

# Social Environment and Gender Differences in Disability in Egypt and Tunisia

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# Background

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- The study of gender in demography has been limited by conventional views of what is important about women (reproduction & maternal behavior) and of the ages at which women matter (15–50 years).
- Recognition of the implications of the demographic and epidemiologic transitions for morbidity change has sparked interest in the causes of disparities in health, including gender-related factors.

# Background

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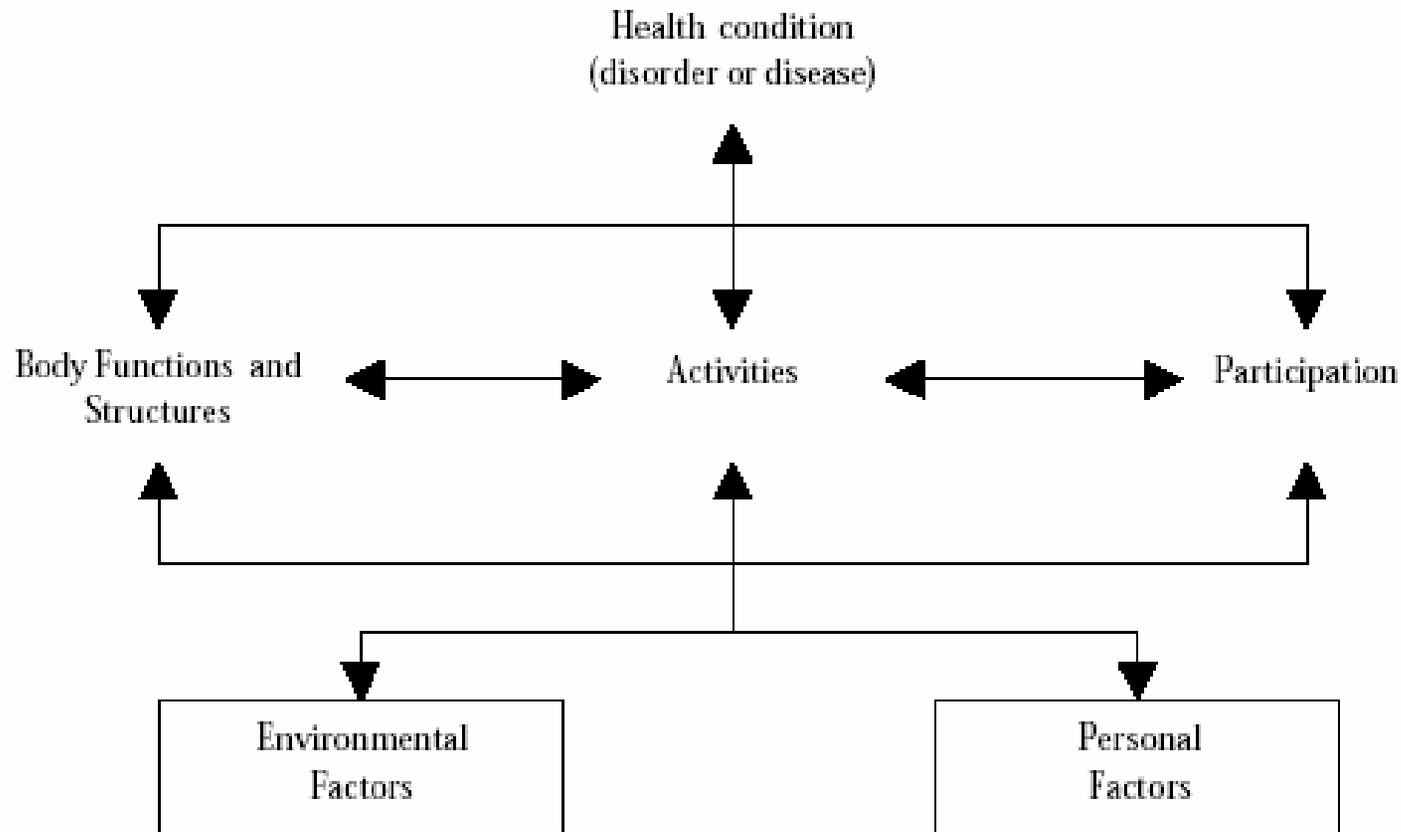
- Related work in the non-Western world has concentrated on disparities in child health and survival; some of the largest disadvantages among girls persist in the Middle East.
- In such settings, gender inequalities in health and survival also may be present in adulthood, as disadvantage may accumulate over the life course, and priorities in the allocation of food, money, and care may rank older women behind other family members.
- Little research has compared later-life health among women and men in this region.

