagn  ).

The concerns that Corlett and Warren (2006) expressed, regarding the sustainability of SOYF in Elliot Lake once the seed grant finished, were partially realized. On the other hand, both Grey Bruce and in KLF&A have been able to continue falls prevention efforts and are now in a phase of revitalization (personal communication with Marguerite Thomas). In so doing, liaison with healthcare workers and other fall prevention programs in these regions, have been an asset (personal communication with Marguerite Thomas). In addition to the continuation of SOYF in the initial ONF funded communities, SOYF projects have been extended to Parry Sound, North Bay, and Sudbury. Ongoing efforts in these sites include supporting fall prevention theatre troupes (which experienced success in the other sites), arranging falls prevention commercials, and printing SOYF calendars, brochures and books. Plans are also underway for falls prevention meetings and discussions with health professionals as well as other community exercise projects (Personal communication with Fran Laframboise).

5.7 United Kingdom

5.7.1 Mid Hampshire, UK

From 2002 to 2006 a multi agency alliance, led by Mid Hampshire Primary Care Trust (MHPCT), implemented a Stay on Your Feet program to prevent elderly falls using a "multi-interventional (not only medical) strategy" (Owen, 2003). Accordingly, SOYF Mid Hampshire considered falls prevention with attention to the greater context of local health and community priorities. Throughout their programming, SOYF Mid Hampshire encouraged older adults' participation as demonstrated by frequent informal discussions and focus groups on falls awareness as well as lunches for older adults whereby participants completed questionnaires on falls and falls prevention. Furthermore, feedback was also sought and incorporated from health professionals (e.g. senior Occupational Therapists, Practice Nurses, District Nurses), care homes (e.g. nursing care team, nursing home managers), and voluntary sector and community groups that offer health and social care locally (e.g. alliance members). This feedback was beneficially incorporated into SOYF Mid Hampshire's activities.

SOYF Mid Hampshire raised awareness through distributing bookmarks, SOYF packs, and leaflets for health professionals. These resources contained information on falls and falls prevention. As of May 2004, adapted versions of SOYF Falls Prevention Packs were carried by Hampshire's ambulance vehicles so that fallers who were not in need of hospitalization received information to prevent repeated falls (Owen, 2006). Another productive awareness initiative in Mid Hampshire was the linking of SOYF with other health campaigns across Winchester. For example, falls prevention leaflets were given to District Nurses to distribute to older people receiving Flu immunizations. Furthermore, information about Stay on Your Feet workshop and other project activities ran in newspapers, local newsletters and on the radio. In addition, the Stay on Your Feet Times,

a popular newsletter to update alliance members on SOYF activities and falls prevention, was developed and produced quarterly (Owen, 2004).

SOYF Mid Hampshire also focused on training older adults through seminars in the local community and home visits. On average SOYF Mid Hampshire delivered two Falls Awareness events/seminars per month to people over 65 years attending community clubs (Owen 2004). These sessions focused on falls prevention measures, risk assessment, and guidance about how to get up following a non-injurious fall. SOYF Mid Hampshire also carried out home safety and security checks, arranged minor safety repairs, and provided guidance on grant aid assistance and home energy savings. In addition to events with the public, awareness raising, training and consultation events were organized for partners, voluntary agencies, and caregivers. For example, a PGEA accredited workshop for health professionals and General Practitioners was held in November 2002. The aim of this event was to examine local provisions to prevent elderly falls and to consider the issues relevant to the development of Falls Prevention guidelines.

The Stay on Your Feet Alliance, which included members from a broad spectrum of organizations and community groups, met approximately every two months and provided an important forum for sharing information, expertise, and resources. In collaboration with GPs, The Stay on Your Feet Alliance usefully developed easy to use screening tools and Risk Assessment Guidelines. These tools were an all-encompassing assessment of older people's needs so procedures were not needlessly duplicated by different agencies. Especially notable in this (as well as other) efforts of SOYF Mid Hampshire is the cross agency collaboration (e.g. clinicians, public agencies and patients), which was usefully incorporated throughout the program (personal communication with Sara Owen).

A key challenge that was identified by SOYF Mid Hampshire, but is not restricted to this prevention program, is the difficulty in finding accurate measures to measure success in falls prevention and isolating these measures from confounding variables that also contribute to falls and related injury (personal communication with Sara Owen). Furthermore, the full impact of a program is unlikely to be seen for a while. Evaluations were internal though annual reports were submitted to key stakeholders and funding bodies (personal communication with Sara Owen). Feedback on training programs, screening, and assessment tools, was also collected and incorporated.

The outcome of SOYF Mid Hampshire was believed to be a reduction in falls, on the basis that the increase of First Consultant Episodes (FFCE) of fallers crude rate per 1000 population in people over 65 gradually declined since 2002 and there was a gradual decrease in the crude rate of First Consultant Episodes due to falls with Fractured Neck of Femur since 2003 (Owen, 2006). Furthermore, in 2004, a third of District wards showed a decrease in the number of falls in people over 65 compared with the previous year (Owen, 2004). Nevertheless, an increase in falls amongst females over 85 was also observed during the course of the program; however, this reflects both local demographics and national trends (Owen, 2006).

