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Older Adults' Perceptions Towards Falls and Fall Prevention in Kuwait - A Qualitative Study

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Abstract

Objectives: Despite global guidelines and evidence, fall prevention services in Kuwait are limited. This study sought to understand older people's perspectives towards falls and falls prevention within the context of limited fall prevention services. **Methods**: Qualitative interviews explored the perceptions of falls and fall prevention among Kuwaiti older people (50+ years) and their caregivers (N=16). **Results**: Falls prevention was an unfamiliar issue; participants' knowledge of falls came from personal and others' experiences, which motivated individuals to eliminate what they perceived as risk factors, but gaps in understanding remained (theme 1). Older people were found to have positive attitudes towards preventing falls, and beliefs around fate and autonomy towards falls prevention were found to independently co-exist (theme 2). Attitudes towards falls prevention were shaped by simplified understanding and concerns about falling (theme 3). Social networks were important in older people's lives, and valuable sources of support and influence were identified (theme 4). A new concept of 'circular care benefits' was developed, contributing an understanding that caring for others helps build subjective norms. **Conclusions**: The interview findings contribute to the Theory of Planned Behaviour in the context of falls prevention, with further contribution to the understanding of co-existing beliefs and 'subjective norms'.

Keywords: Fall prevention, Older adults, Perception of falls, Theory of planned behaviour

Introduction

Globally, one in every three older adults sustains at least one fall per year, and fatal falls are determined to be the second leading cause of accidental deaths worldwide[1]. There is an increasing global interest in falls and a growing body of evidence-based practice on falls prevention interventions for older populations[2]. Several substantial research studies have investigated the implementation of effective falls prevention interventions that have guided the establishment and implementation of well-designed strategies widely used in western countries. However, it is important to consider regional contexts of falls and their risk factors to provide the best support and care for older adults in a particular region[3-5].

Personal, cultural, and religious beliefs might be the main influence on a person's perspectives when considering health-related issues. Researchers also agree that cultural values along with individual beliefs influence how people are likely to perceive an increased falls risk, as well as which changes they are prepared to make to reduce risk[3-6]. The perceptions of falls, fall risk status, and falls prevention may vary among different countries, cultures, and regions[7,8]. Furthermore, the perceptions of older persons' caregivers play an important role in constructing older individuals' falls risks and thus their ability to prevent falls[9]. Therefore, the success of a well-designed intervention is highly dependent on the older person accepting being at risk in the first place, and then adhering to the proposed intervention.

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Pseudonym	Age	Gender	Level of Education	Marital Status	History of Falls	Lifestyle based on RAPA[a]
(P1) Sarah	95	F	Non-educated	Widow	Yes	Sedentary
(P2) Shareefa	65	F	Primary	Married to P3	Yes	Sedentary
(P3) Ahmad	65	M	Primary	Married to P2	No	Physically active
(P4) Nora	57	F	Secondary	Married P5	Yes	Sedentary
(P5) Soud	67	M	Secondary	Married P4	Yes	Sedentary
(P6) Zain	67	F	Secondary	Married P7	Yes	Sedentary
(P7) Sulaiman	76	M	Secondary & training	Married P6	No	Sedentary
(P8) Jassim	82	M	Secondary	Widow	Yes	Sedentary
(P9) Yousef	70	M	High school	Widow	No	Physically active
(P10) Munera	70	F	Diploma	Widow	Yes	Sedentary
(P11) Joud	62	F	Bachelor's Degree	Married P12	Yes	Sedentary
(P12) Khaled	72	M	Diploma	Married P11	No	Sedentary
(P13) Hessa	75	F	Bachelor's Degree	Widow	Yes	Sedentary

Note. M = Male; F = Female. [a] RAPA: Rapid Assessment of Physical Activity. Sedentary is defined as rarely or never doing any physical activity; Physically active is defined as doing 30 minutes or more a day of moderate physical activity, 5 or more days a week or 20 minutes or more a day of vigorous physical activity, 3 or more days a week.

Table 1. Characteristics of participating older adults.

Participant pseudonym	Relationship to The Older Person	Caregiving Category	Age	Level of Education
(C1) Sofia	House worker to P10	Paid caregiver	36	Secondary
(C2) Aminah	Daughter-in-law of P1	Socially assigned	62	Diploma
(C3) Ala'a	Daughter of P13	Socially assigned	36	Master

Table 2. Characteristics of participating caregivers.

Kuwait is one of the Eastern Mediterranean countries in the Arabian Peninsula in which people aged 65 and over comprise 3.4% of its total population with a life expectancy at birth of 81.5 years[1,10]. Kuwait upholds a unique combination of culture, traditional norms, and religious beliefs that could affect Kuwaitis' perceptions and views of falls. Yet, fall prevention services in Kuwait are lacking. There are no studies addressing these issues in Kuwait, and very little information about falls is currently documented in the Gulf Cooperation Council (GCC) countries. Before any evidence-based falls prevention programme can be effectively developed and adopted, an understanding of the unique contributors to the perceptions of falls among older adults in Kuwait is needed.

This study aimed to explore the perceptions of older people and their caregivers to contribute regional evidence and data that are currently missing. Specifically, the objective was to undertake semi-structured interviews to explore perspectives towards falls and fall prevention and investigate the cultural factors, knowledge, beliefs, attitudes, and current behaviours contributing towards potential falls risk, the acceptance of falls risk, and prevention; within the absence of fall prevention management.

Materials and Methods

Semi-structured, one-to-one, qualitative interviews were used to explore the perceptions and experiences of older people and their caregivers in Kuwait. Thirteen community-dwelling older people took part in this study (Table 1). Three caregivers were nominated by the older people and interviewed in this study (Table 2). Two of the nominated caregivers were considered 'socially assigned'

caregivers, and one was a paid caregiver with 6 years of working experience with the older person under her care. The diversity within the sample was assured through expanding the recruitment strategies to include clinical settings, publicly accessible locations, and social events. Interested individuals were invited to participate if they were aged 50 (Kuwait's common retirement age) or above, male or female, and able to communicate verbally. The decision to include this age range was based on local retirement norms[11] and the desire to capture a diverse set of perspectives. Epidemiological studies in Kuwait indicate a rapid increase in the incidence of fractures[12] and hip fracture[13] after the age of 50; individuals within this age bracket commonly rely on domestic workers as well as family for care and support[14] and lead more sedentary lifestyles[15]. Whilst we acknowledge that perspectives may vary between people transitioning into older adulthood to when they are much older, for this preliminary study we wished to remain open to a broad range of perspectives and develop themes across this age-range. Participants who agreed to participate in the study contacted the first author and arranged a day/time for the interview to be held at the participants preferred venue (all chose their own homes). All participants provided written informed consent prior to participation.

