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ARTICLE

The Impact of Driving Cessation on Older Kuwaiti Adults: Implications to Occupational Therapy

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ABSTRACT. Older adults consider driving as a fundamental part of their identity and independence. In most western countries, driving cessation has been recognized as a major issue affecting their health and well-being. This study aimed to compare older Kuwaiti adults who were active drivers and those who had ceased driving, and to explore the impact of driving cessation on the psychological well-being and lifestyle of older ex-drivers. Participants included 114 community-dwelling older adults aged 55 years and older. A questionnaire based on the driving rehabilitation literature was administered along with the Geriatric Depression Scale (GDS). Results indicated that active drivers did not place greater importance on driving and spend more time in leisure pursuits. The overarching feelings following driving cessation were loss of control over one's life and an increased sense of dependency. Driving cessation also contributed to a reduced ability to perform family duties, and it was associated with giving up previously performed leisure activities. Our findings indicate that driving cessation adversely affects older adults' independence and role performance. Older ex-drivers may require assistance and intervention to facilitate their psychological well-being and community participation.

KEYWORDS. Community participation, depressive symptoms, life satisfaction, meaning of driving, older drivers

INTRODUCTION

For older adults, driving has become associated with maintaining independence, feelings of self-worth, and being connected to the community. Although driving is an occupation that is valued in its own right, perhaps its greater value is that it enables participation in other community-based occupations. In many cultures, driving is regarded as vital for accessing necessary community resources and essential for freedom and independence (Liddle et al., 2012). Driving as a means of community mobility is considered an instrumental activity of daily living (IADL),

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and thus lies under the domain and scope of occupational therapy. Thus, it is an important occupation that should be addressed in both occupational therapy evaluation and intervention (American Occupational Therapy Association (AOTA), 2008; Dickerson et al., 2008, 2010, 2011; Justiss, 2013; Stav et al., 2005). In addition, driving is perceived as a dynamic occupation which facilitates participation in other related daily activities including education, work, leisure, and social participation (Stav & Lieberman, 2008).

In industrialized Western society, the ability to drive represents an important function of daily adult life that is associated with autonomy and social capability (Windsor et al., 2007). For many older adults, remaining an active driver is important for maintaining independence and well-being. According to a United States epidemiological study (Nationwide Personal Transportation Survey (NPTS), 2009), older women cease driving before older men. According to the NPTS study by age 85, only 25% of older women still held a driver's license, whereas 55% of older men still held a driver's license. However, for each incremental 5 year age span, beginning with age 60, women and men restricted the annual miles they drove (Burkhardt et al., 1996). Not surprisingly, driving was rated as the second most important IADL by older community dwelling adults in Australia, behind using the telephone and ahead of reading, medication management, and leisure (Fricke & Unsworth, 2001). Based on this literature, it was hypothesized that compared to ex-drivers, active older drivers would place greater importance on driving, have greater life satisfaction, control over their lives, greater time out of the home and pursuing leisure, and have fewer depressive symptoms.

REVIEW OF THE LITERATURE

Meaning of Driving for Older Adults

Several studies have been conducted to investigate the meaning of driving for older adults, and the results have consistently shown that driving means much more than getting from point A to point B (Adler & Rottunda, 2006; Donorfio et al., 2009; Rudman et al. (2006). It also represents independence, freedom, and being connected to society and life. Even though older adults do not drive as much as they once did and sometimes only when necessary, driving forms a part of their personal identity and keeps them connected to what is meaningful to them. Driving and being able to continue to drive contribute to feelings of self-worth and self-reliance (Donorfio et al., 2009).

Rudman et al., (2006) also found that older adults described driving as a means to maintain control over, and spontaneity in, daily life and activities. They viewed driving as an indicator of independence and well-being and cessation of driving as an indicator of dependence and decline in general health. Additionally, driving has been described as synonymous with self-respect, social membership and quality of life for older drivers as well as part of their identity (Burkhardt et al., 1996).

Consequences of Driving Cessation

The outcomes of driving cessation have been investigated in both qualitative and quantitative studies, and driving cessation has been recognized as affecting health

and well-being of older adults. Driving cessation is thought to involve a dual loss: Loss of a role with inherent value as well as a loss of community access (Liddle et al., 2006).