The annual cost of SOYF was approximately £32,000. SOYF Mid Hampshire recommends that future SOYF programs increase falls prevention activity in primary care, ambulance and pharmacy services; increase osteoporosis awareness in primary care services; maintain links with older people's forums and groups to assess the impact of falls services; collaborate, train and support practitioners, volunteers, informal caregivers and older people; and, identify and utilize 'hotspots' to disseminate information and resources to older adults who are housebound (i.e. mobile library services) (Owen, 2004). Diverging from the original SOYF target group, SOYF Mid Hampshire also recommends that future SOYF programming target older adults who live in residential care (Owen, 2004). As the in-kind contribution was believed to be a particular strength of the project, future collaborations are also encouraged (personal communication with Sara Owen).

Though SOYF Mid Hampshire was seen as a successful program, SOYF programming ceased in October 2006 because Mid Hampshire Primary Care trust was merged into the larger Hampshire Primary Care Trust (personal communication with Sara Owen).

5.7.2 Warrington, Cheshire, UK

In 2007, the Warrington Community Services Unit created a SOYF exercise program, targeting adults over sixty-five. This eight-week 'gentle exercise' class has an education as well as an exercise component. The purpose of the class is to deliver a physical activity program that will prevent falls and improve the independence in older individuals living in the community. In 2007-2008 the program was allocated £75,000, which allowed SOYF Warrington to provide the course and transport free of charge (personal communication with Helen Anderson).

Each week a health professional attends the group to provide a thirty-minute discussion on various topics (e.g. foot care, weight management, falls prevention...etc.). As well, there is a one-hour varied exercise class (e.g. tai chi, using resistance bands...etc). SOYF Warrington has strong collaborations within the health care system. This is demonstrated by the program's requirement that individuals be referred to the program by a GP or practice nurse so to ensure that the individual is fit to attend the class. Individuals are excluded from this program if they are very frail, have an unstable health condition, or if they do not consent to the referral.

The physical improvement, program completion, sustainability,⁵ and patient satisfaction are tracked via surveys (personal communication with Helen Anderson). After completing this program, individuals have the option to remain in the program for another eight weeks. After an additional eight weeks, individuals are invited to participate in other active community programs, i.e. *Reach for Health*.

5.7.3 Wokingham, Berkshire, UK

⁵ Sustainability is deemed to be present if the individual becomes involved in community classes after the eight-week program.

Another SOYF adaptation has been occurring in Wokingham, Berkshire (South East England). In October 2009, Wokingham incorporated the SOYF branding into their already existing falls prevention program. The emphasis of SOYF Wokingham is to raise awareness on falls prevention and home safety, though they are also involved in promoting exercise and conducting multifactorial risk assessments (personal communication with Karen Arding). The target group is individuals over 60 years of age who have been referred to Wokingham's falls advisory service by their GPs, district nurses, physiotherapists, senior's groups, family members or are self-referred. SOYF Wokingham has incorporated SOYF's message of putting a positive spin on falls prevention (personal communication with Karen Arding).

The major effort of SOYF Wokingham thus far has been the adaptation of a SOYF booklet from Western Australia⁶ so to make this resource relevant to the Wokingham population. Adaptations include making the 56 page self-help booklet's wording more suitable to British individuals, changing the relevant contact details, and adding information about local hazards and home hazard prevention. The booklet cost approximately £3 200 to print 5 000 booklets (personal communication with Karen Arding). Funding was received from a Wokingham Borough Council Prevention Grant . Booklets are distributed during talks at senior's clubs or disseminated through Wokingham's falls advisory service at the time of an assessment. The Wokingham falls advisory service goes through the SOYF booklet with their clients and, if necessary, provides them with equipment and further assistance. Satisfaction forms are included inside the SOYF booklet and this feedback will be used to improve upon this resource (personal communication with Karen Arding).

Other initiatives, not under the SOYF branding, are occurring at Wokingham, who boasts a multi-factorial and multi-disciplinary approach to falls prevention. This includes advice and information on falls prevention measures, home safety and general wellbeing. Awareness is raised through public events (e.g. talks) as well as by a National Falls Awareness days. Furthermore, equipment such as grab rails, stair rails and other measures to reduce the risk of falls, are also provided.

5.8 A Note on Adaptations

Adaptations of SOYF are an excellent way to transport the original success of the North Coast's falls prevention efforts. However, as seen above, most of SOYF's adaptations are less intensive than the original program (in scope and time-frame), yet these programs have not conducted an outcome evaluation to establish that their program has the same utility as the original SOYF program. These less comprehensive programs may be more sustainable and cost-effective, but they also may not have the same anticipated success in reducing falls. McClure et al. (2010) sought to investigate whether these 'less ambitious' adaptations of SOYF could deliver comparable outcomes to the original SOYF program.

