

Evaluation of the Mississippi 'Fight the Bite' Campaign 2003

Sally Slavinski, DVM, MPH

MSDH Division of Epidemiology

Ellen Jones

MSU-Mississippi Health Policy Research Center

WNV in Mississippi

- **First human cases in 2002**
- **Large outbreak ensued**
- **Overwhelmed capacity of MSDH**
- **Quickly put together prevention campaign**

WNV in Mississippi

2002 – Post Season

- **Time for review**
 - **Unsure of effectiveness of prevention campaign**
 - **Comments from public and community leaders**
- **Preparation for 2003 season**
- **Consult with community health educator**

WNV in Mississippi

2002 – Post Season

- **Preparations**
 - **Focus groups**
 - **LA format created by Emily Zielinski-Gutiérrez**
 - **8 groups conducted in 4 areas**
 - **Public**
 - **Community Leaders**

WNV in Mississippi

2002 – Post Season

- **Examine focus group feedback**
- **Design PSA's based on findings**
- **Develop and produce**
 - **Television spots**
 - **Radio spots**
 - **Newspaper ads**

WNV Focus Group

Feedback – Community Leaders

- **Risk of WNV exaggerated**
- **Perception of public concerns**
 - **Greater concern for elderly and by parents of young children**
- **Inconsistent messages and information**
- **Wanted more individual responsibility; balance city and personal**
- **Educate**
- **Use MSDH and Physicians to provide message**
- **Media most effective**

WNV Focus Group

Feedback - Public

- “Insect repellent has to have DDT and that can be dangerous”
- “Long sleeves is not a reasonable message”
- “Not sure if people know how or will change behavior”
- “Biggest source of information is what the newsman says”
- “Should use the schools and public service announcements”
- “Health care providers should tell people regularly”
- “When talk dies down, people forget to be concerned”

PSA's

- **1st Prevention**
 - **Shot of mosquito larvae in water**
 - **Remove sources of standing water - turn over containers**
 - **Clean yard/gutters**
 - **Check screens/doors**

PSA's

- **2nd Personal Protection**
 - *“You can reduce your risk...”*
 - **WNV transmission by mosquito**
 - **Repellents with DEET**
 - **Long sleeves and pants**
 - **Toll free hot line and website**

PSA's

- **MS Broadcasters Association**
 - **MSDH Contract**
- **Purchased additional targeted airtime**
 - **172 Television ads**
 - **396 Radio spots**
 - **28 ¼ page newspaper ads**

Fight the Bite

- **Launched campaign in conjunction with the Governor's office**
- **Unveiled PSA's at press conference**
- **Weekend after Labor Day**

Evaluation

- Can we evaluate the effectiveness?

Previous Evaluations

- **SLE in Florida 1990-1***
- **Matched case control study**
 - **Personal protective measures associated with decreased risk for SLE infection**
 - **“First evidence that a public education campaign to reduce exposure had a protective effect against acquiring the disease.”**

***Meehan PJ, Wells DL, Paul W, Buff E, Lewis A, Muth D, Hopkins R, Karabatsos N, Tsai TF. Epidemiological features of and public health response to a St. Louis encephalitis epidemic in Florida, 1990-1. Epidemiol Infect. 2000 Aug;125(1):181-8.**

Previous Evaluations

- **Australian study: which factors influence adoption of individual prevention strategies***
 - **Concern for disease is a predictor for individuals' elimination of breeding sites**
 - **Conclusion: raising concern about disease can increase use of personal prevention strategies**

*Larson A, Bryan J, Howard P, McGinn D. Queenslanders' use of personal strategies to minimize risk of mosquito-borne disease. Aust N Z J Public Health. 2000 Aug;24(4):374-7.

Previous Evaluations

- **Relief workers sent to Puerto Rico after hurricane George 1998 given repellent. Some given dengue prevention education***
 - **Workers with prevention education used repellent more often than those who didn't**
 - **“Educational messages for travelers to endemic areas should emphasize personal protective measures, including the use of insect repellents to assure the lowest risk possible for acquiring dengue.”**

***O'Leary D, Rigau-Pérez J, Hayes E, Vorndam A, Clark G, Gubler D. Assessment of dengue risk in relief workers in Puerto Rico after hurricane George, 1998. Am J Trop Med Hyg. 2002 ;66(1):35-9**

Previous Evaluations

- **Assessment of personal preventive efforts in CT***
 - 44% used repellents
 - Use of repellent associated with
 - ≤ 50 yrs
 - Worried about WNV
 - Engaging in 2 or more PPB's more likely to occur among
 - Women
 - Very Worried about WNV

*McCarthy TA, Hadler JL, Julian K, Walsh SJ, Biggerstaff BJ, Hinten SR, Baisley C, Iton A, Brennan T, Nelson RS, Achambault G, Marfin TA, Peterson LR. West Nile Serosurvey and Assessment of Personal Prevention Efforts in an Area with Intense Epizootic Activity: CT, 2000. Annals New York Academy of Sciences:307-16.

Previous Evaluations

- **Knowledge, Attitudes, and Behaviors About WNV – CT, 2002***
 - Used BRFSS telephone survey
 - Local WNV did not predict use of PPB's
 - Most know elderly at greater risk
 - “The findings underscore the need for continued public education about the risk for WNV.., use of PPB's andregular evaluations..”

*Knowledge, Attitudes, and Behaviors About WNV – CT, 2002, MMWR Sept 19, 2003 / 52(37);886-888.