Interviews

The first author conducted one-to-one semi-structured interviews with the participants using an interview guide (supplementary material), between January 2018 and September 2018. Older participants were asked to identify the person who provided him or her with the majority of care throughout the day and the nominated person was invited to be interviewed accordingly. While one participant (C2, care giver of P1) met the criteria for inclusion as an "older person," the focus of their contribution to the study was primarily on their role and experiences as a caregiver, rather than as a recipient of care. Interview questions focused on evaluating knowledge about fall risk factors (using the WHO risk factor model; 16), and participants' understanding and their self-determined behaviour towards preventing falls. The home environment in which interviews took place was also used as a prompt during the interviews to help inform discussions around participants' knowledge and understanding. Data emerging from the first interview were used to expand or target topics in the subsequent interviews. These interviews were conducted in Arabic with all the participants. The interviews were audio-recorded and transcribed verbatim, before using a cross-cultural validation translation method (i.e. translation to English, and back-translation) to ensure the accuracy of the translation prior to data analysis. Three older people and one caregiver checked and approved the accuracy of their transcripts.

Data analysis

Data-driven inductive thematic analysis using a reflexive approach was used[17]. The data analysis followed the six phases described by Terry et al.[17] starting with data familiarisation, open coding process, theme development, reviewing and defining the themes and producing the findings. A sample from one transcript was independently coded by all co-authors, who met to discuss the analytical process and corroborate the first author's approach; The remaining transcripts were all coded by the first author. To enhance rigour in the analytical process the two co-authors contributed by peer assessing the initial data coding and theme development (acting as critical friends) and the first author continued to write reflective memos of impressions, thoughts, and ideas. These memos were written intensively in the first phase of analysis and informed the subsequent phases. NVivo 12 (2018) was used to facilitate data analysis. Co-authors were involved through discussions and peer review throughout the analysis and write-up phases to challenge the first author's assumptions, question potential inconsistencies, and discuss the developing interpretations.

Reflexivity

The lead author undertook this research as a female, Muslim, Kuwaiti citizen in her early thirties with five years of experience as a physiotherapist at Al-Razi Orthopaedic Hospital. She adopted a constructivist epistemological position, drawing on her professional experience of working with older individuals who had sustained falls, and their varied responses to rehabilitation, in an effort to understand the participants' experiences through their own lenses, to enhance fall prevention efforts. Being a healthcare professional and 'insider researcher' as a Kuwaiti citizen facilitated the researcher's ability to empathise and build rapport with participants, however this also posed a potential risk that participants might have tailored their responses to align with what they perceived to be socially desirable expectations. To mitigate this issue, participants were reassured of the confidential nature of their data, and efforts were made to ensure a conducive environment, establish rapport with participants by starting interviews with general questions about their social lives, fostering trust and openness, and asking probing questions. Although gender segregation is not a strict rule in Kuwaiti culture, as males normally talk to females in everyday life, it does create potential for reticence and not being at ease. In order to avoid this and ensure that the participants felt comfortable during the interview, male participants were asked if they preferred that the interview were held within the presence of their wife or daughter (female person), and this was found to be sufficient solution to overcoming the problem.

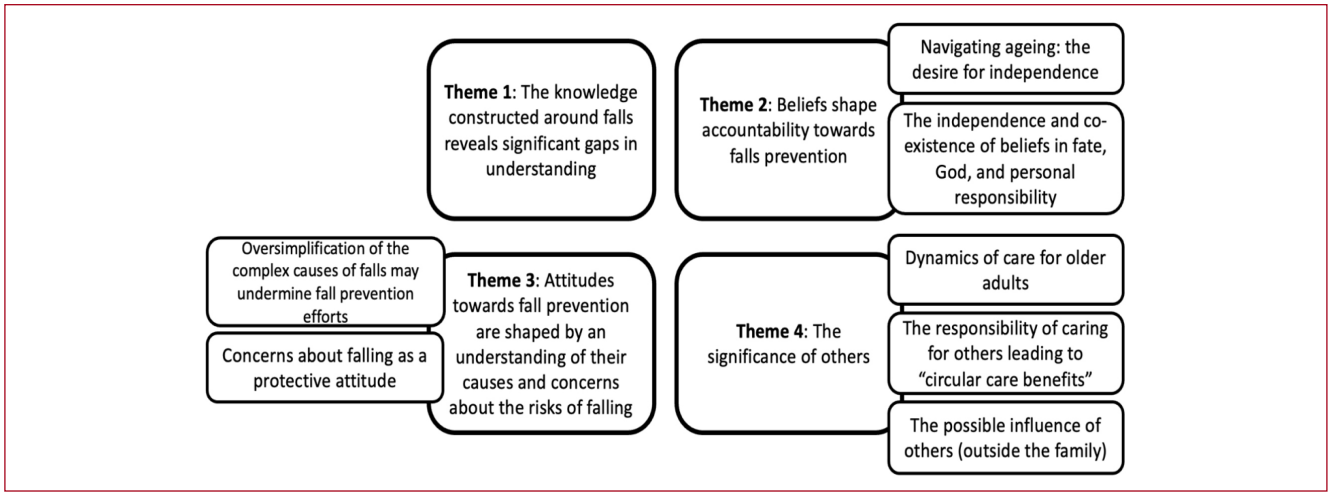

Figure 1. Overview of themes and sub-themes.

