

Peii Chen, PhD^{1,3}, Pasquale G. Frisina, PhD², and Anna M. Barrett, MD^{1,2,3}

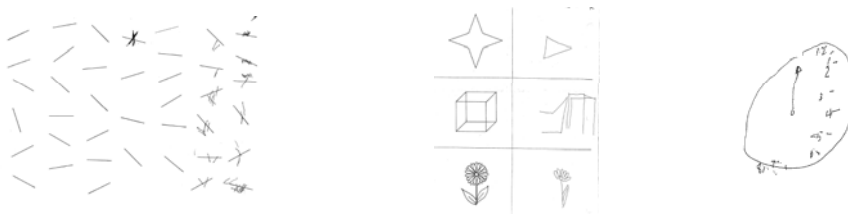
¹Kessler Foundation Research Center, West Orange NJ; ²Kessler Institute for Rehabilitation, West Orange, NJ;

³University of Medicine and Dentistry of New Jersey – New Jersey Medical School, Newark, NJ

Spatial Neglect

❖ Spatial neglect is a failure to report, respond, or orient to novel stimuli or meaningful stimuli presented to the side opposite a brain lesion, when this failure cannot be attributed to either sensory or motor defects (Heilman et al., 2003). This neurocognitive disorder causes functional disability (Barrett & Burkholder, 2006).

❖ Of clinical importance, spatial neglect is linked to longer hospitalization and worse rehabilitation outcomes (Appelros, 2007; Gillen et al., 2005; Jehkonen et al., 2006; Katz et al., 1999).



High Prevalence of Spatial Neglect

❖ Literature suggests that anywhere between **30 – 70 %** of right-brain-damaged stroke survivors present with spatial neglect, while **20 – 60 %** of left-brain damaged stroke survivors have spatial neglect (Fullerton et al., 1986; McGlone et al., 1997; Ringman et al., 2004; Stone et al., 1991; Wee & Hopman, 2008).

However, Spatial Neglect Under-identified Clinically

❖ At a health care facility in St. Louis, Missouri, Edwards and colleagues found that **61%** stroke survivors with spatial neglect, prospectively identified by neuropsychological testing, were undetected clinically (Edwards, et al., 2006).

❖ Although there has been an ICD-9-CM* symptom code for spatial neglect in the U.S. since 1988, we were unable to find any prevalence or health outcome studies searching secondary databases for its ICD-9-CM code (**781.8**).

* The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) coding system lists codes for diagnoses and procedures associated with healthcare service utilization in the United States.

Questions of the Present Study

- ❖ Are neglect patients assigned with the ICD-9-CM code?
- ❖ Do neglect patients identified clinically have better outcome?

Acknowledgement

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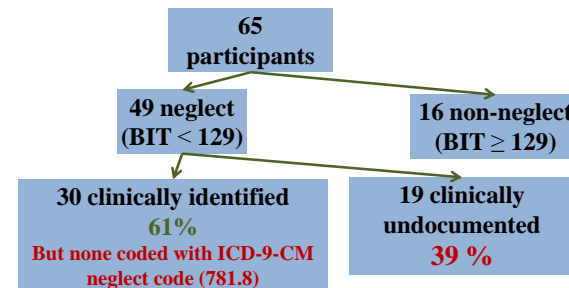
Method and Results

❖ As part of a larger IRB-approved study performed between Dec 2008 and Apr 2010, 72 stroke survivors with right-brain damage provided consent to participate in spatial neglect screening (27/45 men/women; 6/66 left- / right-handers; 3/69 Hispanic/non-Hispanic; 17 African Americans, 2 Asians, & 53 Caucasians) .

❖ Spatial neglect was defined with a Behavioural Inattention Test (BIT; Wilson et al., 1987) score < 129/146 (Halligan et al., 1991).

❖ Blinded to neglect screening results, an author (PGF) conducted a comprehensive chart review to identify the terms “spatial neglect”, “visual neglect”, “hemispatial neglect”, “left-sided neglect”, or “neglect” in clinician notes, and also collected all ICD-9-CM codes submitted for participants from electronic medical records.

❖ Excluding one person with medical records unavailable and six persons who did not complete BIT, there were 65 stroke survivors included in this study.



	Edu	Age	Post stroke day	BIT	LOS	Admin FIM	Dis FIM	FIM improve per day
Non-neglect patients (n = 16)	13.1 (4.3)	59.9 (16.8)	43.7 (89.5)	137.4 (5.5)	23.3 (12.2)	57.4 (14.0)	86.3 (10.5)	1.47 (0.89)
Neglect patients (n = 49)	13.1 (3.3)	66.5 (16.9)	29.2 (30.5)	65.5 (42.8)	30.0 (11.0)	39.5 (13.7)	57.7 (20.0)	0.65 (0.53)
Clinically identified (n = 30)	12.7 (3.1)	69.3 (15.4)	22.5 (8.9)	57.1 (42.7)	28.6 (9.8)	39.1 (13.3)	54.3 (19.9)	0.57 (0.58)
Clinically undocumented (n = 19)	13.6 (3.5)	62.0 (18.5)	39.8 (46.5)	78.8 (40.6)	32.3 (12.6)	40.1 (14.8)	63.0 (19.6)	0.76 (0.43)

Effect size
d = 0.34

Discussion and Conclusion

❖ Spatial neglect is frequently undetected clinically.

❖ Neglect patients stayed in the rehabilitation facility significantly longer than non-neglect patients. Neglect patients who were not detected clinically (C-Un N+) stayed in the rehabilitation facility slightly longer than those who were clinically identified (C-Id N+).

❖ Compared with non-neglect patients, C-Un N+ and C-Id N+ patients had similarly poorer neuropsychological neglect scores (BIT) and poorer functional outcomes (FIM scored at discharge). Easy and sensitive assessments for neglect-related functional disability should be systematically administered in both the acute-care and rehabilitation phases of stroke treatment (Edwards, et al., 2006; Menon-Nair et al., 2006).

❖ ICD-9-CM data can be pooled from multiple sites, and it has the potential to enhance the generalizability of findings with regard to monitoring, performing and planning health services. However, we feel that investigating spatial neglect via this code in administrative databases is not possible at the present time, as its convergent validity with clinical assessment and standardized testing may be poor.

❖ Clinicians should work with policy makers to solve the problem with under-identification of spatial neglect, to stop extension of this problem to healthcare documentation, and to increase validity of health outcome data.