MS Evaluation

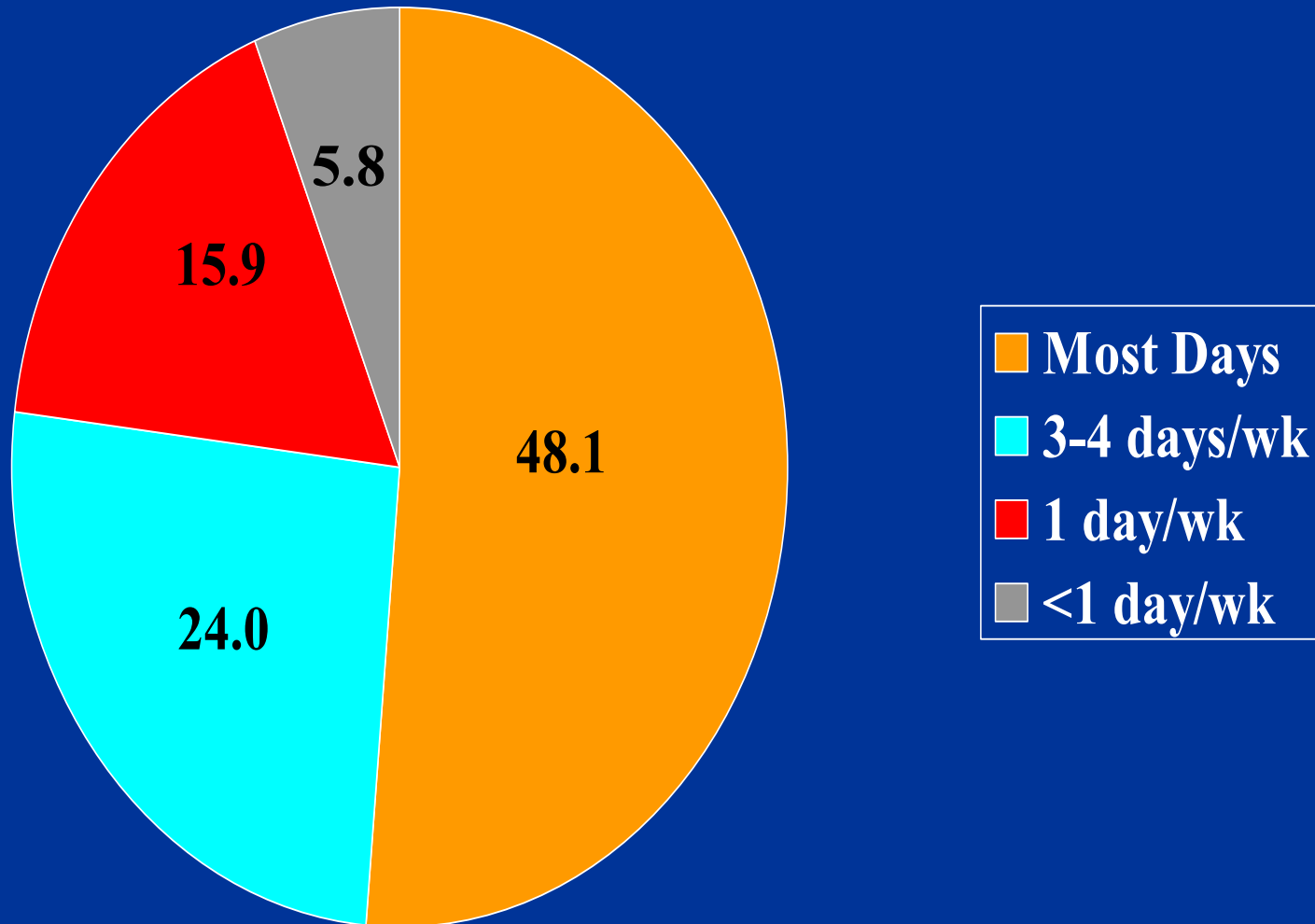
- **Telephone survey conducted November 2003**
- **816 responses**
- **Adapted from BRFSS questions developed by Dr. Jim Hadler, CT**

MS Evaluation

- **Identify routine behaviors**
- **Influence of FTB on behaviors**
- **Message reach**
- **Differences among different groups**