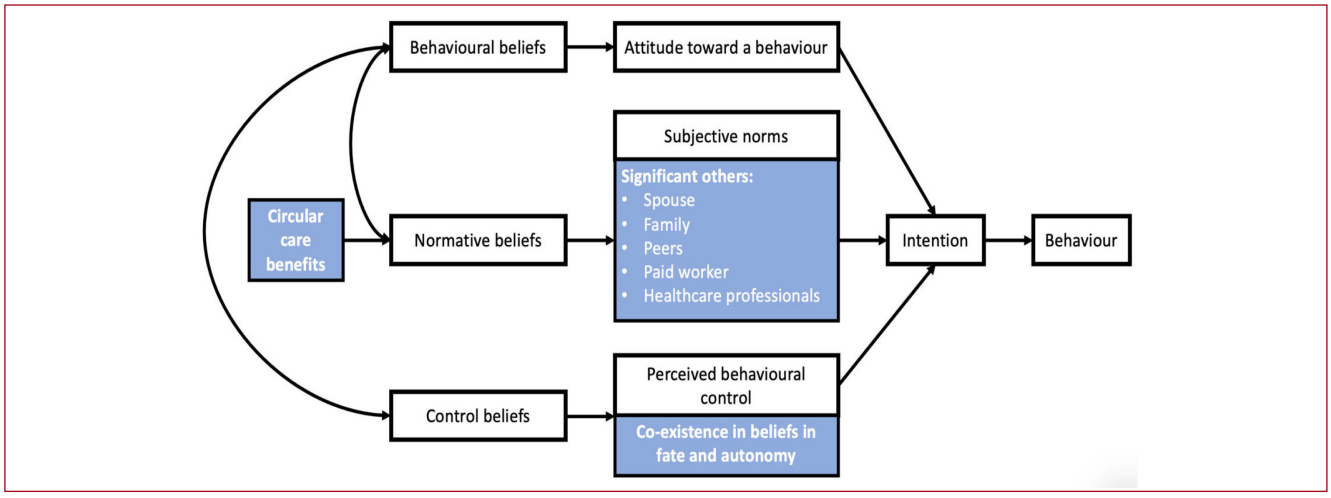

Figure 2. Graphical representation of the Theory of Planned Behaviour with the new contributions from the present research shown in the shaded blue boxes.

Results

Older participants had a mean age of 71 years (range 57-95 years). Nine of the thirteen participants reported to have had a fall in the last 12 months. The findings of this research demonstrate the perceptions of falls and falls prevention within the absence of formal fall prevention management in the Kuwaiti context. The findings are constituted by four main themes: (1) The knowledge constructed around falls reveals significant gaps in understanding; (2) Beliefs shape accountability towards falls prevention; (3) Attitudes towards falls prevention are shaped by an understanding of their causes and concerns about the risks of falling; and (4) Significance of others; and related subthemes (Figure 1). The next section will present these themes with pseudonymised quotes.

Theme 1: The knowledge constructed around falls reveals significant gaps in understanding

Older people's knowledge of falls was shaped by their experiences as well as the experiences of others. They did recognise some of the reasons and consequences of falls after they had experienced a fall, enhancing their understanding of the falls risk factors. Besides,

the experiences of other people (especially those with similar abilities) highly influenced the perceptions of the participants. For example, Shareefa spoke of her own co-morbidities as risk factors for a fall: "The weight of the person and the gait abnormality could cause a fall." (Shareefa, 65, female); and Zain drew upon the risk factor she attributed her falls experience to: "For me, having [an] even surface is the most important thing for me." (Zain, 67, female).

Furthermore, the sample population also had the common perception that experiencing a fall is an alert to start acting to prevent further falls.

So we do learn after the fall, I might underestimate the situation. This is human nature. As long as we have good health and have no problem, have relatively good health, mentally well, [I] will probably not consider the changes. After the fall we will consider the changes.
(Sulaiman, 76, male).

The constructed falls-related knowledge and understanding enabled the older people to identify some of their own potential risk factors. Because of this, they had an active role in their evaluation of risk and knew what could cause them to fall. They considered individual coping strategies to overcome perceived risk factors for falls. Identifying the causes of falls positively influenced their behaviour and thus enabled them to work towards reducing the perceived causes of falls.

I always pay attention to the type of footwear I use. I take care and be aware, and be slow, and I don't walk in a rush, and be cautious so [as] not to fall.
(Ahmad, 65, male).

I have shortened my (abayaa), my dresses, and sometimes wear trousers under the dress [annotation: wearing a long full body cover is required by Islamic dress code].
(Zain, 67, female)

As much as falls-related knowledge influenced understanding, the gaps in that knowledge had an influence too. For example, none of the participants knew that engaging with physical activities could reduce their susceptibility of falling.

Interviewer: Do you think that physical activity as a lifestyle could affect the susceptibility to falling?
Aminah: Not really. (Aminah, 62, the caregiver of Sarah)
Sulaiman: No, its not related (to fall). The physical activity could control my diabetes, could improve my fitness, reduce my weight. (Sulaiman, 76, male)

Theme 2: Beliefs shape accountability towards falls prevention

This theme captures older people's belief systems towards falls, which were highly connected with regional, cultural, and religious perspectives.

Sub-theme: Navigating ageing: the desire for independence

The participants believed there was a stigma towards ageing in which older age was seen to represent a stage of frailty towards the end of life. Many of the participants did not consider themselves to be an "older person" as they perceived the older person to be a frail person who was at risk of falling, and saw themselves as younger than this stage, regardless of their age.

I don't think that we reached the physical disability stage, like being elderly. At that stage I should be changing, putting [in an] elevator, or having a personal carer, etc., but now I don't see that I need it.
(Soud, 67, male)

For now, my house is clear and I don't see any need, only the stairs – but we still have the strength to ascend, but with ageing I'm not sure.
(Sulaiman, 76, male)

They expressed that falling or being at risk of falling in old age is connected with a loss of power and control over their lives. Therefore, they presented themselves as autonomous and not liking to receive guidance from others, and distanced themselves from being at risk of falling:

Till now I consider myself to be [an] active, independent, healthy person. I drive, I walk normally, I don't fall, there is no restriction in my life, there is no reason for me to fall.
(Yousef, 70, male)

The participants valued the importance of being independent. They saw themselves as independent, active in their lives, and able to live without assistance. The older participants in this study were anxious about increasing dependence in life and wished to conserve life-long independence.

For the meanwhile, yes [being independent], and I hope it will be so for the whole of my life.
(Ahmad, 65, male)

Well, I would say may God help me not to need any help.
(Sulaiman, 76, male)

Sub-theme: The independence and co-existence of beliefs in fate, God, and personal responsibility

The majority of the participants believed that falls are fated (as a will of God) and a fall cannot be prevented if it is meant to be. This idea could have been formed in part by their religious beliefs in fate and destiny. Despite this religious belief, the participants believed in their individual responsibility for it too. They felt fully in control and responsible for their health and health-related conditions.

I helped myself by being cautious. If I have any problem, like a medical problem, I avoid it with medication and treatment. I take care and see my way,
(Sulaiman, 76, male)

Most of the participants were willing to apply changes to prevent themselves from falling, even among the persons who believed that falls are a non-preventable event:

Interviewer: Do you think that you can prevent yourself from falling?