In qualitative studies, ex-drivers reported that nondriving had restricted their lives and described giving up driving as discouraging, feeling deprived, and losing independence and spontaneity (Adler & Rottunda, 2006; Rudman et al., 2006). Despite the reason for cessation of driving, a loss of independence was the overarching feeling once the decision was made and many participants reported that not driving limited their lives and freedom (Adler & Rottunda, 2006). In another study, older adults indicated that stopping driving resulted in a significant threat to their self-concept and led to a reduction in feelings of control over one's life (Windsor et al., 2007).

Several quantitative studies documented that driving cessation was strongly associated with decreased out-of-home activity levels where ex-drivers spent less time on social leisure and away from home, and more time in solitary leisure compared to current drivers (Liddle et al., 2006; Morottoli et al., 2000). Moreover, ex-drivers had significantly lower life satisfaction, fewer present roles, and diminished participation in their family roles and Community-based roles (Liddle et al., 2006; Liddle et al., 2012). Furthermore, longitudinal studies investigating the consequences of driving cessation also found it was accompanied by significant declines in physical and social functioning among older adults. General health also declined more rapidly after driving cessation (Edwards et al., 2009). Changes in driving patterns, specifically driving cessation and reduction, were also associated with increased risk of worsening depressive symptoms (Fonda et al., 2001; Fricke & Unsworth, 2001; Windsor et al., 2007). Surprisingly, another longitudinal study showed that older adults who ceased driving were four to six times more likely to die over the subsequent 3 years (Edwards et al., 2009). Although it is not clear whether cessation of driving facilitates declines in health and well-being or if declining health is the reason to cease driving, the findings do support that the ability to drive is important for health and well-being among older adults. Giving up driving is a difficult emotional issue for many older adults and may be accompanied by increased social isolation, increased depressive symptoms, decreased community engagement, loss of personal independence, decreased sense of control and precipitous health declines.

Although the previous studies were conducted in Western countries such as the United States of America, Australia and Canada, similar findings were reported in studies from India (Beyene et al., 2012) and Singapore (Krishnasamy et al., 2013). Although the study in India focused on assistive technology use for mobility among several categories of individuals, including seniors who had ceased driving, seniors reported cessation of driving was usually related to safety concerns, lack of comfort with driving, and for most, the decision was personal. The Singapore study explored mobility preference and difficulties with transportation among healthy and outpatient older adult samples. Because of the availability of public transportation, most of the subjects were nondrivers, however, of those who did drive, 19% of them reported driving less in recent years because of declines in driving capabilities. In both studies, because of greater needs for health care, the frequency of senior's need for transportation was increasing at the same time that barriers to driving or using public transportation were encountered.

The values and meanings that we attach to daily activities differ according to the beliefs and norms of different cultures. The experience of driving cessation can also differ depending on socioeconomic status, resources and alternative transportation available to older adults. In Western countries, many older adults live alone and the motor vehicle is the main means of private transportation (Stav, 2008). Driving cessation literature in Western countries has identified lack of accessible transport networks for ex-drivers as a primary negative influence on driving cessation.

Kuwait is markedly different from the United States, Australia, Canada, India, and Singapore, where previous studies have been conducted, in terms of smaller geographical space for travel, feasibility of hiring private drivers, and strong family bonds. To illustrate, older adults usually live within their extended families and all younger family members are responsible for caring after the older family members, including their community mobility needs. However, little is known about the meaning that Kuwaiti older adults have for driving and the consequences of driving cessation on their independence, health and well-being and social participation. Therefore, the purpose of this study was to compare older Kuwaiti adults who were active drivers and those who had ceased driving on (1) demographics, health status, importance of driving, priority of driving, importance of remaining an independent driver, degree of life satisfaction, degree of control over life and daily activities, amount of time spent out of the home, on leisure activities, and in social activities, and number of depressive symptoms, and (2) to investigate the impact of driving cessation on the psychological well-being and lifestyle of older ex-drivers. We hypothesized that compared to ex-drivers, active older drivers would place greater importance on driving, have greater life satisfaction, control over their lives, greater time out of the home and pursuing leisure, and have fewer depressive symptoms.