MS Evaluation

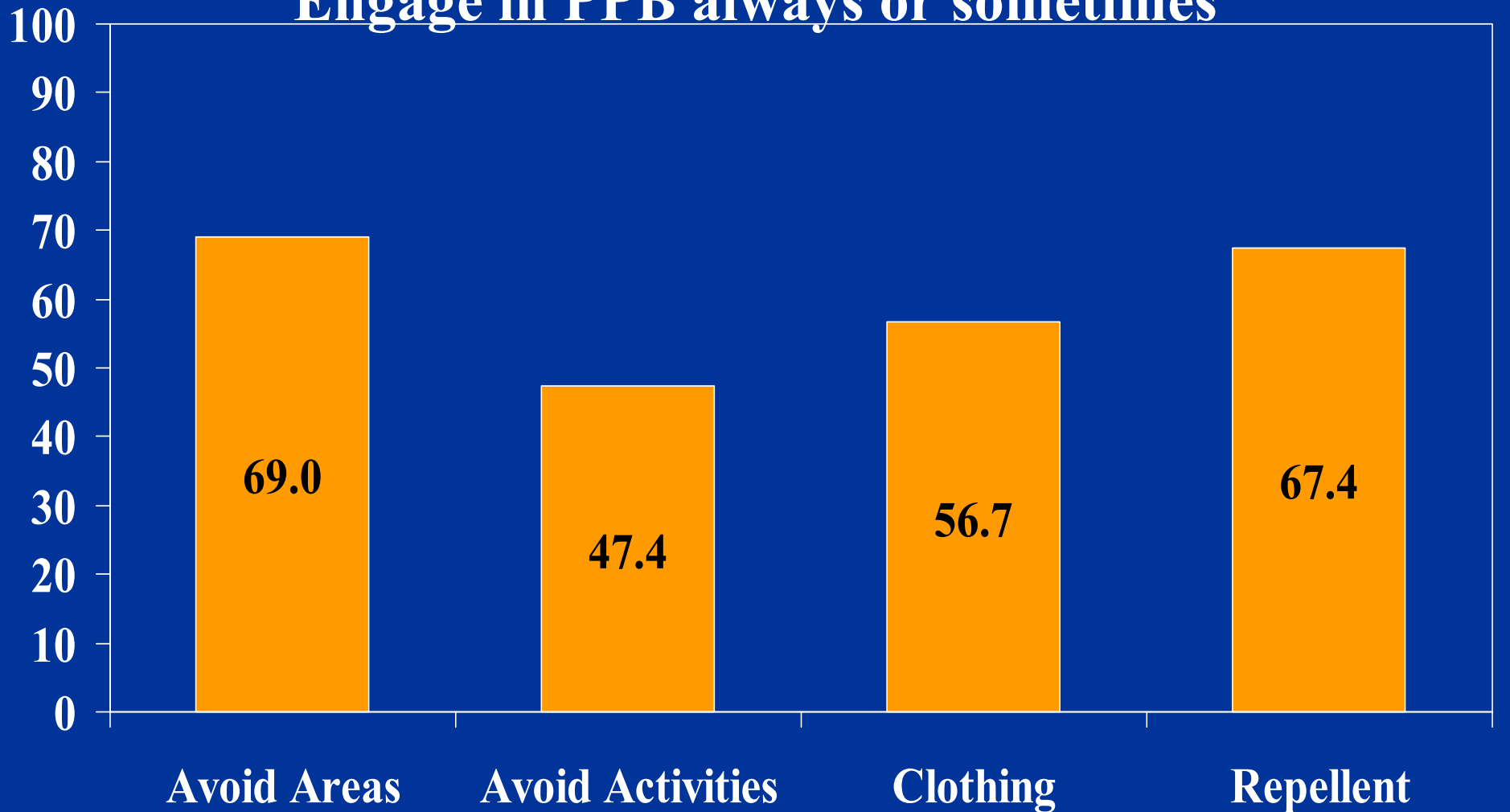
General Behavior - Days outside for > 30 minutes



MS Evaluation

Personal Protective Behaviors (PPB)

Engage in PPB always or sometimes

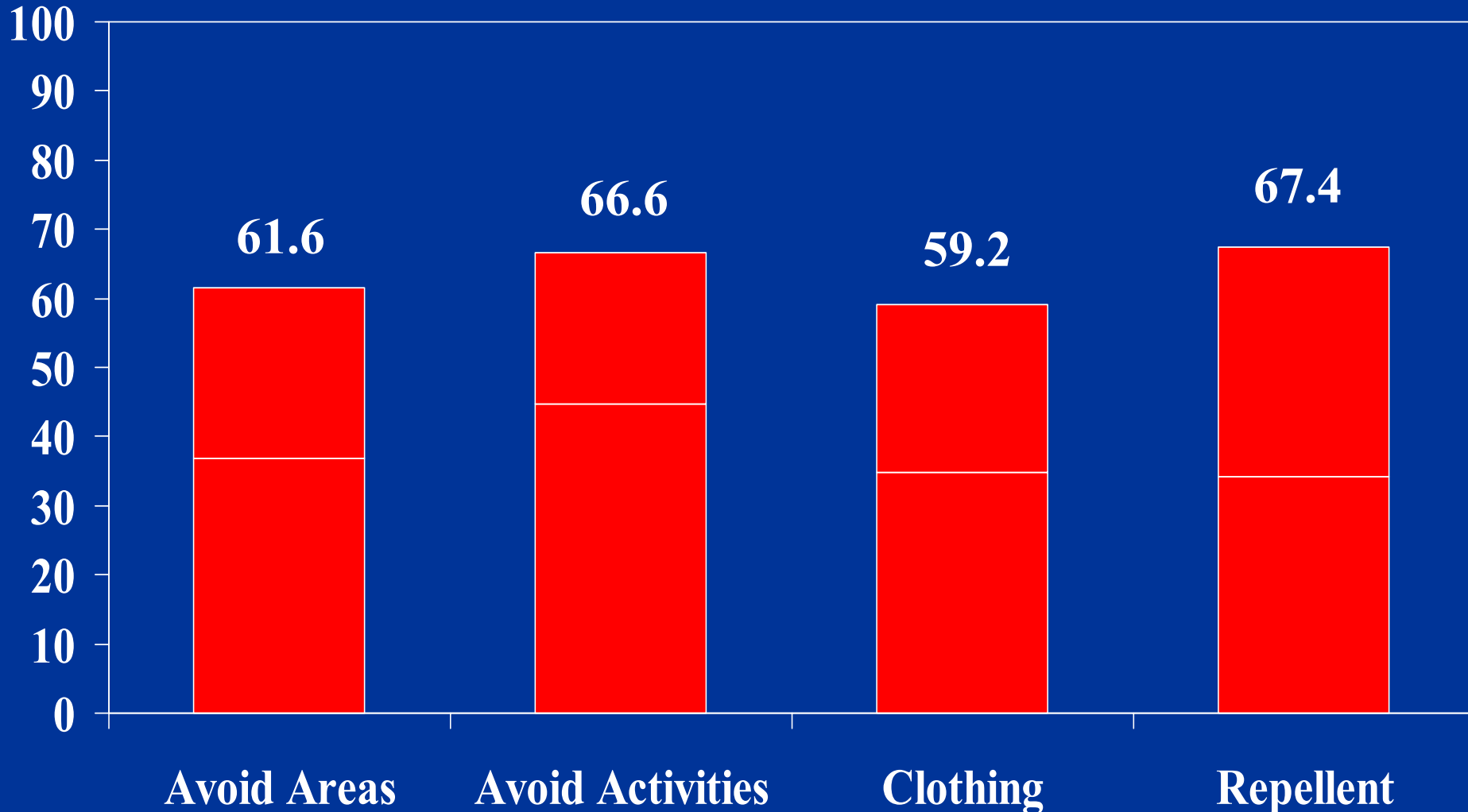


N = 816

MS Evaluation

Personal Protective Behaviors (PPB)