Joud: No, God only could protect us. No matter how much you protect yourself from falling, whatever is fated will happen. I can prepare my environment and avoid the causes and try to do as much as I can, but it's eventually the will of God. (Joud, 62, female)

Theme 3: Attitudes towards falls prevention are shaped by an understanding of their causes and concerns about the risks of falling

This theme explores how individuals' attitudes towards preventing falls were shaped by the causes they attributed falls to, and the concept of concerns about falling.

Sub-theme: Oversimplification of the complex causes of falls may undermine fall prevention efforts

Previous themes have indicated that individuals had positive attitudes towards preventive measures that were congruent with their knowledge and beliefs about what causes them to fall (outlined in Theme 1). This could be demonstrated for example by their behaviour to eliminate what they perceived as falls causes, maintaining independence and a healthy life.

However, during the interviews that were held at the participants' homes, the interviewer identified at least one environmental hazard existing for every participant. A few participants knew these hazards existed and might cause them to fall (or had already caused a fall) but they did not consider the environment to be the main problem in need of modification (even when pointing out an existing hazard), rather they attributed the reasons for their falls to internal factors (such as being in a rush, having a busy state of mind) or fate. Most of them relied on their environmental familiarity to reduce the seriousness of these hazards.

You must have had your brain somewhere, not concentrating on your way. That doesn't mean that the rug is the problem. I mean we should be careful and aware, and the rest is on God.
(Khaled, 72, male)

No, why would it? If I arrange my home and know where I put everything, how would I trip from it? That's not reasonable.
(Nora, 57, female)

By simplifying the potentially complex causes of falls, for example to single key issue (such as not concentrating), participants subsequently appeared to disregard wider contributory factors.

Sub-theme: Concerns about falling as a protective attitude

Around half of the participants perceived that a fall could result in a fear of further falls:

No, he will never fear unless he has a fall, because we have shaken our brain, fall over, and slipped till we had this way to prevent falls.
(Joud, 62, female)

However, most of the participants admitted that they feared falling, even if they did not have a history of falls. They saw concerns about falling as a natural phenomenon that increased as they aged, and for most this concern was probably about fearing the injury incurred by a fall:

Everybody is afraid of falling, if he or she falls and gets hurt, or gets fractured, and the fracture of the older men or women is difficult, they might take time to be healed and sometimes the fracture does not heal, so the human should always take care about the slips or falls.
(Ahmad, 65, male)

Most of the participants saw these concerns about falls as a positive attitude resulting in people being more careful not to fall again. They considered concerns about falling as a precautionary action.

Yes, he might take extra care, if God made him survive once, he should be more careful in the next time.
(Hessa, 75, female)

Theme 4: The significance of others

The Kuwaiti culture substantially emphasises the importance of social life. This theme describes the social pressure and the significance of others on older peoples' perceptions. The dynamics of care for older adults via familial care will be discussed, followed by the conceptualisation of 'circular care benefits'. The final sub-theme provides an exploration of the possible influence of people outside the family structure.

Sub-theme: The dynamics of care for older adults

The cultural perspectives on the importance of family resulted in the presence of an extended family structure for all of the participants. Older people expected their children to provide them with care, as it stemmed from cultural and religious beliefs of familial care. Many of the participants accepted their children's care and followed their suggestions and modifications that aimed to create a safer life:

There is some kind of footwear especially made that might help the person prevent falls. My daughter brought me a specially designed sport shoe.
(Yousef, 70, male)

However, the participants indicated that any kind of care was refused when the recipient was feeling a sense of threat to their personal identity.

I'd like to encourage my mother to change some of her behaviour towards falls, but the problem is that she didn't accept to change what she used to do for a long time, and the age and personality makes her more likely [of] not accepting that she is getting older and weaker.
(Ala'a, 36, caregiver of Hessa)

Sub-theme: The responsibility of caring for others leading to "circular care benefits"

Through the analysis, we developed the idea that older adults' perceptions were shaped by the acts of caring for somebody, and being cared for; being both the 'recipient' and 'giver' of care were equally valid influencers on peoples' perceptions and behaviours. This led to the conceptualisation of "circular care benefits", which refers to the reciprocal nature of caregiving relationships, where the act of providing care yields benefits not only for the care recipient but also for the caregiver. This concept suggests that caregiving is not a one-sided endeavor; instead, caregivers may experience rewards that reinforce their own fall prevention activities.

An example of how these care dynamics led to circular care benefits is provided in the quote from Joud below. During this interview, the participant shared her experiences of caregiving for her children and how this role prompted her to reflect on her own well-being and health (applying carpet for herself). As she actively engaged in nurturing and supporting her children, she began to recognize the importance of modeling healthy behaviors not only for their sake but for her own as well.

My husband has raised an idea of putting [down] carpets. We used to have small rugs all over the house, [but] then it caused many slips for my children when they ran, so I replaced them with big rugs to cover the whole floor just like the carpets, but applied fitted carpets in my room only.
(Joud, 62, female)

Some of the older participants were caregivers for their parents in the past. They felt the experience of working towards preventing falls in older people under their care made them think of ways to prevent themselves from falling as they age. The influence of caring for somebody, which gave participants the responsibility to ensure the safety of this person under their care, had the secondary effect of ensuring their own safety as well. They were more accepting of being at risk and accepting of the changes without feeling the stigma of ageing.

First my mum used to live with me in this house. She didn't have clear causes of fall, but she did have many falls, so we applied this equipment for her firstly and then applied it to ourselves.
(Joud, 62, female)

Sub-theme: The possible influence of others (outside the family)

This sub-theme describes the possible influence of people outside the family structure. Peers were found to have a positive influence on older people's knowledge as seen in the first theme. Some of the participants highlighted the effect of a health specialist's opinion on their behaviour; This was mostly related to trusting the opinion and advice of the specialised person and hearing from them.

The person couldn't insist on his point of view. If you could convince me, I might do it. I do take the information from the people with knowledge and experience but I see my needs as well. I usually get convinced, though.
(Soud, 67, male)

Discussion

These findings provide a deeper insight into the understanding of falls and falls prevention through the lens of older people and their carers living in Kuwait. In order to better understand the findings, results will be interpreted within the Theory of Planned Behaviour (TPB) extended by Nyman[18]. The TPB suggests that people's intentions to perform certain behaviours would be influenced by (a) their attitudes, (b) the subjective norms (i.e., social pressure), and (c) Perceived Behavioural Control (PBC) over their ability to carry out the behaviour. Nyman posited additional constructs to the TPB[18], which were found to correspond with our findings: Knowledge and "self-identity" are argued to be important influencers and pre-requisites of behavioural change.