METHOD

Participants

The targeted population was community-dwelling older adults aged 55 years and older. The inclusion criteria were being Kuwaiti, and being a current driver or an ex-driver. Convenience sampling was done by recruiting relatives of students studying at Kuwait University and older adults in public Cafés, Dewaniahs (e.g., home gathering areas for friends and family members, both indoors and outdoors), mosques, and malls. Research team members regularly visited the public sites to recruit participants. Prior to implementing the study, ethical approval was obtained from the committee for the protection of human subjects in research of the health science center at Kuwait University. Prior to signing a consent form or beginning data collection, the purpose of the study was explained to potential participants.

Measures

The questionnaire used in this study was in Arabic, and developed by a faculty member/student research team from the Kuwait University Occupational Therapy Department, using the literature as a guide. The questionnaire included the following sections:

- **Demographic characteristics:** Age, gender, marital status, education, employment, economic status, and co-resident status.
- **Health and life style:** Participants rated their health status on a 5-point Likert scale (0 = excellent, 1 = very good, 2 = good, 3 = fair, 4 = poor), and identified number of current health conditions. Lifestyle related items included the numbers of hours spent out of the home, number of hours spent in leisure activities, and number of hours spent in social activities.
- **Importance of driving:** Using Likert Scales (0 = highly important, 1 = important, 2 = somewhat important, 3 = not important, 4 = not important at all), participants were asked to rate the importance of driving. Participants were also asked whether they considered driving to be a priority activity, and whether remaining independent in driving was important to them.
- **Perceived control and life satisfaction:** Using Likert scales (0 = totally agree, 1 = agree, 2 = somewhat agree, 3 = disagree, 4 = totally disagree), participants were asked whether they feel in control over their lives and their overall satisfaction with their lives (0 = totally satisfied, 1 = satisfied, 2 = somewhat satisfied, 3 = not satisfied, 4 = not satisfied at all).
- **Depressive symptoms:** The Arabic version of the 15-item Geriatric Depression Scale (GDS-15) was used to assess depressive symptoms among participants of both groups. This version of the GDS-15 was internally consistent (Cronbach's alpha = 0.88), and kappas ranged from 0.57 to 0.75. (Chaaya et al., 2008).
- **Meaning of driving:** Participants were asked to describe what driving and the ability to drive independently meant to them by checking any or all of the following options, or adding to them: (a) a means of transportation, (b) a symbol of freedom and autonomy, (c) a symbol of independence, (d) a symbol of maintaining control and spontaneity over performance of daily activities, (e) an assist in engaging in various social activities, (f) a symbol of community participation, (g) a symbol of depending on oneself, and (h) other options you can add.
- **Driving cessation:** Some questions were specifically designed for ex-drivers, and focused on reasons and circumstances surrounding driving cessation, how difficult was it to stop driving, psychological impact of driving cessation, and impact of driving cessation on lifestyle.

Design

A two group comparison design using convenience sampling was employed. It allowed us to compare active drivers and ex-drivers in terms of life satisfaction, control over their lives, activity allocation, and depressive symptoms.

Procedure

The questionnaires were piloted on 20 older adults to ensure the clarity of the questions and were revised based on their feedback. Study participants provided written informed consent before participating in the study. They were given the questionnaire in an envelope and were asked to seal it when they finished to ensure the confidentiality of their answers. Participants took around 20 minutes to fill out the questionnaires.

Data Analysis

Data were analyzed using SPSS (version 17). Participants were assigned to groups depending on their driving status (0 = driver, 1 = ex-driver). Mann-Whitney *U*, chi-square, and independent *t*-tests were used as appropriate to compare differences between the two groups, and frequencies were used to describe remaining variables. Bonferroni adjustments were done for clusters of data analyzed together (e.g., demographics, impact of driving cessation). An alpha of $p < .05$ was chosen, and the Mann-Whitney *U* Bonferroni correction for demographics was $p < .012$ ($.05/4 = .012$), for importance of driving was $p < .017$ ($.05/3 = .017$), and for impact of driving cessation was $p < .010$ ($.05/5 = .010$).