# Objectives

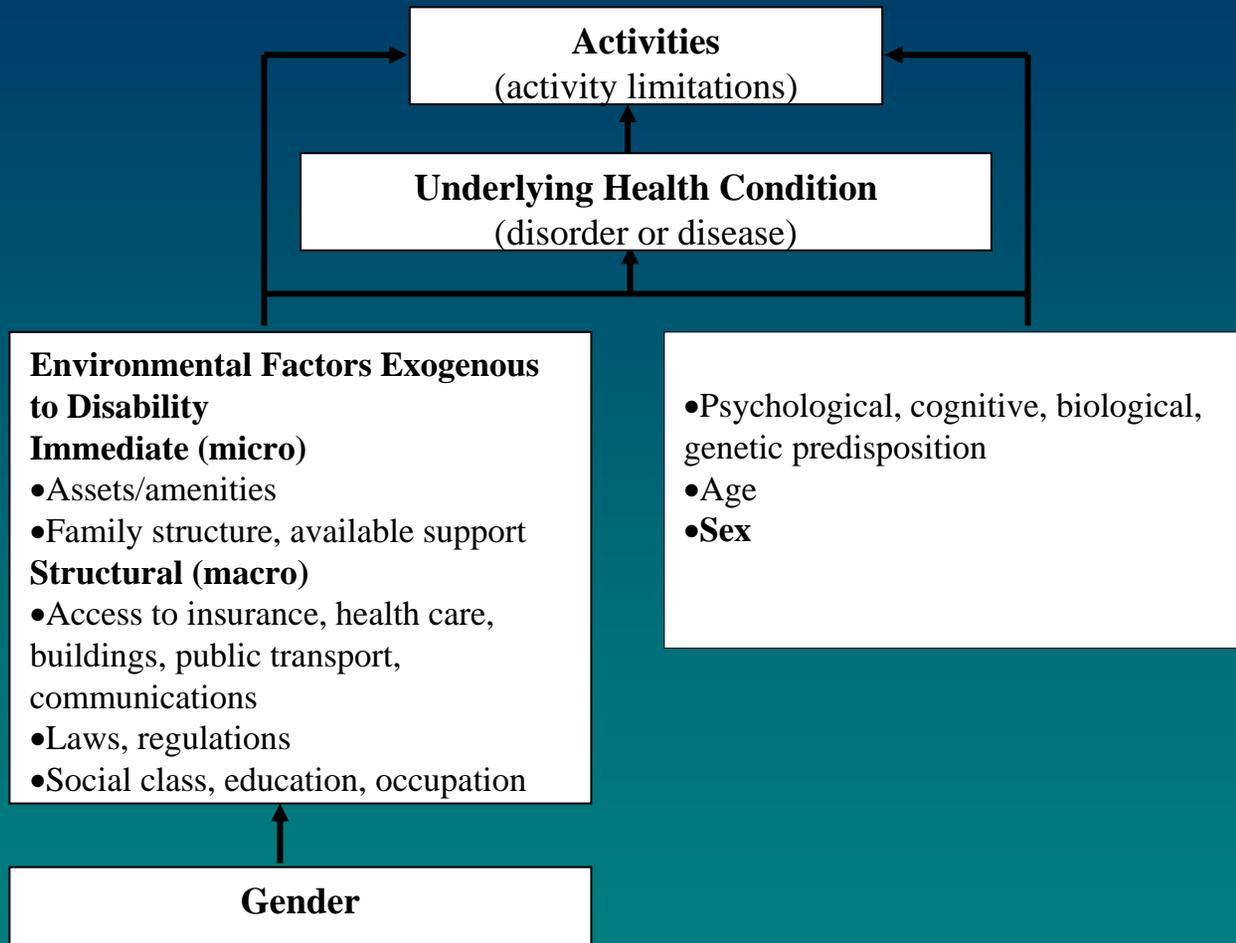
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- We adapt the most recent classification of functional health developed by the World Health Organization (2001) to assess, in the contexts of Egypt and Tunisia, gender differences in rates of reported physical functional limitation and basic and instrumental activity limitations, as well as environmental factors that may account for these differences.