Influence of knowledge on perception of falls and falls prevention

The findings revealed that falls prevention was an unfamiliar issue in Kuwait and older people gained their falls-related knowledge basically through personal experience and the experience of others, constructing a relatively good understanding of the possible potential causes and consequences of falls. The perceived falls-related knowledge that participants did hold guided them in their individualised efforts to prevent falls, such as addressing their health, changing footwear, using walking aids, etc. This confirms the significant contribution of knowledge on intention and behaviour of the older participants, aligned to Nyman's[18] proposition that knowledge is an important influencer and prerequisite of behavioural change.

Conversely, the lack of appropriate knowledge about falls prevention among the studied population may greatly affect their engagement in falls prevention behaviours. A major gap that existed in participants' knowledge about the effectiveness of physical activity to reduce falls risk could have an integral role in their being physically inactive, especially because the older population in this study had good intentions to manage falls.

Influence of beliefs on perceptions

The participants had beliefs in the stigmatisation of older age in terms of its association with frailty. This could, along with the unawareness of falls risk factors before experiencing a fall, act as barrier to preventing falls. Similar to previous research[6,19,20], the older people in this study perceived falls to be a threat to their autonomy. Their beliefs about ageing identified the fall as leading to a decrease in their independence and self-control, resulting

in their perception of being a burden on family[4,6,21]. This undesired vulnerability status made them try to distance themselves from being labelled as fallers and so not accept the concept of themselves being older adults at risk of falling. This could be further supported by their keenness to maintain their autonomy status, which could be threatened by being dependent[22]. This resulted in the rejection of behavioural changes that threatened self-identity (i.e. giving them the sense of being "frail" or a "faller"). This finding supports Nyman's extension to TPB[18], which posited that self-identity is an important influencer and prerequisite of behavioural change; our study shows this appears to apply even if the change in behaviour is part of culturally desirable care (such as care from their children). Conserving self-identity appears to be defined by: firstly, maintaining good control and independence, and secondly rejecting any identified threat to autonomy.

The participants demonstrated a high-level self-competence in maintaining their health, which aligned to their belief that individuals are responsible for their own health. The optimistic intention to maintain healthy ageing was similar to findings found elsewhere[23,24]. As seen in previous research findings[20,24-26], the desire to preserve health could promote the successful application of health preventive methods. Thus, beliefs about personal responsibility for health and well-being, the described desire to preserve their self-identity, and beliefs about ageing, are key constructs around which we should build falls-prevention recommendations. In addition, participants' health orientation and thirst for knowledge on ways to preserve health could also be an indicator of readiness to change behaviour with the aim of staying healthy and fit.

The older participants' attempts to conserve their health were not hindered by their personal beliefs in the will of God and health predeterminations. The participants believed that "falls are fated", an attitude which has also been documented elsewhere[4,25], which has been argued to contribute to older people's perceptions of not being vulnerable to falls and also thought to influence engagement with falls prevention[18,20,25]. However, based on this study, the contentment about fate and the destiny of falls does not necessarily induce a low perceived risk but enables older people to feel assured that they are going to fall when they are meant to, potentially causing a reduction in maladaptive falls concerns[27]; the relationship between beliefs in falls being fated and maladaptive concerns about falling would be worthy of further quantitative research. Based on these findings, we propose the potential for people's beliefs in their autonomy to prevent falls and their beliefs in fate and God's will to independently co-exist. Yet it is essential to consider the potential for a more complex relationship where these beliefs might inversely affect each other, and acknowledge that this conceptualisation of the role that fate and destiny beliefs play in falls prevention is a new contribution to the literature that needs to be supported by further research.

Influence of attitudes on perceptions of falls and falls prevention

Similar to previous findings[19,28], participants in this study tended to self-evaluate their situation and find their own strategies to prevent falls. It could be argued that this individualised effort to personally identify and rectify causal factors of falls (e.g., attending to clothing, changing footwear, being more cautious and alert, etc.) would enhance a person's Perceived Behavioural Control (PBC) over their tendency to fall[18]. Subsequently, they might enhance their sense of control over their conditions and risk status, which was also stated in the review by McInnes[6]. This PBC might enhance the older people's self-management whilst decreasing their feeling of powerlessness.

The enhanced PBC (control beliefs) could explain why participants in the present study perceived concerns about falling to be a positive attitude towards preventing falls. Adaptive concerns about falling, coupled with the high PBC (falls efficacy) and previously discussed reduced maladaptive fall concerns (originating from the co-existence of beliefs in fate and autonomy) could be a healthy, protective combination of characteristics to help people take actions to avoid future falls. This illustrates the connection between attitudes and PBC in influencing intentions and behaviours. Thus, the older people in this study did not choose to restrict their movement because of concerns about falling, unlike other studies have suggested[29-32]. Instead, concerns about falling may help people to be more cautious in risky situations (e.g., by using the hand rails and paying close attention to their surroundings). This conclusion supports the conceptualised approach of understanding the adaptive and maladaptive facets of fear of falling elucidated by Adamczewska and Nyman[33].

Participants predominantly expressed an internal locus of control over their risk, which may also have negatively affected their attitudes towards preventing falls. Participants perceived that they could modify their falls risk, yet in doing so they tended to overlook the possibility of modifying environmental risk factors, relying instead on environmental familiarity. For this reason, they tended to attribute their falls to internal, temporal reasons (being distracted, hurrying and not paying attention) whenever a fall happened, rather than, for example, considering the uneven step or loose rug to also be a concomitant problem.

Influence of 'subjective norms' on the perception of falls and falls prevention

The findings indicated that the normative beliefs, stemming from the cultural reverence awarded to social life, provides a firm base of subjective norms for understanding the Kuwaiti older people's perspectives (Figure 2). The presence of social support (information leading to the belief

that an older person is cared for and loved) would legitimise the acceptance of influence from the person who provides this social support, as found elsewhere[34,35].

Under the definition of social support, five types of social support providers were identified and found to have an effect on older people's perceptions in the present research: (1) spouse; (2) paid worker; (3) peers; (4) healthcare professionals; and (5) family. Although subjective norms have been argued to be a weak predictor of behavioural change[36], this may be disproved if more focus is given to identifying the person influencing or generating the subjective norms, and the societal context in which this takes place.

