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Palliative Care Screening for Persons Living with Dementia in a Nursing

Home

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A Dissertation Submitted to The Graduate School at the University

of Missouri – St. Louis in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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Abstract

Problem: Dementia is rapidly increasing as the people of the world mature and life expectancy increases. As the world ages and the prevalence of dementia increases, nursing home placement will and is the most sought place for care of this population. Dementia is under recognized as a terminal illness and palliative care is underutilized for nursing home residents with advanced symptoms of dementia.

Methods: This quality improvement (QI) initiative utilized a prospective, descriptive design. The Palliative Care Screening for the Elderly tool was administered to a purposive sample of persons living with dementia residing in the nursing home. Qualitative data was collected over 12 weeks. Data collected included age, sex, race, location, dementia diagnosis, decreased oral intake, weight loss, incontinence, decreased physical activity, new or worse pressure ulcer, fall, emergency room visits, and orders for palliative care.

Results: Following the implementation of the residents screened over the course of 12 weeks, (n = 52) were eligible for palliative care orders. Eleven residents were referred to palliative care, resulting in 21.3% of residents living with dementia receiving palliative services.

Implications for Practice: Standardized utilization of the Palliative Care Screening for the Elderly tool could further identify residents at risk for deconditioning and help to initiate interventions before a severe decline occurs. The early recognition of deterioration can positively affect quality of life and reduce suffering. Additionally, the early identification of CMS quality indicators can positively affect a nursing home star rating.

Screening for Palliative Care in Persons with Dementia in Nursing Homes

Aging is a complex process involving neurobiological changes, sometimes resulting in dementia. Dementia is estimated to affect 50 million people worldwide, with a projected increase to 82 million in 2030 and 152 million by 2050 (World Health Organization [WHO], 2019). Due to the increased prevalence of dementia, the WHO recognized dementia as a social and global health priority (WHO, 2012). The Alzheimer's Association (2020) reported every 65-seconds someone is diagnosed with dementia, and an estimated 5.8 million Americans aged 65-years and older are living with Alzheimer's dementia in 2020. In the U.S., one in 10 people aged 65-years and older has Alzheimer's dementia with one in three dying from its complications (Alzheimer's Association, 2020).

Dementia is an umbrella term for a class of neurodegenerative diseases characterized by progressive deterioration and notable decline in physical and cognitive functioning. Alzheimer's is the most common type of dementia. Other dementias including Lewy Body Dementia, Frontotemporal Dementia, Mixed Dementia, Parkinson's Disease, and Huntington's Disease are just a few of the more well-known types of diseases under the dementia umbrella (Alzheimer's Association, 2020). The loss of memory, language, problem-solving, and other cognitive skills become more evident as dementia progresses. Due to the inability to maintain Independent Activities of Daily Living (IADLs), Activities of Daily Living (ADLs), and/or requirements for 24-hour supervision, nursing homes are sought out for care. In the U.S., the largest concentration of persons with dementia resides in more than 15,600 nursing homes (CDC, 2020; Lacey, 2006). In a sentinel study, Mitchell et al. (2009) noted dementia in the U.S. is under recognized as a terminal illness. Nursing home residents with advanced dementia in the U.S. frequently undergo burdensome treatments including parental therapy, emergency department visits, hospitalization, and feeding tubes. Mitchell et al. (2009) recommended residents with advanced dementia may benefit from a palliative care approach because early recognition of deterioration could positively affect quality of life and reduce suffering. Similarly, the WHO (2019) has also advocated for palliative care for persons with dementia. The National Coalition for Hospice and Palliative Care noted a personand family-centered approach to care was appropriate at any stage in a serious illness (Ferrell, Waddle, Melnick, & Meier, 2018). The focus for non-cancer progressive illnesses, such as dementia has primarily been prognostication, mortality risk assessment, and/or validating palliative care assessment tools (Fischer, Gozansky, Sauaia, Min, Kutner, & Kramer, 2006; Mitchell et al., 2009).