# International Classification of Functioning, Disability, and Health



(WHO 2001)



Note: Adapted from the International Classification of Functioning, Disability, and Health (WHO 2001)

# Data

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- *World Health Organization Collaborative Study on Social and Health Aspects of Aging*, conducted during 1989–1990
- Non-institutionalized men & women aged 60+
- Oversampling at older ages
- Analysis based on ever-married adults with complete data on variables of interest (474 men and 548 women in Egypt; 632 men and 554 women in Tunisia)

# Dependent Variables

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- Consistent with ICF recommendations, dependent variables are dichotomized summative scales for reporting any difficulty (versus no difficulty):
  - Executing physical tasks (score 1–12)
  - Performing basic ADLs (score 1–14)
  - Performing IADLs (score 1–10)

# Independent Variables

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- Gender
- Underlying health conditions: # reported health conditions; cognitive limitation
- Immediate environment: availability of kin (widowed; # sons, # daughters, # siblings); characteristics of index adult's home (urban-rural; self/spouse owned; amenities)
- Macro-environment: childhood residence, education, prior lifetime occupation

# Analytic Strategy

Logistic regression to estimate un-, partially, and fully adjusted odds for women vs men of difficulty executing movements  $F_i$ , performing ADLs  $B_i$ , and performing IADLs  $I_i$ .

$$\text{logit}(F_i) = \beta_0 + \beta_1 G_i + \sum_{j=2}^5 \beta_j U_{ij} + \sum_{j=6}^8 \beta_j S_{ij} + \sum_{j=9}^{11} \beta_j E_{ij} + \sum_{j=12}^{14} \beta_j M_{ij}$$

$$\text{logit}(B_i) = \beta_0 + \beta_1 G_i + \sum_{j=2}^6 \beta_j U_{ij} + \sum_{j=7}^9 \beta_j S_{ij} + \sum_{j=10}^{12} \beta_j E_{ij} + \sum_{j=13}^{15} \beta_j M_{ij}$$

$$\text{logit}(I_i) = \beta_0 + \beta_1 G_i + \sum_{j=2}^6 \beta_j U_{ij} + \sum_{j=7}^9 \beta_j S_{ij} + \sum_{j=10}^{12} \beta_j E_{ij} + \sum_{j=13}^{15} \beta_j M_{ij}$$

# Characteristics of the Samples

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- Women more often report having (had) at least 3 acute or chronic conditions.
- Gender differences in MMSE scores significant in both sites; women report any cognitive impairment more often only in Tunisia; a higher % of women interviewed by proxy in Tunisia.
- Women widowed more often, less often have 2+ living sons and 2+ living daughters.
- >40% of older women and men in Egypt and >60% in Tunisia have at least 2 living siblings.

# Characteristics of Samples (cont)

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- Women less often report that they or their spouse owns their place of residence
- Women and men report access to similar #s of major amenities. In Egypt, women report at least marginally more often having access to facilities for bathing and cooking and to all amenities about which questions were asked.
- Neither childhood nor current residence differ by gender, but women report less often having any education and skilled prior employment.

# Characteristics (summary)

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- Compared to men, women report higher levels of underlying morbidity, less frequent opportunities for support from marriage, greater access to home amenities, and less access to educational and employment opportunities .
- Women's higher access than men to cooking and bathing facilities in Egypt but not in Tunisia consistent with more rigid gender roles and spheres in Egypt.
- Women's poorer educational attainment and less frequent skilled employment reflect highly gendered institutional environments.