Children and family were found to have an added advantage to influence older people's perceptions and behaviour. The older people's families were keen to provide informal care for their parents as a family obligation of parental care, which was found to be favourable and directly influence older people's behaviour toward preventing falls. The familial social support and parental care was found to be a two-way interaction, to provide care and love from children to parents and vice versa. This mutual exchange of care is related to the values stemming from cultural norms and is limited to some cultures and not in others[37]. In such cultures, providing care could have a stronger influence on the person than receiving it. For example, in a similar culture of Iran, Zanjari and his colloquies[34] found that providing social support was strongly correlated with higher well-being among older people; more so than receiving it. Similarly, our study found that doing something for the benefit of others (e.g., modifying the environment for the benefit of young children or older people under their care) may also serve to overcome the stigma associated with ageing and personal falls risk, highlighting the interconnections between subjective norms and attitudes towards behaviour. This new concept was named 'circular care benefits', which identifies the understanding that caring for others contributes toward building people's subjective norms. By actively participating in care, individuals not only reinforce their own sense of agency but also contribute to a community narrative that values the role of older adults as caregivers rather than merely recipients of care. As individuals engage in caregiving, they create a framework of mutual support and shared responsibility, which influences how they perceive their own ageing and risks associated with falls.

The notion of circular care benefits enriches the Theory of Planned Behavior (TPB) by introducing a novel pathway through which subjective norms can evolve. It suggests that these norms are not only shaped by external societal influences but also by the reciprocal nature of caregiving relationships. As older adults provide care, they not only contribute to the well-being of others but also reinforce their own beliefs about ageing, health, and community involvement. This reciprocal dynamic may lead to more proactive attitudes and behaviours regarding fall prevention, ultimately enhancing the overall quality of life for older individuals.

However, the significant effect of others on older people's perceptions and behaviour could be disempowering if that influence is outweighed by a threat to personal beliefs. The findings showed that the care from grown-up children for their parents was perceived favourably if it did not threaten the older person's identity by triggering the stigmatisation of ageing. The caregivers' priority was to physically control the falls risk, whilst older people prioritised their autonomy, which created a conflict of interests and stimulated refusal among some older adults to accept fall prevention measures. This conflict of interest has been found to be a barrier to participating in falls prevention elsewhere[6,7].

Conclusion

The current research is the first to explore the perceptions of falls and falls prevention among an older Kuwaiti population, which is a context with limited formal falls prevention management. The study highlighted the issues that arose concerning older adults and their caregivers. The findings confirmed the existence of falls as a problem and that the older people's primary concern was to preserve their health and independence; beliefs around fate and autonomy towards falls prevention were found to independently co-exist. We hypothesise that co-existing beliefs around fate and autonomy may contribute towards the reduction of maladaptive concerns about falling and/or the development of adaptive concerns about falling. The findings further provided a unique understanding of the possible contribution that '*circular care benefits*' make to the development of 'subjective norms', which provides an extension to the existing Theory of Planned Behaviour. Future research should explore whether these theoretical contributions transfer into a more global context to help reduce the prevalence of falls worldwide.

Ethics approval

Ethical approval was obtained from the Faculty of Science Research Ethics Committee at the University of Portsmouth (SFEC2017-024). Further governance approval was granted by the Standing Committee for the Coordination of Health and Medical Research of the Ministry of Health in Kuwait (442/2016).

Consent to participate

All participants provided written informed consent prior to enrolment in the study.

Authors' Contributions

HA, is the corresponding author, construct the conceptualization of the research, preformed the data collection, analysis and interpretation and was a major contributor in writing the manuscript. AD contributed to the

conceptualization of research, independently contributed to the data analysis, review and provided feedback and edits to the manuscript. JU independently contributed to the data analysis, review and provided feedback to the manuscripts. All authors read and approved the final manuscript.

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Supplementary material.

English version of the interview guide

Incidence and perception of falls, fall prevention among Kuwaiti older population.
A: Individual interview questions (with older adults)

Participant number:
Time of interview:
Gender:
Date:
Venue:

Verbal explanation of project and process: YES/NO
Written information given: YES/NO
Consent form: YES/NO
- Briefly describe the project again before starting the interview:

"I would just like to go over the project and what we will be doing today again with you, before we start the interview. The study is looking at what people think about falls in older people and the approaches that are used to help prevent falls. I am interested to hear your experiences and opinions about the what you think fall is, what could cause a fall. I am also interested to hear what you think about what are the approaches that you have used or have experience of. If there are any questions you do not want to answer you do not have to. I would like to stress that there are no right or wrong answers and I am really interested to hear about your experience and opinions. I will audio record the interview so that I can remember all that has been said. I would also like to remind you that the contents of your interview will be kept confidential and that you are free to withdraw at any time. If at any time you wish to stop the interview you may either ask me to stop the tape or you may stop it yourself. Do you have any questions before we begin?"

- Test record equipment and break the ice with the interviewee.

"Just before be begin I would like to check the recording equipment, if I press record now, we can each say what our favourite colour is and then listen to see if it worked ...(RECORD) ... My favourite colour is ... what is yours?" Then rewind the tape and listen to the voices.

- Check that the interviewee is ready to start the interview.

The following is a brief overview of the topic areas to be considered. It is likely that the content of the interview schedule will develop and may incorporate other areas as the researcher reflects upon each interview as it takes place. It is also likely that the order in which the topics are addressed may change according to the flow of the interview.

The prompts/explore sections in italics will be raised only if not covered spontaneously by participants.

A: Individual interview questions (with older adults)

1. To begin, may I please ask a few details about you and other members in the family who usually live in this household?

Serial number	Name	Age	Gender	Marital status	Relationship to the head of the household person	Highest level of education	Occupation
1Name of the head of the household							
2							
3							
4							
5							
6							

Who is the person that provides you with the majority of care that you need?