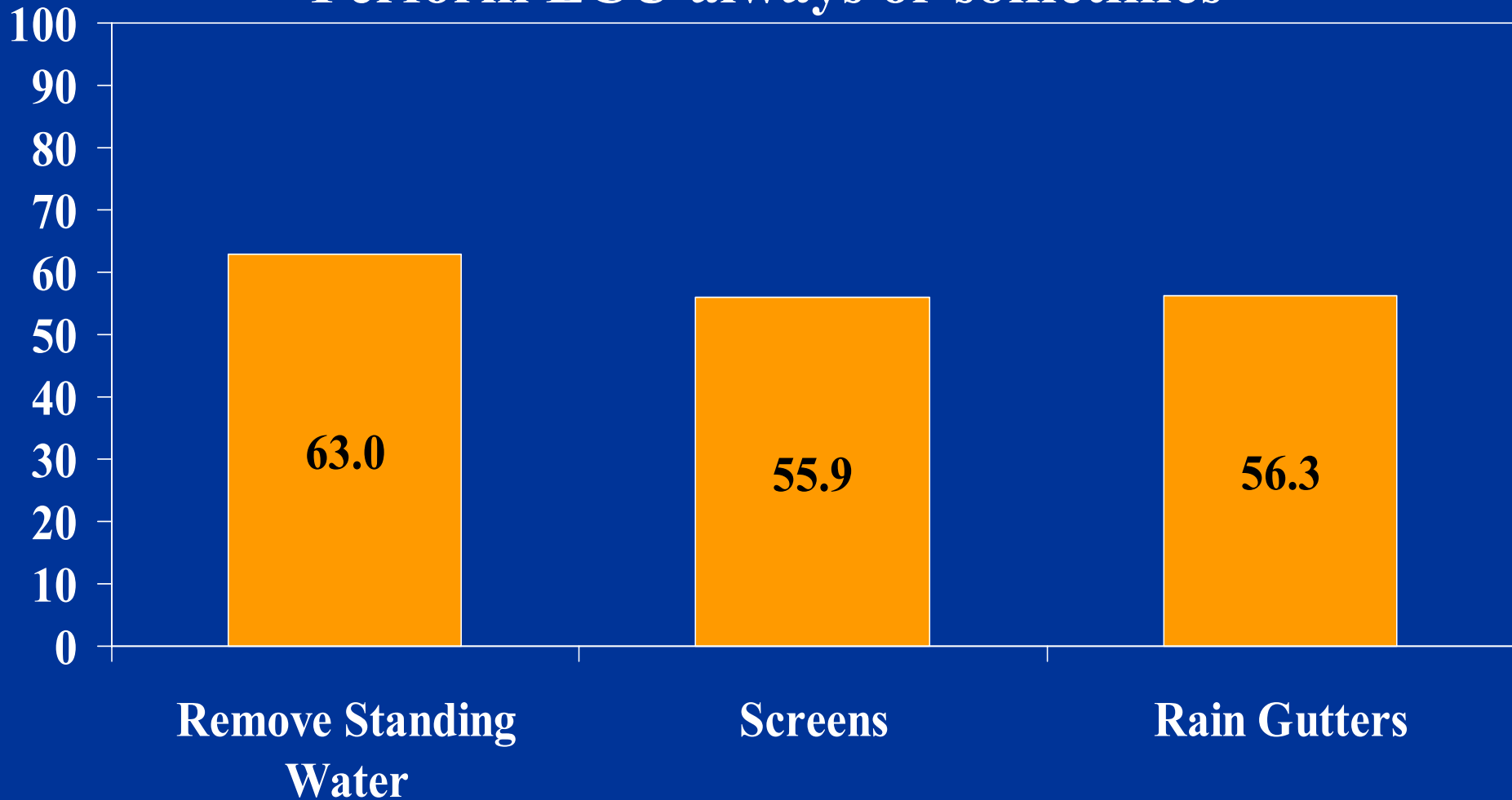
Influence of "FTB" on PPB



MS Evaluation

Environmental Clean Up (ECU)