**TABLE 2.** Mean Scores for Difficulty Executing Movements and Performing Basic and Instrumental Daily Activities, and Prevalence of Any Difficulty with these Movements and Activities, Women and Men Aged 60 Years and Older, by Study Site

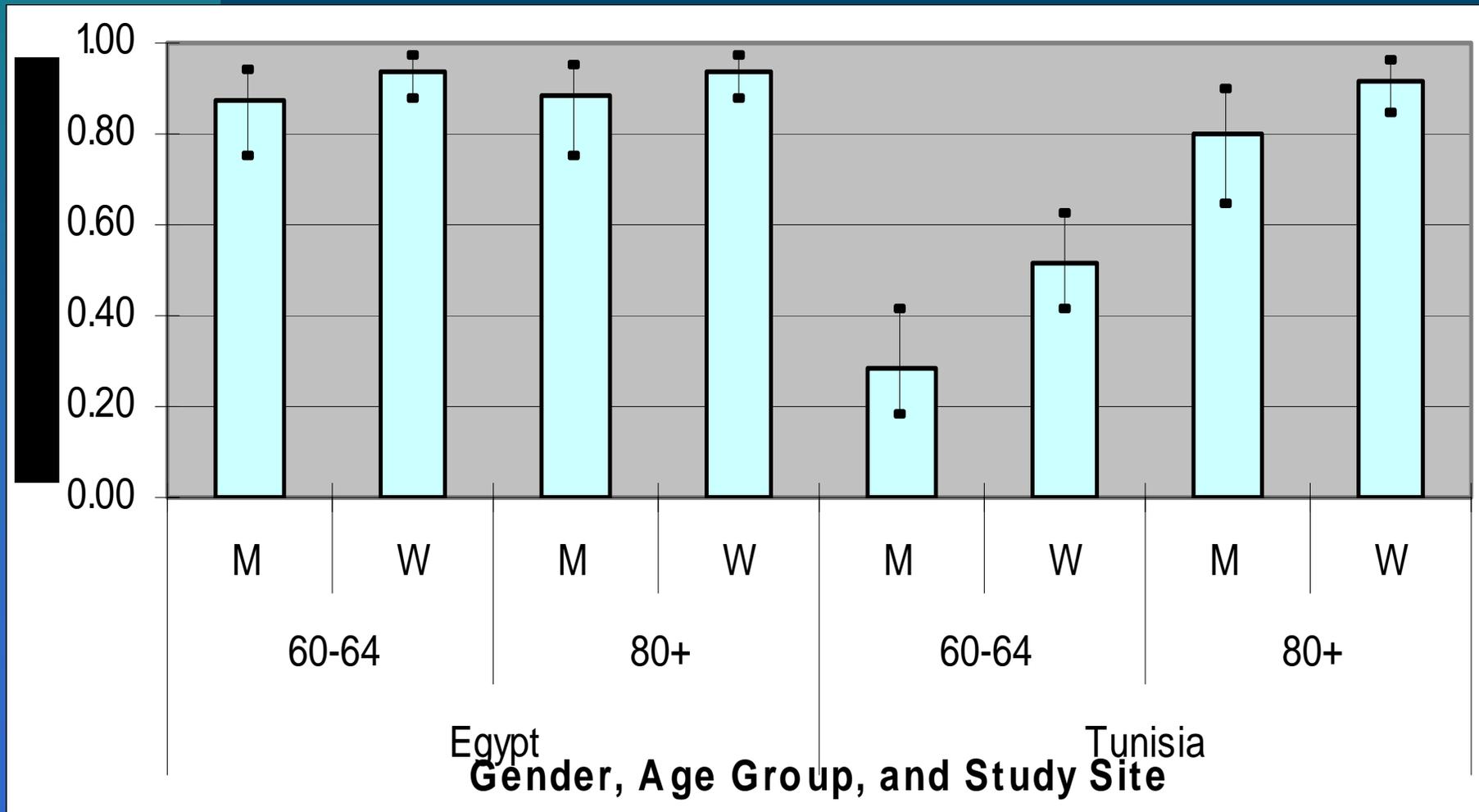
	<u>Egypt</u>		<u>Tunisia</u>	
	Men	Women	Men	Women
(n)	(474)	(548)	(634)	(555)
Physical functional limitation (range 0-12)	2.6 (2.4-2.9)	4.3 (4.0-4.6)	1.9 (1.7-2.1)	3.3 (3.0-3.5)
Prevalence of any physical functional limitation	71.3	88.0 ***	50.3	76.2 ***
ADL limitation (range 0-14)	0.7 (0.6-0.9)	1.3 (1.0-1.5)	0.9 (0.7-1.0)	1.1 (0.9-1.3)
Prevalence of any ADL limitation	22.4	28.5 *	32.0	46.8 ***
IADL limitation	1.9 (1.7-2.1)	2.8 (2.6-3.1)	2.0 (1.8-2.2)	3.4 (3.2-3.7)
Prevalence of any IADL limitation	49.1	63.0 ***	62.7	90.0 ***