RESULTS

A total of 250 potential participants were approached, and a response rate of 45.6% ($n = 114$) was achieved, with 71 active drivers (62.2%) and 43 ex-drivers (37.7%), 60 males (52.6%), and 54 females (47.4%). Significant differences in demographics between the two groups were found only for educational level and number of health conditions, with ex-drivers having a significantly lower level of education ($n = 25$, 58.1% having less than a high school education) and reporting significantly more health conditions (ex-drivers = mean of 2.67 conditions; active drivers = mean of 1.80 conditions) (see Table 1). Although active drivers ranked the importance and priority placed on driving and remaining an independent driver higher than ex-drivers, the differences were not statistically significant (see Table 2). Likewise, although active drivers spent more time on leisure pursuits, the difference between active and ex-drivers was not statistically significant. However, ex-drivers reported significantly lower life satisfaction, control over their lives and daily activities, time out of the home, and time spent in social activities. Ex-drivers also reported significantly more depressive symptoms than active drivers (see Table 2).

The percent of those making the decision for the older adults (ex drivers) to cease driving included: Self (ex-drivers ($n = 27$; 60.5%), their physicians ($n = 13$; 30.2%), and family members ($n = 4$; 9.3%). Primary reasons for ceasing to drive were vision problems ($n = 18$; 41.9%), feeling it was no longer safe to drive ($n = 14$; 32.6%), other health problems ($n = 14$; 32.6%) and not feeling comfortable driving anymore ($n = 11$; 25.6%). Approximately, 70% of ex-drivers found it difficult to stop driving.

The symbolic meaning of driving took various forms for ex-drivers, with the ability to maintain control and spontaneity over daily activities, dependence on oneself, and autonomy and freedom cited most often. Driving as only a "means of transportation" was cited by only 2 ex-drivers (see Table 3). Cessation of driving also impacted the psychological well-being and lifestyles of ex-drivers. Psychological impacts cited most often were less control over one's life, being dependent, and being a burden to others. Lifestyle impacts cited most frequently were spending more time at home, giving up previous leisure activities, and spending less time with friends (see Table 3). When asked whether a driver rehabilitation program was a good idea, 83.7% ($n = 36$) agreed that it was, however, only 65.1% ($n = 28$) thought that was a probability that they would attend such a program.

TABLE 1. Demographic Characteristics of the Participants

Characteristics	Active Drivers (n = 71) (n, %)	Ex-drivers (n = 43) (n, %)	Statistic	Significance
Gender				
Male	39 (54.9)	21 (48.8)	0.32 ^a	.574
Female	32 (45.1)	22 (51.2)	(df = 1)	
Age range				
(55–65)	53 (74.64)	26 (60.5)		
(66–75)	15 (21.12)	12 (27.9)	1156.00 ^b	.023
(76–80)	1 (1.42)	5 (11.6)	(z = -2.27)	
(≥ 81)	2 (2.82)	0 (0)		
Marital status				
Married	61 (85.9)	31 (72.1)		
Widowed	8 (11.3)	11 (25.6)	3.95 ^a	.139
Divorced	2 (2.8)	0 (2.3)	(df = 2)	
Education				
< high school	21 (29.6)	25 (58.1)		
High school,	14 (19.7)	7 (16.3)		
Diploma,	18 (25.4)	8 (18.6)	988.00 ^b	< .05*
Bachelor	11 (15.5)	2 (4.7)	(z = -3.22)	
Graduate	7 (9.8)	1 (2.3)		
Employment				
Employed	15 (21.1)	2 (4.7)		
Business	6 (8.5)	2 (4.7)	10.67 ^a	.014
Retired	41 (57.7)	25 (58.1)	(df = 3)	
Housewife	9 (12.7)	14 (32.5)		
Economic status				
Excellent	20 (28.2)	10 (23.3)		
Very good	26 (36.6)	14 (32.6)		
Good	15 (21.1)	13 (30.2)	1402.50	.450
Average	9 (12.7)	6 (13.9)	(z = -0.76)	
Poor	1 (1.4)	0 (0)		
Living with				
Others	0 (0)	1 (2.3)		
Nuclear family	46 (64.8)	24 (55.8)	7.81 ^a	.252
Extended family	21 (29.6)	17 (39.6)	(df = 3)	
Lives alone	4 (5.6)	1 (2.3)		
Health status				
Excellent	6 (8.5)	3 (7.0)		
Very good	29 (40.8)	12 (27.9)		
Good	23 (32.4)	15 (34.9)	1262.00 ^b	.11
Fair	9 (12.7)	9 (20.9)	(z = -1.62)	
Poor	4 (5.6)	4 (9.3)		
Health conditions				
Mean number	1.80	2.67	-2.84	.01**
(SD)	(1.47)	(1.64)	(df = 81)	

^aChi-square; ^bMann-Whitney U; ^cindependent t-test; * $p < .05$ with Bonferroni correction; ** $p < .01$; SD = Standard Deviation.