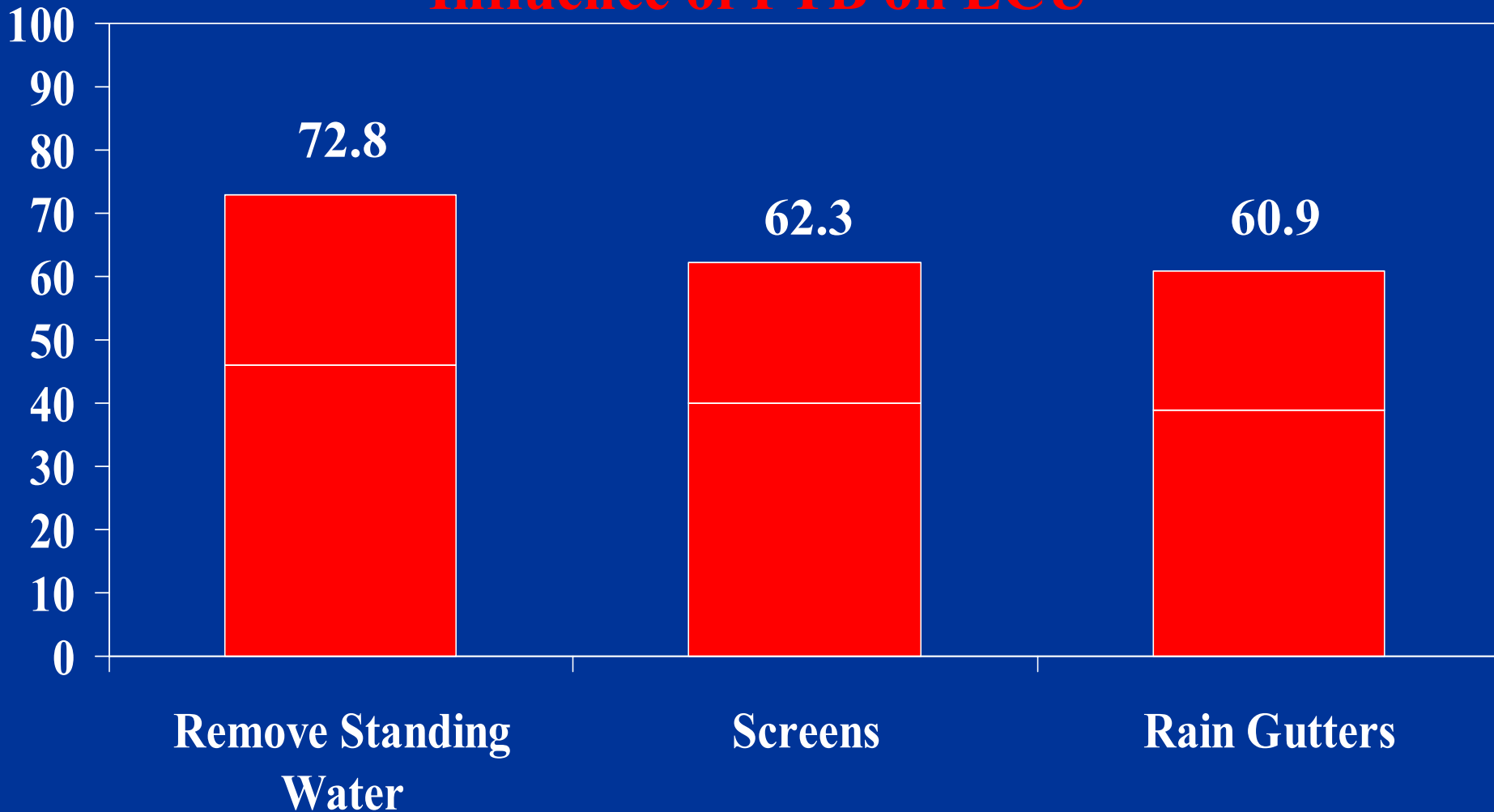
Perform ECU always or sometimes



MS Evaluation

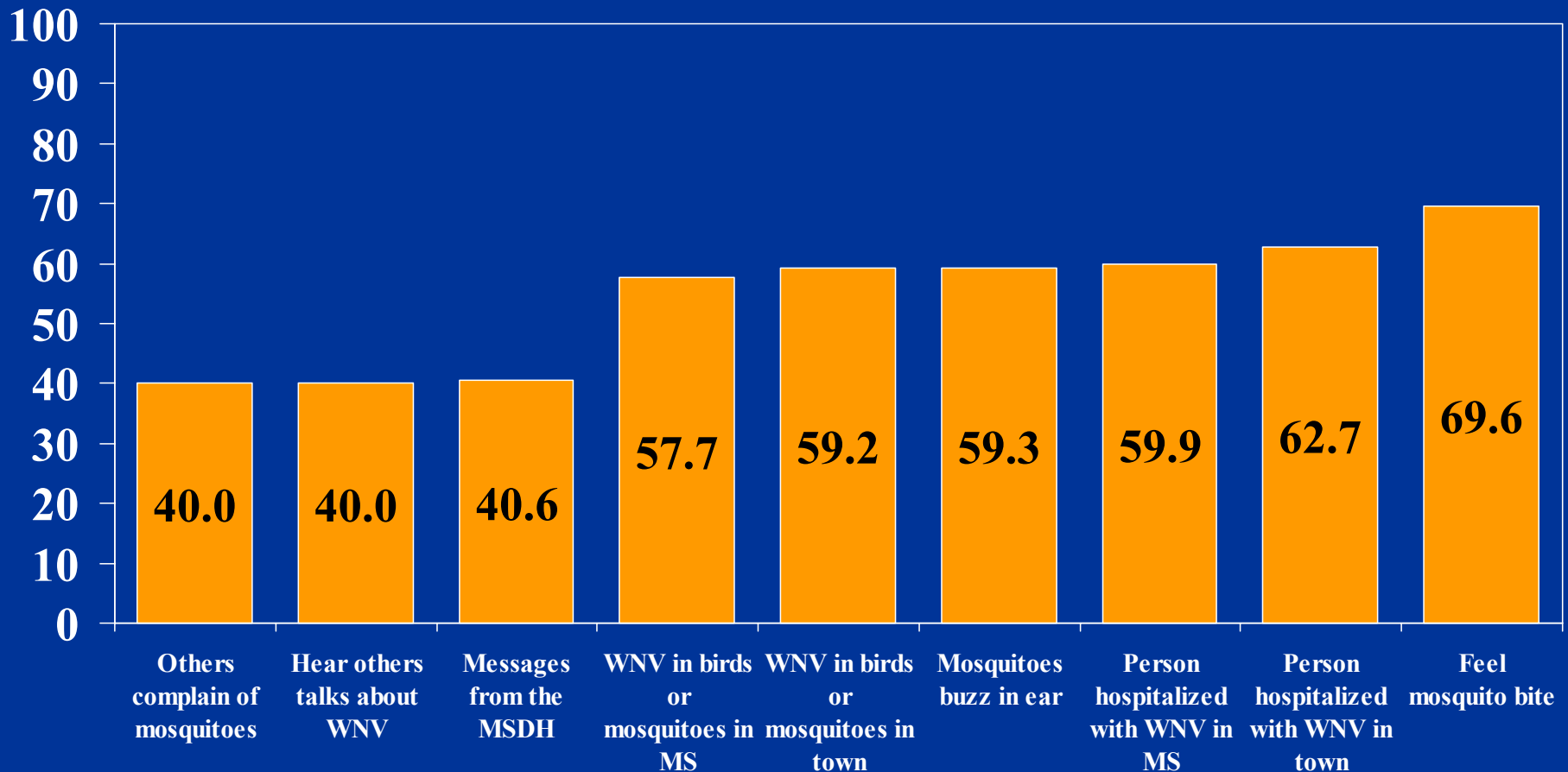
Environmental Clean Up (ECU)

Influence of FTB on ECU



MS Evaluation

“Very Important” Taking Precautions



MS Evaluation

Have You Seen or Heard the FTB PSA's?