**TABLE 3.** Unadjusted, Partially Adjusted, and Fully Adjusted Relative Log Odds (Female vs. Male) for Any Difficulty Executing Movements and Performing Basic and Instrumental Daily Activities, Study Sites in Egypt and Tunisia

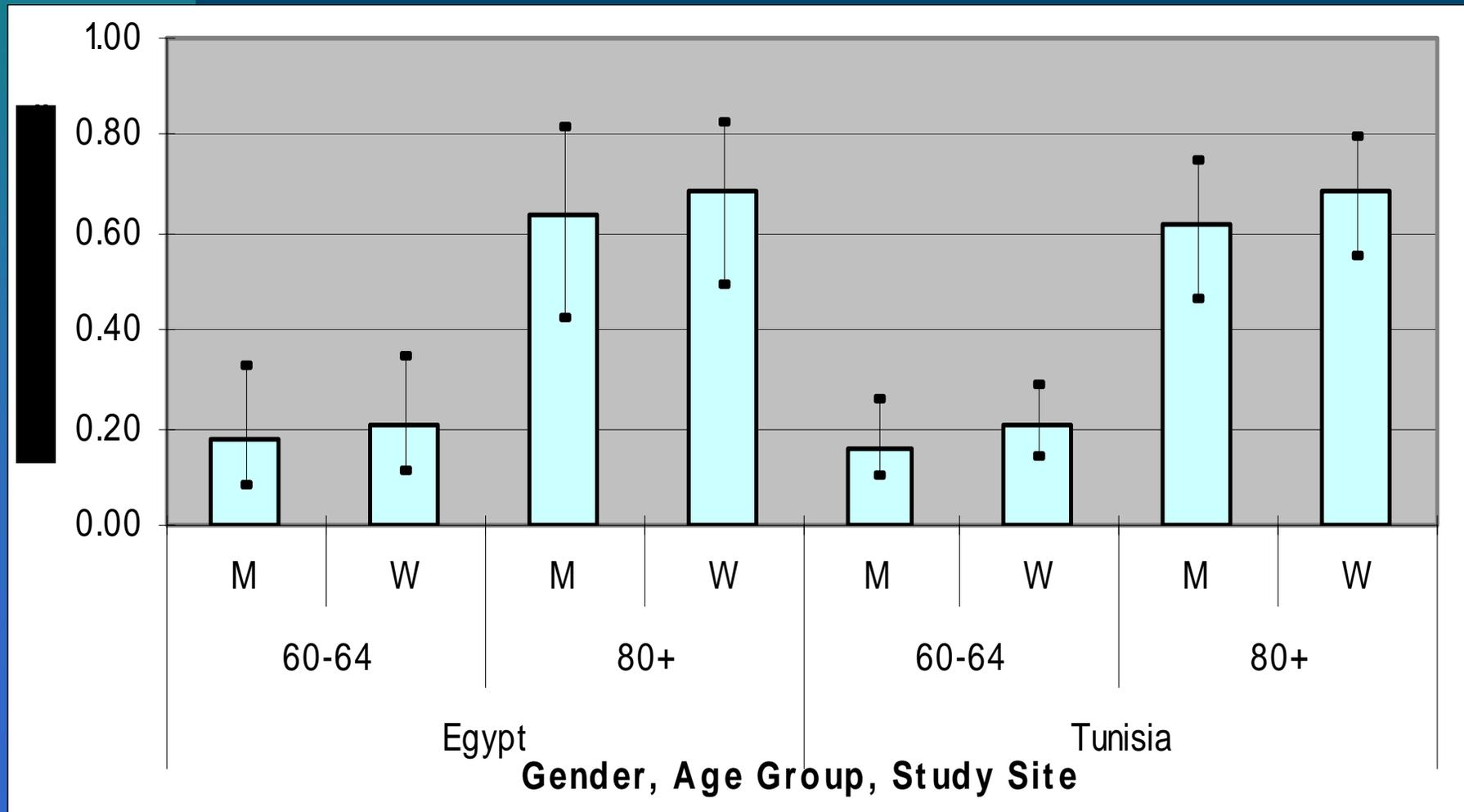
	<u>Egypt (n=1022)</u>				<u>Tunisia (n=1189)</u>			
	$\hat{\beta}$	(se)	<i>p</i>	Model <i>F</i>	$\hat{\beta}$	(se)	<i>p</i>	Model <i>F</i>
<b>Physical Functional Limitation</b>								
Model 1: G only	1.08	(0.19)	***	***	1.15	(0.13)	***	***
Model 2: G + U	0.96	(0.20)	***	***	0.88	(0.15)	***	***
Model 3: G + U + S	0.73	(0.26)	**	<i>ns</i>	0.94	(0.17)	***	<i>ns</i>
Model 3: G + U + S + E	0.84	(0.26)	***	***	1.05	(0.18)	***	**
Model 5: G + U + S + E + M	0.78	(0.26)	**	<i>ns</i>	1.02	(0.19)	***	<i>ns</i>
<b>Difficulty Performing ADLs</b>								
Model 1: G only	0.32	(0.15)	*	*	0.63	(0.12)	***	***
Model 2: G + U	0.26	(0.18)	<i>ns</i>	***	0.26	(0.15)	+	***
Model 3: G + U + S	0.17	(0.21)	<i>ns</i>	<i>ns</i>	0.29	(0.17)	+	<i>ns</i>
Model 3: G + U + S + E	0.26	(0.24)	<i>ns</i>	***	0.38	(0.17)	*	**
Model 5: G + U + S + E + M	0.20	(0.24)	<i>ns</i>	*	0.31	(0.19)	<i>ns</i>	<i>ns</i>
<b>Difficulty Performing IADLs</b>								
Model 1: G only	0.57	(0.14)	***	***	1.68	(0.16)	***	***
Model 2: G + U	0.67	(0.17)	***	***	1.19	(0.18)	***	***
Model 3: G + U + S	0.50	(0.21)	*	*	1.31	(0.20)	***	<i>ns</i>
Model 3: G + U + S + E	0.64	(0.23)	**	***	1.60	(0.22)	***	***
Model 5: G + U + S + E + M	0.54	(0.25)	*	***	1.33	(0.23)	***	***

+*p* < .10; \* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001, accounting for the multistage, stratified cluster-sample design