Palliative care has been recognized as beneficial for those with dementia. Palliative care is a generalized approach to symptom control and discussion regarding advance care planning (ACP) and quality of life (Mulvihill, 2015). Often, palliative care is thought of as an interchangeable concept with hospice or end-of-life care. The latter concepts are a type of palliative care with a narrow focus and implemented when curative treatments are no longer an option. Interventions for quality-of-life improvement and regard for the patient and family holistically is part of the palliative care continuum.

Residential care facilities have become an option for families caring for a loved one with dementia. In developed countries, between 33-50% of people with dementia reside in nursing homes (Prince et al., 2013). While dementia is the most common reason for residential home placement, unfortunately paramedics have been found to be the major providers of assessment and healthcare (Goodman, Amador, Elmore, Machen, & Mathie, 2013; Mitchell et al., 2009). This delivery of care suggests a reactive response to resident needs. In fact, most changes in conditions are recognized by certified nurse assistants (CNA) who then notify a licensed practical nurse (LPN).

Physical deterioration often occurs before cognitive decline in dementia is noticeable. The CNAs and LPNs may be in the best position to detect these changes. In a medium-sized, urban midwestern skilled nursing and long-term care facility, there is an opportunity for improvement in the recognition of dementia-related changes. The purpose of this quality improvement (QI) project is to implement screening for changes in physical function which may indicate worsening dementia, and referrals for palliative care should be considered. The aim of this project is to increase recognition of dementia symptoms and palliative care referrals by 10% over a 12-week period. The LOCK Method framework will be used to guide this project. The primary outcome measures of interest are the number of screening instruments completed and palliative care referrals. The question for study is:

1. In residents living with dementia who reside in a long-term care facility, what is the impact of screening for changes and physical function on the number of palliative care referrals?

Review of Literature

A review of literature was performed using several databases including: The Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Cochrane Library, PubMed Central, PubMed, MEDLINE, Academic Search, and Google Scholar. The search involved use of Medical Subject Heading (MeSH) terms or words in all fields of the article title relating to *dementia; Alzheimer's; setting including long-term care* (*LTC*) or nursing home; and palliative care. The Boolean operators AND and OR were used. The inclusion criteria were articles written in the English language; peer-reviewed publications; and nursing discipline. Exclusion criteria were acute care facilities, residential homes, and pediatrics. The search yielded 104 publications from 1981 to 2019. Articles were further limited by full-text and online availability, totaling 85 articles. A total of 43 articles were excluded due to duplicates or title and abstract review. The remaining 42 articles were reviewed using a full-text assessment for quality of research including sample size, population, interventions, and significance of article in relation to the topic. Additionally, journal articles including randomized control trials (RCTs) and systematic reviews regarding dementia and LTC were reviewed. Eight additional publications were identified through the ancestry approach. 22 publications were selected for this review.

Merriam-Webster's Online dictionary (2019) defines perception as the capacity for comprehension. Advances in medicine have allowed people in America to live longer with chronic diseases. The progressive course of chronic disease care can blur the lines between living and dying (Lacey, 2006). One of the greatest challenges in dealing with persons with dementia is understanding the trajectory of the disease. The perception of patients, family members or caregivers, and health care providers varies significantly regarding dementia.

Dempsey, Dowling, Larkin, and Murphy (2015) noted staff nurses within nursing homes often viewed dementia as part of the aging process and found it difficult to identify when a person with dementia potentially needed additional services. Nurses also identified religious views, lack of knowledge, limited conversation skills, available resources, time, and team support as barriers to ACP, ADs, or palliative care (Ke, Huang, O'Connor, Lee, 2015). Nurse managers shared many of the same attitudes and beliefs as staff nurses. Many nurse managers also cited the cost of implementation as a barrier. Educating the staff about ACP, ADs, and palliative care services were underpinned by concerns regarding the capacity and perceived benefit to the person with dementia and the lack of ownership in how this impacted current practice (Beck, McIlfatrick, Hasson, & Leavey, 2017).