Response	Percent
Yes	62.6
No	35.3

N = 816

MS Evaluation

Did They Make You Think Differently?

ACTION	PERCENT
Mosquito Repellent	
Yes	64.9
No	32.7
Remove Standing Water	
Yes	77.8
No	19.5

Were there differences by....

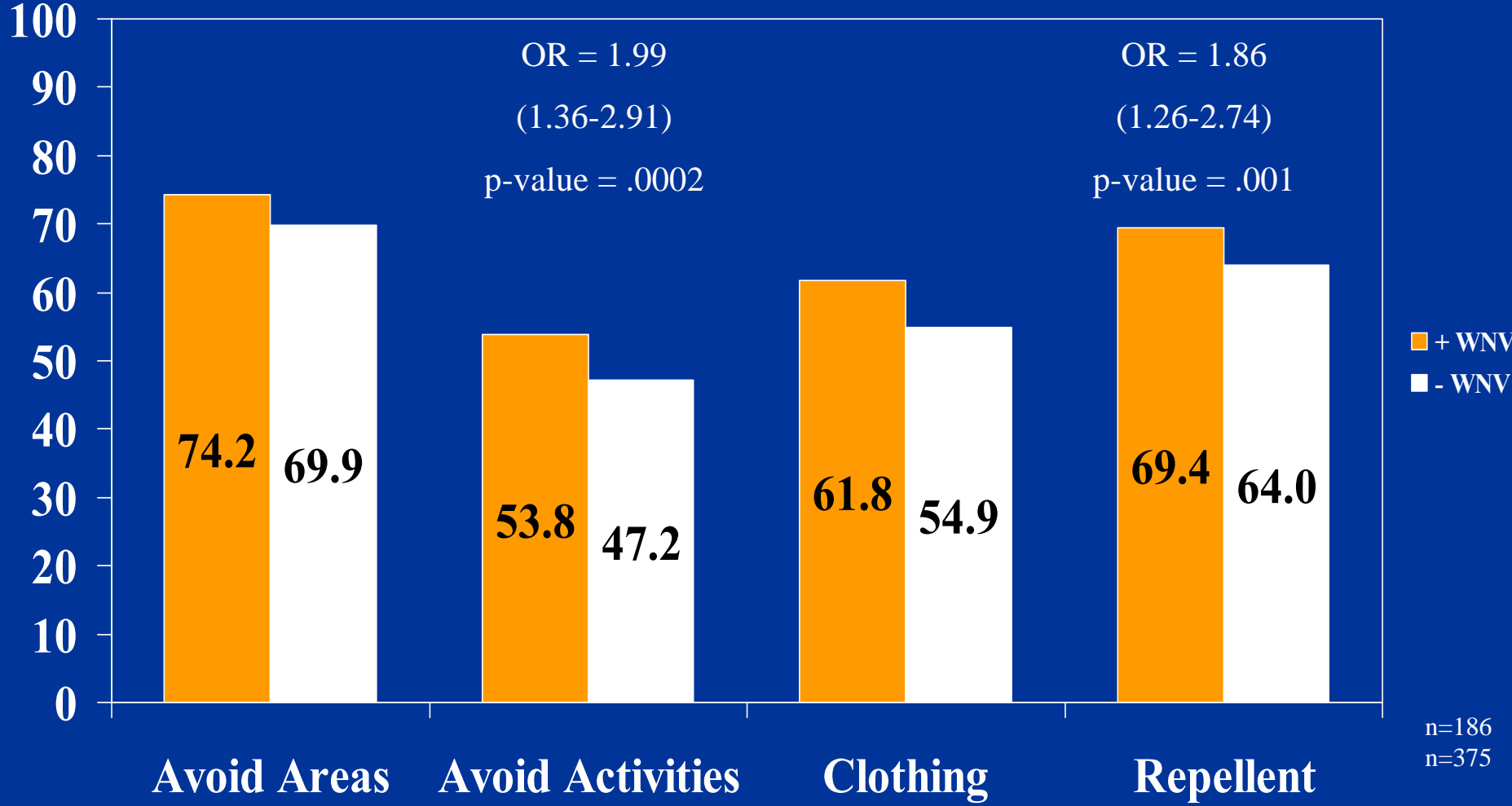
- **Presence of WNV in your county?**
- **Sex?**
- **Age?**
- **Being very worried about WNV?**

Did these factors have an effect on PPB's and ECU, or the influence of FTB?