DISCUSSION

This study sought to compare a sample of older Kuwaiti active and ex-drivers. It also aimed to investigate the impact of driving cessation on the psychological well-being and lifestyle of the ex-drivers. It was hypothesized that compared to ex-drivers, active older drivers would place greater importance on driving, have

TABLE 2. Comparison of Driving Importance, Activity Allocation, and Depressive Symptoms of Drivers and Ex-Drivers

Characteristics	Active Drivers	Ex-drivers	Statistic	Significance
	(<i>n</i> = 71) mean rank	(<i>n</i> = 43) mean rank		
Driving is important in my life [#]	53.18	64.64	1219.50 ^a (<i>z</i> = -2.08)	.038
Driving is still a priority activity in my life [#]	52.64	65.52	1181.50 ^a (<i>z</i> = -2.20)	.028
Remaining an independent driver is important [#]	54.63	60.86	1339.00 ^a (<i>z</i> = -1.12)	.265
Degree of life satisfaction [#]	50.06	69.79	998.00 (<i>z</i> = -3.36)	<.05*
Degree of control over life and daily activities [#]	49.07	71.42	928.00 ^a (<i>z</i> = -3.67)	<.05*
Amount of time spent out of the home ^{##}	65.38	39.35	754.00 ^a (<i>z</i> = -4.24)	<.05*
Amount of time spent on leisure activities ^{##}	61.73	50.52	1226.50 ^a (<i>z</i> = -2.37)	.018
Amount of time spent in social activities ^{##}	65.87	43.69	932.50 ^a (<i>z</i> = -3.93)	<.05*
Number of depressive symptoms	4.09	6.85	-2.75 ^b (<i>df</i> = 83)	<.01**

[#]Likert scale: 0 = Strongly agree, 1 = Agree, 2 = Somewhat agree, 3 = Disagree, 4 = Totally disagree.

^{##}Likert scale: 0 = (1-2 hours), 1 = (3-4 hours), 2 = (5-6 hours), 3 = (6-7 hours), 4 = (8 or more hours).

^aMann-Whitney U; **p* < .05 with Bonferroni Correction; ^bIndependent *t*-test; ***p* < .01.

greater life satisfaction, control over their lives, greater time out of the home and pursuing leisure, and have fewer depressive symptoms. Our hypothesis that active drivers would place greater importance on driving than ex-drivers was not supported, nor was our hypothesis that active drivers would spend more time in leisure pursuits. Because ex-drivers reported numerous impairments that contributed to their cessation of driving, and that they were the primary decision makers for their driving cessation, we believed that active drivers would place significantly greater importance on driving than ex-drivers, but this was not the case. All other hypotheses were supported, indicating that driving cessation has negative consequences for older adults' psychological well-being and lifestyles.

Our findings are compatible with previous research studies conducted in Western countries by affirming the value of driving as an invaluable daily occupation and emphasizing the associated circumstances of its cessation (Adler & Rottunda, 2006; Bukhard et al., 1996; Donorfio et al., 2009; Edwards et al., 2009; Fricke & Unsworth, 2001; Liddle et al., 2006; Liddle et al., 2012; Morottoli et al., 2000; Rudman et al., 2006; Windsor et al., 2007). Similar findings were also reported in two Eastern studies (Beyene et al., 2012; Krishnasamy et al., 2013).

For Kuwaiti older adults, driving cessation had some negative consequences. For example, not only did driving cessation involve losing the ability to perform a meaningful activity, but it also involved a transition to a more sedentary lifestyle with reduced ability to participate in previously performed social and leisure activities. Ex-drivers also reported significantly more depressive symptoms and significantly lower life satisfaction than their active driving counterparts. Also, the transition from driver to ex-driver brought about changes in their lifestyle and identity, such as the loss of the ability to perform life roles and family duties. Most importantly, when asked about the impact of their driving cessation, the majority of ex-drivers associated driving cessation with less control over their lives, a sense of dependency and being a burden on others, all of which could attribute to a negative self-image, which can further increase depressive symptoms.