The perception of palliative care has traditionally been linked to malignant diseases and end-of-life care. The expansion of palliative care to include chronic diseases, life-limiting illnesses, and focus on quality of life has been misunderstood (McInerney, Doherty, Bindoff, Robinson, & Vickers, 201). The inclusion of discussions and education regarding ACP, ADs, and other topics related to quality of life with patients and caregivers is not well known to staff outside of palliative care. Chen et al. (2018) noted within nursing homes staff rarely linked palliative care to dementia. The unfamiliarity with palliative care, belief that palliative care primarily focuses on the event of death, the segregated pattern of health care, and unrecognized needs of persons with dementia fosters the perception that palliative care is only optional after all curative treatments have been exhausted (Fischer et al., 2006).

Palliative care as defined by the WHO (2019), is an approach to improve the quality of life of patients and their families facing a problem associated with life threatening illness, through the prevention and relief of suffering by means of early

identification, assessment, and treatment of pain and other problems including physical, psychosocial, and spiritual. Palliative care affirms life and regards dying as a normal process, this is accomplished through integration of the psychological and spiritual aspects of patient care. Palliative care is recommended early in the course of the illness in conjunction with other therapies, to prolong and improve quality of life.

Persons with dementia have been shown to have palliative care needs equal to those of cancer patients. Riet Paap et al. (2015) noted the exclusion of palliative care for persons with dementia was linked to the inability of nursing home staff to anticipate the palliative care needs of a person with dementia. Recognition and assessment for distress, swallowing issues such as drooling, weight loss, and understanding the needs of persons with dementia can be challenging causing staff to miss opportunities in considering palliative care services. Furthermore, knowledge deficit and bias may discourage and delay the use of palliative care in this population (Fox et al., 2018).

The use of assessment checklists in persons with dementia and their families has been shown to positively affect the course of illness (Liyanage et al., 2018; Riet Paap et al., 2015). The WHO (2019) defined assessment screenings as examination that can be applied quickly and easily to a target population. Fischer et al (2006) found screening tools may rapidly identify patients with a life-limiting illness who also benefitted from integrated, palliative services. However, many of these screening tools were designed to identify a decline in patients in the acute care setting, or who were actively receiving palliative care (Fischer et al., 2006; Ferrell, Twaddle, Melnick, & Meier, 2018). There were no publications found on the use of an assessment screening instrument for palliative care in a LTC facility. Nursing homes and LTC facilities are regulated by the Centers for Medicare and Medicaid Services (CMS). According to CMS (2017), quality indicators measure patient perception, outcomes, and organizational structures. The goal of the quality measures is for safe, effective, patient-centered, timely care. In 2012, CMS launched the National Partnership with a mission to improve quality of care provided to individuals with dementia in nursing homes. The quality indicators are measured quarterly on the Minimum Data Set (MDS). Some of the long stay quality measures are applicable to screening for deficits with persons with dementia. Evidence-based, person-centered approaches for residents are the primary emphasis of the National Partnership (CMS, 2017). These approaches include family involvement, consistent staff, and monitoring for acute and chronic pain. Utilizing consistent processes to help care for persons with dementia in nursing homes ideally improves quality of care and quality of life. Both outcomes are synonymous with the palliative care continuum and CMS goals for nursing homes.

Frameworks have been successfully applied within LTC facilities most often using the Wellspring Model for QI and the LOCK framework. Chronic understaffing, nursing home size, staff skills and knowledge, and regulatory requirements make implementing QI programs a challenge in nursing homes (Mills et al., 2018). The LOCK framework surrounds the QI efforts to create sustainable systematic changes. The LOCK framework is operationalized through grounding concepts of: (1) strength-based learning; (2) observation; (3) collaboration; and (4) keep it bite-sized.

Method

Design

A prospective, descriptive design was used for this project. Monthly palliative care screening for the elderly were implemented (Appendix A). A retrospective review of instrument usage and referrals to palliative care were conducted at the end of each month from January - March 2022.

Setting

A 180-bed nursing home, located in a metropolitan Mid-western urban metropolitan area of 3 million residents. The nursing home serves those who are uninsured, or who have Medicaid, Medicare, and private insurance. The home contains five floors with skilled therapy services, LTC residents, and a secure dementia unit (SCU) housing residents with moderate to severe dementia who have been assessed as elopement risks. There were 52 (46 %) residents with a dementia diagnosis.