Know WNV present vs Know WNV not present in County

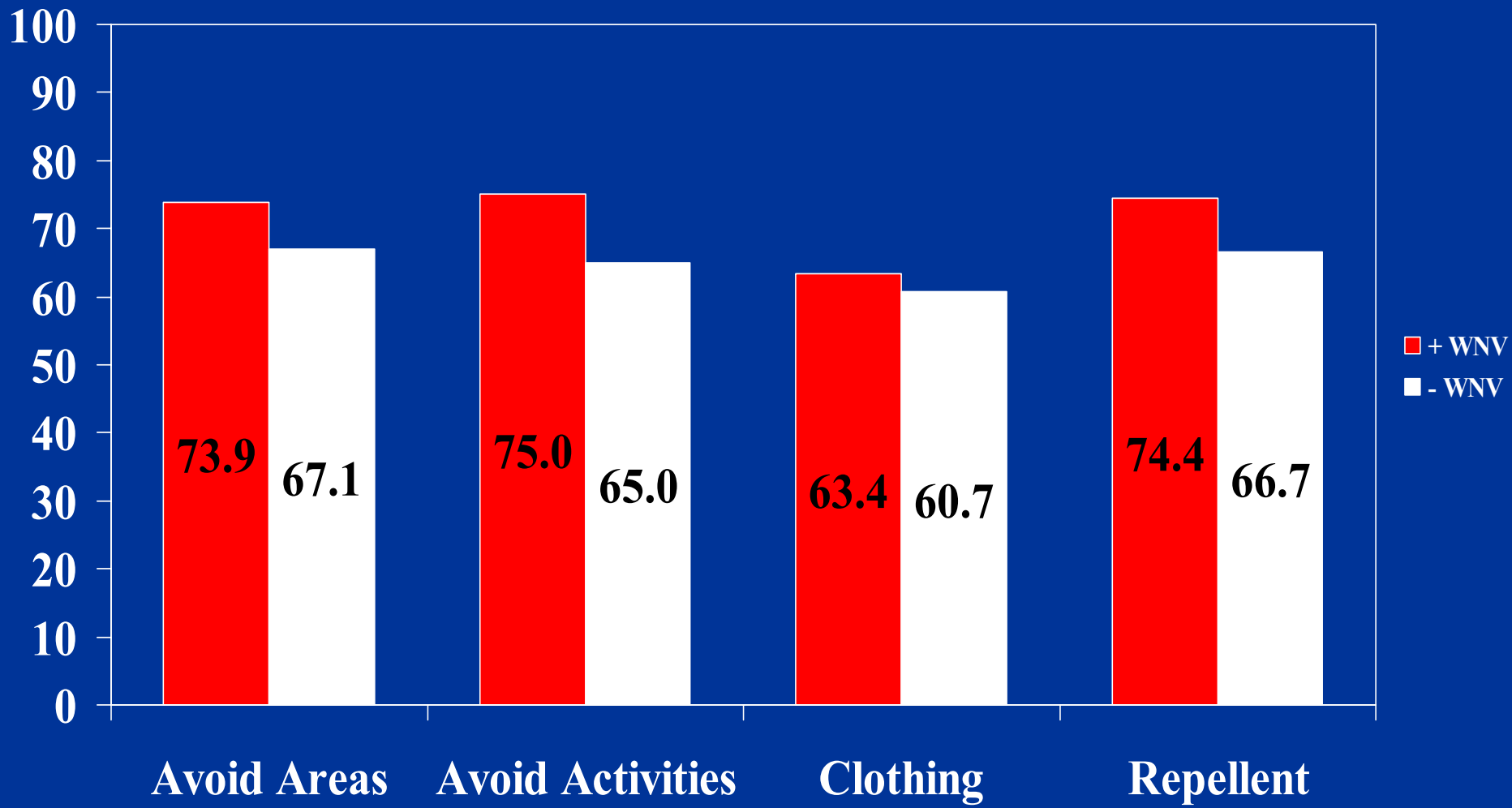
PPB

Engage in PPB always or sometimes



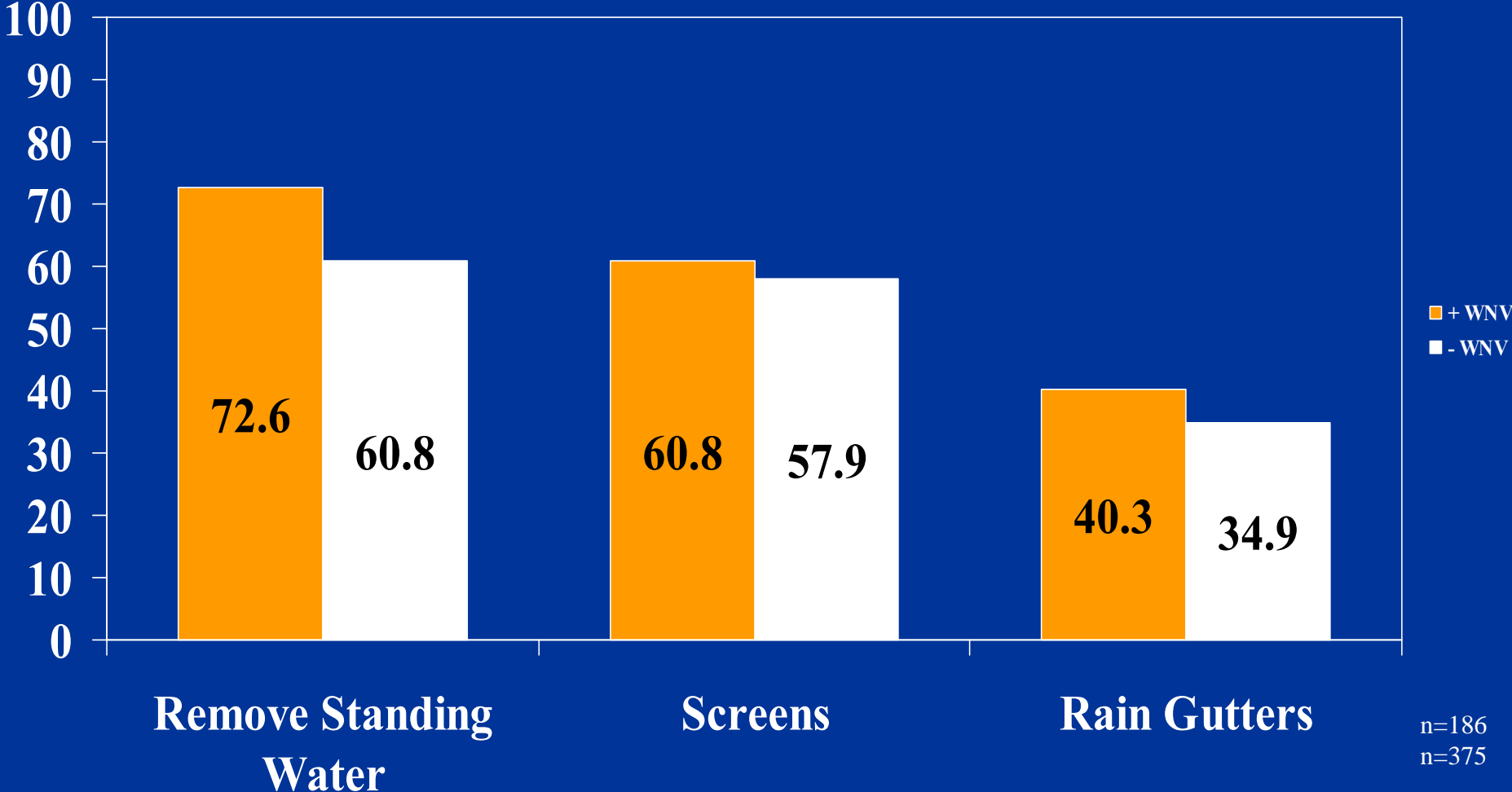
Know WNV present vs Know WNV not present in County PPB