TABLE 3. Importance and Meaning of Driving and the Effects of Driving Cessation Among a Sample of Kuwaiti Older Adult Ex-Drivers

Focus	n (%)
<i>Importance of driving</i>	
Driving is important in my life	40 (93.0)
Remaining an independent driver is important to me	39 (90.7)
Driving is still a priority activity in my life	38 (88.4)
<i>Reasons for cessation of driving</i>	
Vision	18 (41.9)
Did not feel safe; danger to self/others	14 (32.6)
Medical condition	14 (32.6)
Not comfortable and anxious	11 (25.6)
Accidents	4 (9.3)
Almost had an accident	3 (7.0)
Found it difficult to stop driving	30 (69.8)
<i>Meaning of driving</i>	
Symbol of maintaining control and spontaneity over daily life activities	36 (83.7)
Symbol of dependence on oneself	34 (79.1)
Symbol of freedom and autonomy	32 (74.4)
Symbol of community participation	23 (53.5)
An assist for engaging in various social activities	21 (48.8)
Means of transportation	2 (4.7)
<i>Impact of driving cessation on psychological well-being</i>	
Less control over one's life	33 (76.7)
More dependent	32 (74.4)
Being a burden on others	25 (58.1)
Feelings of isolation	13 (30.2)
Decreased self-esteem	11 (25.6)
More comfortable	6 (14.0)
<i>Impact of driving cessation on lifestyle</i>	
Spend more time at home	37 (86.0)
Gave up previous leisure activities	34 (79.1)
Spend less time with friends	23 (53.5)
Perform fewer family duties	22 (51.2)
Difficulty obtaining transportation	11 (25.6)
<i>Driver rehabilitation</i>	
Agree with the need for a driver rehabilitation program	36 (83.7)
Probability of my attending a driver rehabilitation program	28 (65.1)

Several factors reported by ex-drivers could have contributed to the significantly greater number of depressive symptoms than the active drivers. Ex-drivers reported significantly fewer hours of socialization and hours out of the home, as well as feelings of isolation. Liddle et al. (2012) also found that lack of out of home activity negatively affected psychological well-being in older adults. Hence, the decreased number of hours spent in leisure and social activities for the Kuwaiti older adult ex-drivers could explain the depressive symptoms they experienced. In addition, Windsor et al. (2007) found that factors that reduce people's feelings of control over their lives may also contribute to depressive symptoms and dissatisfaction with their lives.

In summary, our findings are congruent with prior research conducted in Western and Eastern countries that found that driving is important for maintaining health and well-being in older adults and that its cessation adversely affects

psychological well-being and lifestyle choices. When you consider the ease of hiring a driver in this Middle Eastern country and the acceptability of being driven by a hired driver, this might be considered surprising.

STUDY LIMITATIONS

Although our study had several limitations, our findings support the need for driver rehabilitation in Kuwait. The first limitation of the study is that no test-retest reliability was conducted with the questionnaire and that the validity of the questionnaire was only based on the literature. Second, the convenience sampling used limits the generalizability of the study findings. The third limitation relates to the limited number of ex-drivers and the lack of control for possible confounding variables, such as health related factors between the two groups. Fourth, although the questionnaire items were developed by reviewing literature on driving studies, having a team member with expertise in driving rehabilitation would have helped in developing the questionnaire. Based on the study findings, we would recommend a longitudinal design with a larger sample size and more comprehensive outcome measures. Additionally, a qualitative study could provide a deeper understanding about the nature of driving as an important phenomenon for older adults at risk of driving cessation (Patton, 2002). Therefore, a mixed methods research design is highly recommended to grasp a broader and more holistic view of issues and concerns facing Kuwaiti older adults at risk of driving cessation.

IMPLICATIONS FOR OCCUPATIONAL THERAPY

The implications of our findings are consistent with previous research studies which indicate that driving is a valid IADL for maintaining older adults' psychological well-being and lifestyles. The vast majority of our ex-drivers reported that driving was important in their lives, was still a priority activity, and that remaining independent drivers was important to them. The majority of them also found it difficult to stop driving, yet the majority also were the ones who decided to stop driving, albeit primarily for health reasons. Although our ex-drivers were in favor of driver rehabilitation programs in principle, fewer respondents claimed that they would participate in such a program, indicating the need to educate those at risk of driving cessation of the options available to them.