Sample

A purposive sample of nursing home residents who have been diagnosed with dementia was used for this project. Inclusion criteria were persons with a dementia diagnosis and currently living in the nursing home as a long stay (> 100 days) resident. Exclusion criteria were residents without a current diagnosis of dementia and/or short stay (< 100 days) residents.

Procedure

A team of key stakeholders met to discuss admission and readmission rates from the nursing home to the hospital. A discussion of palliative care evolved, a literature review was conducted, and it was decided to initiate a QI project to screen elderly patients with dementia for possible palliative care services. Since there is no screening instrument currently available that requires minimal time, a palliative care screening instrument was developed based on the CMS quality indicators for nursing homes. Beginning in January 2022, residents with dementia will be screened with the palliative care instrument at the end of each month. The palliative care instruments will be analyzed and evaluated for effectiveness in identifying those who may benefit from palliative care services.

Approval Process

Administrative approval was obtained from the nursing home facility. Approval from the Doctor of Nursing practice committee was obtained. Approval from the graduate school and the university's Institutional Review Board (IRB) are anticipated. There is minimal risk as this is a retrospective review and all data will be deidentified. Benefits of this project include the earlier identification of those in need for palliative care.

Data Collection/Analysis

The palliative care screening instruments was performed by the end of each month and placed in the hanging file at each nurse's station since this was a paper document. Prior to the documents being scanned into the EHR, data was recorded in the data collection instrument (Appendix B). All data was deidentified and stored on a password protected computer or removable drive owned by the primary investigator. Data was coded as R-1A, R-1B, R-1C, etc., for resident one (R-1) in the month of January (R-1A), February (R-1B), March (R-1C), etc. For resident two, data will be coded as R-2A for January, R-2B for February, and R-2C for March, etc. All data will be stored for a period of seven years. Data analysis was anticipated to include chi square and regression analyses.

Results

A Fisher's Exact Test was conducted to examine the impact of demographic factors, physical change functions, location, and type of staff on palliative care referrals. Typically, a chi-square test would be run to analyze categorical independent and dependent variables; however, that analysis has the assumption of cells with frequencies greater than 5, which was violated by the data. As a result, the nonparametric equivalent of the chi-square, the Fischer's Exact Test was analyzed. The total number of residents with dementia that had at least three of the indicators in the screening was n = 52. The ages ranged from 53 to 97 years of age and the mean age was 72.9 years of age. Most residents were female (n = 28, 53.8%) and males comprised the remainder of the sample (n = 24, 46.2%). The analysis of sex and palliative care orders showed a significant relationship, p = 0.046, This indicates that gender plays a significant role in determining whether an order for palliative care is received. Specifically, female residents are more likely to get a palliative care order relative to their male counterparts.

Additional analyses were conducted to examine the relationship between race, weight loss, incontinence, new or worsening pressure ulcers, and type of staff completing screening forms. The results yielded by the statistical analyses indicated that these factors did not significantly affect obtaining palliative care orders, p > 0. 086.The facility was noted to have several floors including a specialized secure dementia unit. Although, residents were specifically noted as having dementia in the special care unit, it was not statistically significant, p = 0.170. Analyses conducted for falls with serious injury yielded a statistically significant relationship (p = 0.041) with obtaining orders for palliative care. In like manner, visits to the emergency department yielded comparable results, p = 0.02, and indicated a very significant relationship with obtaining orders for palliative care. Decreased oral intake, p = 0.034, was statistically significant in obtaining a palliative care order. If a resident with dementia has decreased oral intake, the likelihood of that resident receiving an order for palliative care is increased. The most statistically significant relationship was noted between decreased physical activity and obtaining an order for palliative care, p < 0.001.