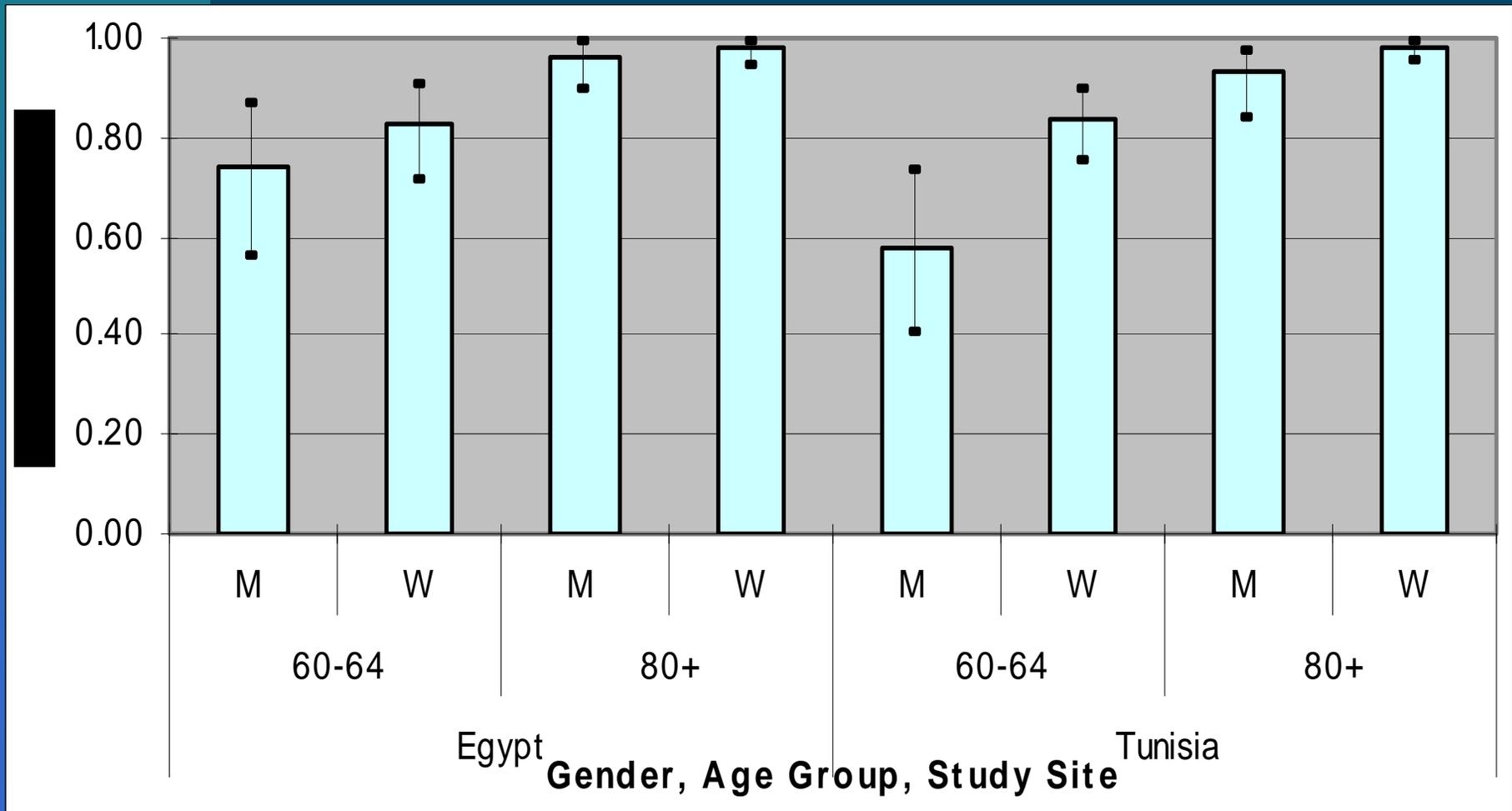
# Predicted Prevalence of Any Difficulty Executing Movements



# Predicted Prevalence of Any Difficulty Performing ADLs



# Predicted Prevalence of Any Difficulty Performing ADLs



# Conclusions

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- Women more often widowed, and being widowed + associated with all disability measures, so controlling for widowhood reduces gender differences in disability (less so in Tunisia)
- Women have > access to amenities, # amenities - associated with ADL/IADL limitation, so controlling for amenities increases gender difference in disability in Egypt and Tunisia.

## Conclusions (cont)

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- Women < educated, & education - associated with ADL/IADL limitation, so controlling for ed reduces (somewhat) gender difference in ADL/IADL disability in both settings --- that it reduces gender difference in FL suggests that these measures are not independent of context.