Occupational therapists are uniquely prepared to establish a driving rehabilitation program in Kuwait that involves the assessment and rehabilitation of older drivers' performance. This can be achieved with increased collaborative efforts with countries that already have established driving rehabilitation programs. With an increasing aging population, Kuwaiti occupational therapists have a mandate to collaborate with established driver rehabilitation programs and discern which aspects of the programs would be appropriate for Kuwait.

Occupational therapists can also help to identify at-risk drivers by conducting comprehensive assessments of the physical, cognitive, sensory and perceptual skills needed for safe driving as well as behind-the-wheel or driving simulator testing. Occupational therapists working in Kuwait can further play a significant role in fitness-to-drive decisions by adapting and modifying standardized assessments, such as

Occupational Therapy Driver Off-Road Assessment Battery, which could be used to determine off-road driving capacity of older drivers above a certain age before driver license renewals. Additionally, they can also develop intervention strategies that focus on assisting older adults to drive safely for a longer time. The Car-Fit program (www.car-fit.org) might be another strategy for education of safety measures. Fortunately, recent attempts to enhance and prolong older adults' driving mobility through physical and cognitive interventions have been successful in enhancing on-road performance and maintaining driving mobility (Edwards et al., 2009). For instance, cognitive interventions that focus on speed of processing training is an example of an evidence-based intervention that has been shown to improve driving outcomes of older adults (Windsor & Anstey, 2006).

While driving has risks and health implications for older adults, so does driving cessation. Therefore, cessation of driving among older adults is a transition that can be addressed by occupational therapy to ensure that ex-drivers remain mobile within the community for enhanced occupational engagement. The results of this study can be used to develop a relevant driving cessation program to help older adults and their families ease the transition to nondriving status by making plans for post driving cessation. If older adults can take responsibility to actively plan for the probability of eventual driving cessation, this may help to satisfy the need for control and avoid some of the undesirable practical and emotional consequences that can result from a sudden and unexpected need to cease driving (Windsor et al., 2007).

Furthermore, occupational therapists can also help in management of role loss by ensuring acceptable transportation alternatives to driving, development of new lifestyle options and generating plans to maintain occupational engagement, social participation, and community mobility (Adler & Rottunda, 2006; Liddle et al., 2006; Marottoli et al., 2000; Windsor & Anstey, 2006). Kuwaiti occupational therapists can begin by conducting support groups for ex-drivers to share their experiences, learn new coping strategies and participate in leisure activities. Another possible implication of this study is the promotion of self-assessment tools to help older drivers identify potential problems faced in the domains of health, and driving ability, as a means of developing more effective self-regulation strategies (Windsor & Anstey, 2006).

CONCLUSION

As people age, their desire to be independently mobile in the community does not diminish. For older adults, driving remains a valued IADL. From an occupational therapy perspective, driving can be viewed as a meaningful activity by itself and as an "occupational enabler" that facilitates role performance and community participation for older adults. Overall, our findings, and those of previous studies indicate that maintaining driving mobility is essential for health, well-being, and an active lifestyle for older adults. The negative consequences of driving cessation are not always ameliorated by the availability of alternative transportation. Driving cessation is a difficult emotional issue that can negatively affect older adults' psychological wellbeing and lifestyles. Ex-drivers may require additional support for continued activity and community participation. Kuwaiti occupational therapists can play a

critical role in the identification of at-risk older adult drivers, as well as the development and delivery of driver rehabilitation programs for older adults.