Discussion

The implementation of this project was challenged by the Covid-19 pandemic and the tenuous staffing in the nursing home. During the process, there were three changes in key leadership appointments, including the Facility Administrator and Director of Nursing. The change of administrative staff coupled with clinical short staffing posed challenges. Multiple re-education sessions were conducted throughout the project. The palpable loss of administrative staff and use of interim and temporary staff for administrative and clinical positions undermined the consistency needed in providing care, thereby reducing the quality of care being rendered. When the tool was not mentioned in a meeting, there were multiple days without any completed screenings. When the information was re-disseminated in update meetings, multiple screenings would be placed in boxes within 48 hours.

Residents living with dementia in long-term care facilities are challenged with change daily. The idea that each day is new, and a person may not remember all, or parts of their previous life can lead to challenges that may not be identifiable to short term staff. Over extended staff may also miss key indicators due to apathy, fatigue, or feeling overworked that can adversely affect persons living with dementia in nursing homes. The ability of staff to identify deconditioning and changes that occur with this population is a key component in helping residents to live their life to the fullest potential. The use of a standardized screening tool can assist in that endeavor.

The challenges with staffing also impacted the staff education component, including time, the availability of educators and staff to provide and receive the education. CMS as a regulatory agency has identified all the indicators on the screening as significant markers in determining the quality of care a resident receives. The combination of these markers together can help to cultivate a better environment that is inclusive of resident, families, and staff. The use of a palliative care screening tool with a focus on residents with falls, decreased oral intake, decreased activity, and emergency room visits can help to positively influence the direction of care delivery. This project also embraces the importance of all staff and the impact of their role in the care of residents in a nursing home.

Conclusion

The Palliative Care Screening for the Elderly tool is transferrable across disciplines and ancillary staff. Identification of changes in condition resulted in increased palliative care referrals. The results of this project align with the literature in the use of a reliable palliative care screening tool for patients living with dementia can positively affect patient outcomes. The potential early identification of resident changes with falls, decreased oral intake, decreased activity, and emergency room visits can result in improved quality of life of residents, subsequent quality of care scores (per CMS guidelines), improved attention to overall health, and awareness to staff regarding patient's condition. The implementation of the palliative care screening tool resulted in 21.3% of residents with dementia receiving a palliative care referral. Per the research regarding palliative care improving the quality of life for patients, this should result in positive ramifications for the patients. A longitudinal study with increased time and a larger sample size should be considered for the future.

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Appendix A

Certified Nurse Assistant
 Licensed Practical Nurse
 Housekeeping
 Activities
 Other

Figure 1. Palliative Care Screening for the Elderly

Palliative Care Screening for the Elderly								
Resident Initials:	Room Number:							
Question								
Has the resident:		Yes	No	Unknown				
1. had decreased oral intake for greate	er than 3 days?							
2. had weight loss greater than 5% in								
3. been incontinent?								
4. had decreased physical activity (lin	nited self-care and/or							
increased dependence on others for	ADLs)?							
5. been noted to have a new or worser	ning pressure ulcer?							
6. had a fall with serious injury within	n the last 30 days?							
7. visited the emergency department ((ED) or been							
hospitalized within the last 30 days	5?							
TOTAL								

If any yes responses, please notify the Assistant Director of Nursing.

Adapted from: Quality measures. (2021, June 9). Retrieved from https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/NHQIQualityMeasures

Appendix B

	AUDIT TOOL FOR PERSONS WITH MODERATE TO SEVERE DEMENTIA IN THE NURSING HOME												
Resident	A g e	S e x	Race/ Ethnicity	Location	Current Dx of Dementia	Decreased Oral Intake > 3 days	Weight loss >5% in 30 days	Incontinent	Decreased Physical Activity	New or Worsening Pressure Ulcer	Fall with Serious Injury	ED Visit	Consult for Palliative Care

Appendix C

Figure 1: Sex

Chi-Square Tests									
	Value	d f	Asymp. Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)				
Pearson Chi-Square	4.392 ^a	1	.036	.046	.037				
Continuity Correction ^b	3.081	1	.079						
Likelihood Ratio	4.730	1	.030	.046	.037				
Fisher's Exact Test				.046	.037				
N of Valid Cases	52								

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.08.

b. Computed only for a 2x2 table

Figure 2: Race

Chi-Square Tests									
	Value	df	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)					
Pearson Chi-	.539 ^a	3	.910	1.000					
Square									
Likelihood Ratio	.718	3	.869	1.000					
Fisher's Exact Test	1.184			.900					
N of Valid Cases	52								

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .21.