Perception of fall

1. What do you consider to be a fall?
2. Do you think falls are preventable? *How might falls be preventable? What could help stop you from falling?*
3. Who do you think is at greater risk of falling (prompts: elderly, people with health problems, women/men, big/small body weight) ? Why are they more likely to fall? *Who do you think is more susceptible to falling: men or women? Why?*
4. Can you tell me what you think might cause a fall?
   (Prompts: home environment, footwear, walking aid, vision, physical activity)
5. Do you think other factors could contribute to someone's risk of falling?
   (Prompts: mental status, fear of falling, cultural beliefs, neglecting the issue). How might those factors contribute to his/her risk of falling?
6. Do you think a person's physical activity level and daily exercise can have an effect on his/her risk for a fall? Why do you think this could be?
7. What do you think are the consequences of a fall? *Do you think that the person who sustain a fall might be affected by his/ her fall? why? How?*
8. What could worsen the consequences of a fall? *Is there something someone could do to minimize the consequences of a fall? If the older person has had a fall, what do you think might lead to less serious fall or more serious fall? Why?*
9. Have you ever tried to do something to prevent yourself from falling? *(Prompts: environmental changes, footwear, walking aid, eye check, physical activity)*
10. Have you ever had to change your living arrangements due to a fall?
11. What would encourage or support you in doing something to prevent falls? *(Prompts: flyers showing the causes and consequences of falls, an explanation fall prevention procedures, a 'do's and don'ts' list of ways to prevent falls, hearing from someone with experience of falls/falls prevention)*
12. what sorts of things would you be prepared to do, if it meant you'd be less likely to fall?
13. Are there things you wouldn't be prepared or able to do, in order to prevent a fall? Why?
14. If doing more exercise could help protect you from falling, how would you feel about doing some more regular exercise? Are there any things that might make doing this more or less appealing? (e.g. group exercise, type of exercise, frequency, location, time of day, belief that it works, type of instructions/help, knowledge)
15. How would you feel about making changes to your home environment to try and make falls/injuries less likely? Is there anything that might make you less likely to make changes to your home (e.g. other people's opinions/stigma, dislike of certain pieces of equipment (not feeling homely), cost, space).
16. If having some medication would make your fall more likely, are you willing to change these medications?
17. How do you feel about changing some of your behaviour if you know that these behaviours would increase your susceptibility of falls?

18. What might inhibit you from doing something to protect yourself from a fall? *Do you have the ability to prevent yourself from falling? Why? (Prompts: needing help, lack of knowledge of possible ways to prevent a fall, do not want to change your home environment, do not want to show weakness or seek help)*
19. what do you think are the healthcare systems barriers to fall prevention? *What do you need from the healthcare system? How do you think we as health professional could help in preventing older people from falling?*
20. Is there anything else you think is important about falls that I should know about

- Have you fallen in the last year? Can you tell me about it?
- If you have fallen, what happened after? *Did you have to go to hospital or the doctor?*
- If you fall, how frequently do you fall?

- Stop the tape
- Thank the participant for their help:

'Thank you for your participation in this interview. It has been interesting to hear about your experiences with falls and fall prevention. Your contribution will be very helpful to the project. I will now create a written version of our interview. I can send this to you to see if there are any parts you would like to change; if you would like a copy, please let me know. In the meantime, if you have any questions please feel free to ask me. Thanks again for your help.'

B: Interview questions (with the caregivers [socially assigned caregiver; daughter; son; stepdaughter; grandchildren; etc.] of older adults)

Participant number:
Gender:
Time of interview:
Date:
Venue:

Verbal explanation of project and process: YES/NO
Written information given: YES/NO
Consent form: YES/NO
- Briefly describe the project again before starting the interview:

"I would just like to go over the project and what we will be doing today again with you, before we start the interview. The study is looking at what people think about falls in older people and the approaches that are used to help prevent falls. I am interested to hear your experiences and opinions about the what you think fall is, what could cause a fall. I am also interested to hear what you think about what are the approaches that you have used to prevent fall for the older person that you care for. If there are any questions you do not want to answer you do not have to. I would like to stress that there are no right or wrong answers and I am really interested to hear about your experience and opinions. I will audio record the interview so that I can remember all that has been said. I would also like to remind you that the contents of your interview will be kept confidential and that you are free to withdraw at any time. If at any time you wish to stop the interview you may either ask me to stop the tape or you may stop it yourself. Do you have any questions before we begin?"

- Test record equipment and break the ice with the interviewee.

"Just before be begin I would like to check the recording equipment, if I press record now, we can each say what our favourite colour is and then listen to see if it worked …(RECORD) … My favourite colour is … what is yours?" Then rewind the tape and listen to the voices.

- Check that the interviewee is ready to start the interview.

The following is a brief overview of the topic areas to be considered. It is likely that the content of the interview schedule will develop and may incorporate other areas as the researcher reflects upon each interview as it takes place. It is also likely that the order in which the topics are addressed may change according to the flow of the interview
The prompts/explore sections in italics will be raised only if not covered spontaneously by participants.

1. Let's start with a quick overview. Can you tell me about yourself?
   - Your name
   - Your age
   - Your relationship to the older person?
   - Do you work? How long do you work per day?
   - Level of education
   - Do you live with the older person?
   - If not, how often you visit him/her?
2. Are you responsible for the decision making in all care-providing issues for…Mr/Mrs/Ms……?
3. What type of care do you provide to him/her?
4. Do you take him/her to the hospital if needed? How often? Do you provide them with help and assistant if needed? Please specify.
5. If you are busy, is there anyone in the family available to take care of Mr/Mrs? MS…….?
6. Do you feel you are providing him/her with the care that they need?
   Ok, now I'd like to ask you some more questions about falls:
7. Has the older adult you care for fallen in the last year? How often does he/she fall?
8. What was the consequence of that fall?
9. What do you consider to be a fall? (prompts: minor, medium and major)
10. Do you think that falls are preventable? *How do you think that falls might be prevented?*
11. Can you tell me what you think might cause a fall in older people?
    (Prompts: home environment, footwear, walking aid, vision, physical activity)
12. Do you think the older person you care for is at risk of falling? *Why?*
13. Do you know who is at risk of falling? Why are they more likely to fall?
14. Do you think this person would accept being at risk of falling? Why is that?
15. Do you think other factors can contribute to someone's risk of falling? How might those factors contribute to their risk
    of falling? *(Prompts: mental status, fear of falling, cultural beliefs, neglecting the issue)*
16. Do you think that a person's physical activity level and daily exercise could have an effect on their risk of falling?
17. What would you say are the consequences of a fall? *Do you think that the person who sustain a fall might be affected by his/ her fall? why? How?*
18. What do you think could worsen the consequences of a fall?
    Is there something a person could do to minimise the consequences of a fall? If the older person has had a fall, what do you think might lead to less serious fall or more serious fall? Why?
19. Have you tried to do something to help prevent the older adult whom you care for from falling?
    (Prompts: environmental changes, footwear, walking aid, eye vision test, encourage him/her to participate in physical activity)
20. What would encourage or support you in doing something to prevent the older person you care for from falling?
    (Prompts: flyers describing the causes and consequences of falls, explanation of fall prevention procedures, a 'do's and
    don'ts' list of ways to prevent falls)
21. What sorts of things would you be prepared to do, if it meant the older person be less likely to fall?
22. Are there things you wouldn't be prepared or able to do, in order to prevent a fall? Why?
23. If doing more exercise could help protect the older person from falling, how would you feel about encouraging the older
    person to do some more regular exercise? Are there any things that might make doing this more or less appealing? (e.g. group exercise, type of exercise, frequency, location, time of day, belief that it works, type of instructions/help, knowledge)
24. How would you feel about making changes to your home environment to try and make falls/injuries less likely? Is there anything that might make you less likely to make changes to your home (e.g. other people's opinions/stigma, dislike of certain pieces of equipment (not feeling homely), cost, space).
25. If having some medication would make your fall more likely, are you welling to change these medications?
26. How do you feel about encouraging the older person to change some of his/her behavior if you know that these behaviors would increase his/her susceptibility of falls?
27. What might stop you from doing something to prevent a fall?