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REFERENCES

- Adler G, & Rottunda S. (2006). Older adults' perspective on driving cessation. *Journal of Aging Studies, 20*, 227–235.
- American Occupational Therapy Association, (2008). Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy, 62*, 625–683.
- Beyene NM, Steinfeld A, Pearlman J, & Cooper RA. (2012). Exploration of health perceptions and assistive technology use by driving status as related to transportation independence in New Delhi, India. *Disability and Rehabilitation: Assistive Technology, 7*, 314–322.
- Burkhardt J, Berger A, & McGavock A. (1996). The mobility consequences of the reduction or cessation of driving by older women. *Proceedings of the women's travel second national conference*, Baltimore, MD.
- Chaaya M, Sibai A, Roueiheb Z, Chemaitelly H, Chahine L, Al-Amin H, et al. (2008). Validation of the Arabic version of the short Geriatric Depression Scale (GDS-15). *International Psychogeriatrics, 20*, 571–581.
- Dickerson A, Reistetter T, Parnell M, Robinson S, Stone K, & Whitley K. (2008). Standardizing the RT-2S brake reaction time tester. *Physical and Occupational Therapy in Geriatrics, 27*, 96–106.
- Dickerson A, Reistetter T, Schold-Davis E, & Monohan M. (2011). Evaluating driving as a valued instrumental activity of daily living. *American Journal of Occupational Therapy, 65*, 64–75.
- Dickerson A, Reistetter T, & Trujillo L. (2010). Using an IADL assessment to identify older adults who need a behind-the-wheel driving evaluation. *Journal of Applied Gerontology, 29*, 494–506.

- Donorfio L, Amorosio L, Coughlin J, & Mohyde M. (2009). To drive or not to drive, that isn't the question—the meaning of self-regulation among older drivers. *Journal of Safety Research, 40*, 221–226.
- Edwards J, Lunsman M, Perkins M, Rebok G, & Roth D. (2009). Driving cessation and health trajectories in older adults. *Gerontological Society of America, 64*, 1290–1295.
- Fonda S, Wallace R, & Herzog R. (2001). Changes in driving patterns and worsening depressive symptoms among older adults. *Journal of Gerontology: Social Sciences, 56B*, S343–S351.
- Fricke J, & Unsworth CA. (2001). Time use and importance of instrumental activities of daily living. *Australian Journal of Occupational Therapy, 48*, 118–131.
- Justiss M. (2013). Occupational therapy interventions to promote driving and community mobility for older adults with low vision: A systematic review. *American Journal of Occupational Therapy, 67*, 296–302.
- Krishnasamy C, Unsworth CA, & Howie L. (2013). Exploring the mobility preferences and perceived difficulties in using transport and driving with a sample of healthy and outpatient older adults in Singapore. *Australian Occupational Therapy Journal, 60*, 129–137.
- Liddle J, Gustafsson L, Bartlett H, & Mackenna K. (2012). Time use, role participation and life satisfaction of older people: Impact of driving status. *Australian Occupational Therapy Journal, 59*, 384–392.
- Liddle J, Mckenna K, & Bartlett H. (2006). Improving outcomes for older retired drivers: The UQDRIVE program. *Australian Occupational Therapy Journal, 53*, 1–4.
- Morottoli R, Mendes de Leon C, Glass T, Williams C, Cooney L, & Berkman L. (2000). Consequences of driving cessation: Decreased out-of-home activity levels. *Journal of Gerontology: Social Sciences, 55B*, S334–S340.
- Nationwide Personal Transportation System database. (2009). Research and innovative technology administration: Bureau of Transportation Statistics. Retrieved from http://www.transtats.bts.gov/Tables.asp?DB_ID=545
- Patton MQ. (2002). *Qualitative evaluation and research methods* (3rd ed.). London: Sage Publications.
- Rudman D, Fiedland J, Chipman M, & Sciortino P. (2006). Holding on and letting go: The perspective of pre-seniors and seniors on driving self-regulation in later life. *Canadian Journal of Aging, 25*(1), 65–76.
- Stav W. (2008). Review of evidence related to older adult community mobility and driver licensure policies. *American Journal of Occupational Therapy, 62*, 149–158.
- Stav W, & Lieberman D. (2008). From the desk of the editor. *American Journal of Occupational Therapy, 62*, 127–129.
- Stav W, Pierce S, Wheatley C, & Davis E. (2005). Driving and community mobility. *American Journal of Occupational Therapy, 59*, S666–S670.
- Windsor T, & Anstey K. (2006). Intervention to reduce the adverse psychosocial impact of driving cessation on older adults. *Clinical Intervention in Aging, 1*, 205–211.
- Windsor T, Anstey K, Butterworth P, Luszcz M, & Andrews G. (2007). The role of perceived control in explaining depressive symptoms associated with driving cessation in a longitudinal study. *Gerontologist, 47*, 215–223.