Figure 3: Decreased Oral Intake

Chi-Square Tests

	em	Dequare rec			
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	5.191 ^a	1	.023	.034	.029
Continuity Correction ^b	3.693	1	.055		
Likelihood Ratio	4.975	1	.026	.034	.029
Fisher's Exact Test				.034	.029
N of Valid Cases	52				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.81.

b. Computed only for a 2x2 table

Figure 4: Weight Loss

Chi-Square Tests									
	Value	d f	Asymp.Sig. (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)				
Pearson Chi-Square	3.838 ^a	1	.050	.086	.050				
Continuity Correction ^b	2.615	1	.106						
Likelihood Ratio	4.149	1	.042	.086	.050				
Fisher's Exact Test				.086	.050				
N of Valid Cases	52								

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.87.

b. Computed only for a 2x2 table

Figure 5: Incontinence

Chi-Square Tests									
	Value	d f	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)				
Pearson Chi-Square	.213 ^a	1	.645	.711	.462				
Continuity Correction ^b	.006	1	.939						
Likelihood Ratio	.210	1	.647	.711	.462				
Fisher's Exact Test				.711	.462				
N of Valid Cases	45								

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.40.

b. Computed only for a 2x2 table

Figure 6: Decreased Physical Activity

Chi-Square Tests

	Value	d f	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	12.336 ^a	1	.000	.001	.001
Continuity Correction ^b	9.983	1	.002		
Likelihood Ratio	12.286	1	.000	.001	.001
Fisher's Exact Test				.001	.001

N of Valid Cases 52	
N of Valid Cases 52	

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.02.

b. Computed only for a 2x2 table

Figure 7: New Pressure Ulcer

Chi-Square Tests	

	Value	d f	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	3.113 ^a	1	.078	.116	.088
Continuity Correction ^b	1.883	1	.170		
Likelihood Ratio	2.852	1	.091	.116	.088
Fisher's Exact Test				.116	.088
N of Valid Cases	52				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.75.

b. Computed only for a 2x2 table

Figure 8: Falls

	Chi-Sq	uare Tests			
	Value	d f	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)
Pearson Chi-Square	7.753 ^a	1	.005	.041	.041
Continuity Correction ^b	3.616	1	.057		
Likelihood Ratio	6.523	1	.011	.041	.041
Fisher's Exact Test				.041	.041
N of Valid Cases	52				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .42.

b. Computed only for a 2x2 table

Figure 9	9: Emergency	Department	Visit

Cili-Square Tests						
	Value	d f	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)	Exact Sig. (1- sided)	
Pearson Chi-Square Continuity Correction ^b	7.252 ^a 4.754	1 1	.007 .029	.021	.021	
Likelihood Ratio	5.870	1	.015	.021	.021	
Fisher's Exact Test N of Valid Cases	51			.021	.021	

Chi-Square Tests

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.37.

b. Computed only for a 2x2 table

Figure 10: Staff

Chi-Square Tests						
	Value	d f	Asymp. Sig. (2- sided)	Exact Sig. (2- sided)		
Pearson Chi-	4.558 ^a	4	.336	.409		
Square						
Likelihood Ratio	5.366	4	.252	.404		
Fisher's Exact Test	3.986			.437		
N of Valid Cases	23					

a. 9 cells (90.0%) have expected count less than 5. The minimum expected count is .35.

Figure 11: Location

Chi-Square Tests Asymp. Sig. Exact Sig. (2- sided) Value d f (2-sided) 5.912^a 4 Pearson Chi-.206 .184 Square Likelihood Ratio 8.075 4 .089 .134 5.960 Fisher's Exact Test .170 N of Valid Cases 51

a. 7 cells (70.0%) have expected count less than 5. The minimum expected count is .43.