- Stop the tape
- Thank the participant for their help:
'Thank you for your participation in this interview. It has been interesting to hear about your experiences with falls and fall prevention. Your contribution will be very helpful to the project. I will now create a written version of our interview. I can send this to you to see if there are any parts you would like to change; if you would like a copy, please let me know. In the meantime, if you have any questions please feel free to ask me. Thanks again for your help.'

C: Interview questions (with the caregivers [paid caregiver; paid worker; paid nurse; etc.] of older adults)

Participant number:
Gender:
Time of interview:
Date:
Venue:

Verbal explanation of project and process: YES/NO
Written information given: YES/NO
Consent form: YES/NO
- Briefly describe the project again before starting the interview:

"I would just like to go over the project and what we will be doing today again with you, before we start the interview. The study is looking at what people think about falls in older people and the approaches that are used to help prevent falls. I am interested to hear your experiences and opinions about the what you think fall is, what could cause a fall. I am also interested to hear what you think about what are the approaches that you have used to prevent fall for the older person that you care for. If there are any questions you do not want to answer you do not have to. I would like to stress that there are no right or wrong answers and I am really interested to hear about your experience and opinions. I will audio record the interview so that I can remember all that has been said. I would also like to remind you that the contents of your interview will be kept confidential and that you are free to withdraw at any time. If at any time you wish to stop the interview you may either ask me to stop the tape or you may stop it yourself. Do you have any questions before we begin?"

- Test record equipment and break the ice with the interviewee.

"Just before be begin I would like to check the recording equipment, if I press record now, we can each say what our favourite colour is and then listen to see if it worked ...(RECORD) ... My favourite colour is ... what is yours?" Then rewind the tape and listen to the voices.

- Check that the interviewee is ready to start the interview.

The following is a brief overview of the topic areas to be considered. It is likely that the content of the interview schedule will develop and may incorporate other areas as the researcher reflects upon each interview as it takes place. It is also likely that the order in which the topics are addressed may change according to the flow of the interview.

The prompts/explore sections in italics will be raised only if not covered spontaneously by participants.

1. Let's start with a quick overview. Can you tell me about yourself?
   - Your name
   - Gender
   - Your relationship to the older person
   - Education level
   - How long have you worked with an older person? Do you have other responsibilities?
   - When did you start this job?
   - Do you live with an older person?
   - If not, how often you visit them?
2. Are you responsible for the decision making in all care-providing issues for this older person? How?

3. What type of care do you provide the older person? Do you take (him/her) to the hospital if needed? How often? Do you provide them with help and assistance if needed? Please specify.
4. If you are busy, is there is somebody else available to take care of the older person?
5. Do you feel that you are providing the older person with the care that they need?
6. Are you paid enough for this type of work?
7. Was this job described to you before you came? *Does it match the job you currently perform?*
8. Have you received any training about caring elderly?
9. What training do you think you need to perform your job better as a carer of an older person?

Ok, now I'd like to ask you some more questions about falls:

10. Has the older adult you care for fallen in the last year? How often does he/she fall?
11. What was the consequences of this fall?
12. What do you consider to be a fall?
13. Do you think falls are preventable? *How do you think falls might be prevented?*
14. Can you tell me what you think might cause a fall in older people? *(Prompts: home environment, footwear, walking aid, vision, physical activity)*
15. Do you think the older person that you care for is at risk of falling? *Why?*
16. Do you know who is at risk of falling? Why are they more likely to fall?
17. Do you think they accept being at risk of falling?
18. Do you think other factors can contribute to someone's risk of falling? How might those factors contribute to his/her risk of falling? *(Prompts: mental status, fear of falling, cultural beliefs, neglecting the issue)*
19. Do you think that a person's physical activity level and daily exercise could have an effect on their risk of falling?
20. What do you think are the consequences of a fall?
21. What do you think could worsen the consequences of a fall? *Is there something a person could do to minimise the consequences of a fall?*
22. Have you tried to do something to help prevent the older adult you care for from falling? *(Prompts: environmental changes, footwear, walking aid, eye vision test, encourage them to participate in physical activity)*
23. What would encourage or support you to do something to prevent the older person you care for from falling? *(Prompts: flyers describing the causes and consequences of falls, explanation of fall prevention procedures, a 'do's and don'ts' list of ways to prevent falls)*
24. What sorts of things would you be prepared to do, if it meant the older person be less likely to fall?
25. Are there things you wouldn't be prepared or able to do, in order to prevent a fall? Why?
26. If doing more exercise could help protect the older person from falling, how would you feel about encouraging the older person to do some more regular exercise? Are there any things that might make doing this more or less appealing? (e.g. group exercise, type of exercise, frequency, location, time of day, belief that it works, type of instructions/help, knowledge)
27. How would you feel about making changes to your home environment to try and make falls/injuries less likely? Is there anything that might make you less likely to make changes to your home (e.g. other people's opinions/stigma, dislike of certain pieces of equipment (not feeling homely), cost, space).
28. If having some medication would make your fall more likely, are you welling to change these medications?
29. How do you feel about encouraging the older person to change some of his/her behavior if you know that these behaviors would increase his/her susceptibility of falls?
30. What might stop you from doing something to prevent a fall? *(Prompts: needing help, lack of knowledge of possible ways to prevent a fall, do not want to change the home environment, do not care about preventing falls)*
31. Are you given the right to offer your suggestions or do what you think is needed to prevent a fall?
32. Is there anything else you think is important about falls that I should know about?
33. Problems and issues that you face while caring him that might influence falls /her? Explain

- Stop the tape
- Thank the participant for their help:

'Thank you for your participation in this interview. It has been interesting to hear about your experiences with falls and fall prevention. Your contribution will be very helpful to the project. I will now create a written version of our interview. I can send this to you to see if there are any parts you would like to change; if you would like a copy, please let me know. In the meantime, if you have any questions please feel free to ask me. Thanks again for your help.'