⁶ With permission from the Department of Health Western Australia

McClure et al. (2010) investigated self-reports,⁷ mortality, and hospital separations in two different SOYF program adaptations: Wide Bay, Queensland, and Northern Rivers, NSW.⁸ As mentioned above, both of these programs used the motto ‘*Stay Active, Stay Independent, Stay on Your Feet*’, with the project called ‘*Stay on Your Feet*’ (or SOYF) in Wide Bay, but ‘*Stay Active, Stay Independent*’ (or SASI) in Northern Rivers. The goal of both of these programs was to reduce fall-related injury by incorporating SOYF falls-prevention strategies into existing community structure and services. The implementation of these strategies varied, but both programs took place between 2002 and 2006.

McClure et al. (2010) found that neither of the interventions, in Wide Bay or Northern Rivers, substantially decreased the rate of falls-related injury among older adults, though there was some reduction in women’s reports of multiple falls. This research group therefore concluded that an intensive, multistrategic, public health strategy is important for SOYF’s success: “If government and community sectors focus population resources on the reduction of generic distal risk factors, and clinical resources on proximal risk factors, the continuum of risk will be more effectively addressed and finite resources more efficiently deployed” (McClure et al., 2010). In support of this view, systematic reviews by Gillespie et al. (2003), Chang et al. (2004), and Gates et al (2008), similarly suggest that the beneficial effects of fall prevention programs are more pronounced in intensive multistrategic interventions. Though many SOYF practitioners take the view that ‘something is better than nothing’, an intensive and multistrategic intervention with an effective implementation should be the aim of a SOYF replication (Fixsen et al., 2005).

In addition to being intensive and multistrategic, SOYF adaptations should also not be ‘stuck in time’. Progressing the SOYF program requires incorporating emerging evidence-based research that may be useful in improving upon the initial program. For example, until very recently, sleep disorders were an unrecognized cause of falls, though sedating medication has been known to contribute to falls in older adults for some time (Studenski, 2010). Aside from sedatives, daytime sleepiness and nocturnal sleep conditions (e.g. low levels of light, insomnia, fragmented sleep) also contribute to balance disorders and fall risk (Studenski, 2010; Ancoli-Israel and Ayalon, 2009). Susceptibility to falls is increased because sleep disruptions, as a result of a sleep condition, cause reduced alertness and attention (Studenski, 2010). Although, sleep disorders have not been incorporated into clinical guidelines for falls prevention (Studenski, 2010), a SOYF adaptation may usefully work with GPs, healthcare workers, and the target group to increase awareness that sleep problems are not an inevitable part of aging and that by modifying one’s sleep disorder it is possible to prevent falls. For example, GPs could ask their patients about their sleep quality, as common poor sleep

⁷ Self-reports, in the form of questionnaires, were conducted in 2002 and 2006 and assessed information on self-reported falls, preventative behaviour, attitudes and knowledge, and campaign awareness.

⁸ New South Wales was the site of the original SOYF program.

self-reports are often good indicators of a sleep problem (Studenski, 2010).⁹ Recent research on Vitamin D supplements and medication use could also be usefully incorporated into a SOYF program. New and insightful research regarding the cause of falls or falls prevention practice has the possibility to greatly enhance the SOYF program.

6. Conclusion

The reasoning for falls preventative programs is self-evident when considering the growing population of older adults, the high prevalence of falls in this age group, and the health and fiscal implications of falls (McClure et al., 2010). The Stay on Your Feet program is a multi-strategic (i.e. 'umbrella' model) intervention that aims to reduce elderly falls by addressing falls awareness, community education, home hazards, healthcare management, and fall-prevention policy. Through the implementation of these diverse strategies, the program is consistent with the Ottawa Charter for health promotion (1986) and the Jakarta Declaration (1997), which seek to strengthen community action. The initial SOYF program (1992-1996) was extensively evaluated and shown to be successful at increasing awareness and decreasing fall-related hospitalizations. The program has also demonstrated cost-effectiveness and sustainability (especially in community education and behavioural changes amongst older adults). As an additional marker of its success, the Stay on Your Feet program has received international attention and has become a model for fall prevention strategies worldwide.

Despite the notoriety of the replications and adaptations of SOYF, the effectiveness of these programs in preventing falls has yet to be evaluated and published. SOYF associates should be encouraged to publish more in academic journals, as well as make their work known to older adults and caregivers in other media outlets. The great potential that SOYF has to reduce the rate of falls and the substantial associated health costs is likely watered down by smaller and fragmented adaptations. Furthermore, very few of the adaptations of SOYF have specifically aimed to increase access of falls prevention strategies amongst neglected populations (e.g. Aboriginal or disadvantaged communities), which should be seen as an important priority. Almost two decade after the original SOYF program was conceived, it remains clear that a collaborative and intensive falls effort is the most effective direction for falls prevention. In this enormous undertaking, an integrated and multi-strategic framework, on the statewide, provincial and national level, is necessary.

7. References

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