Influence of "FTB" on PPB



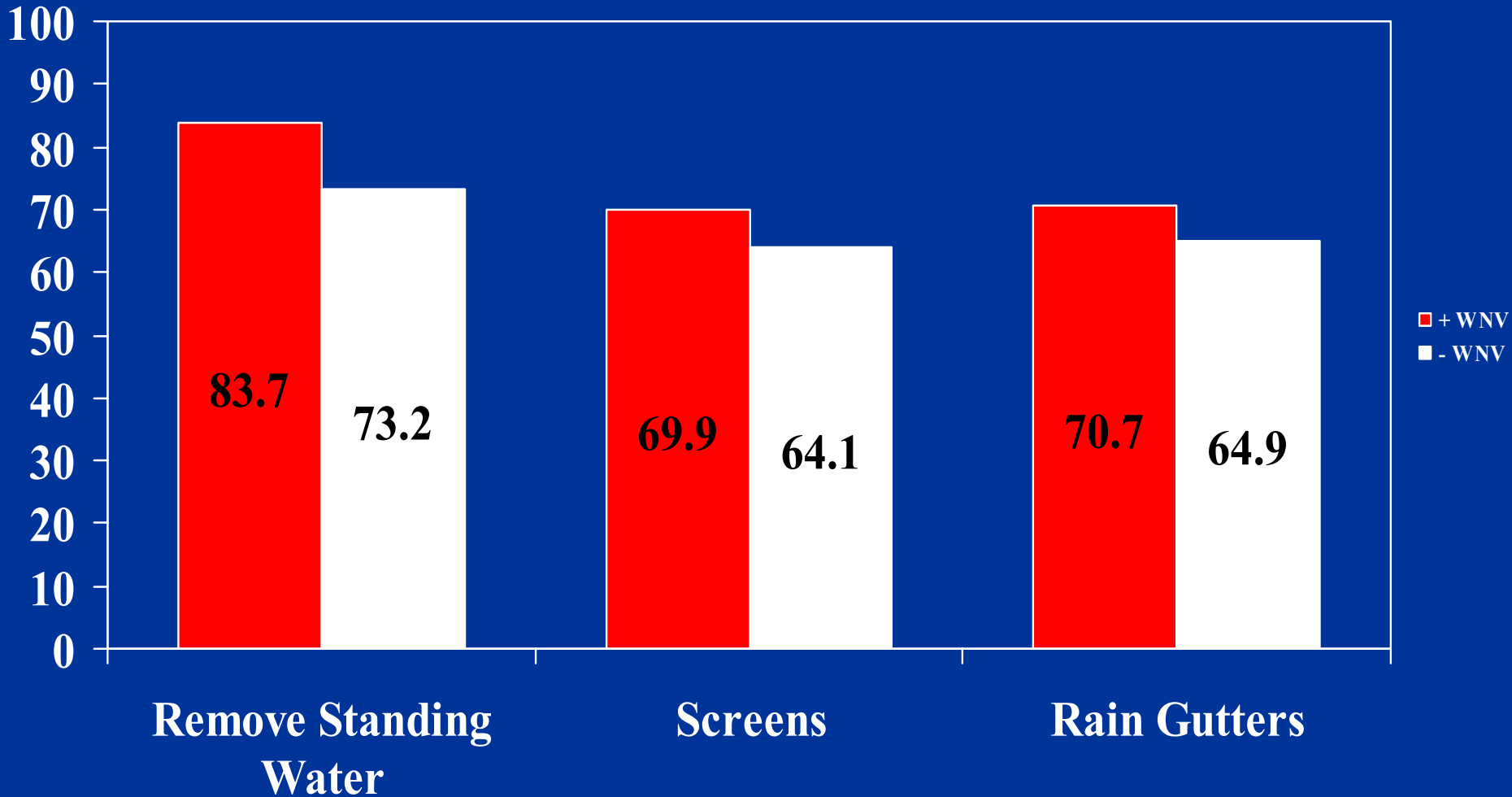
Know WNV present vs Know WNV not present in County ECU

Perform ECU always or sometimes



Know WNV present vs Know WNV not present in County ECU

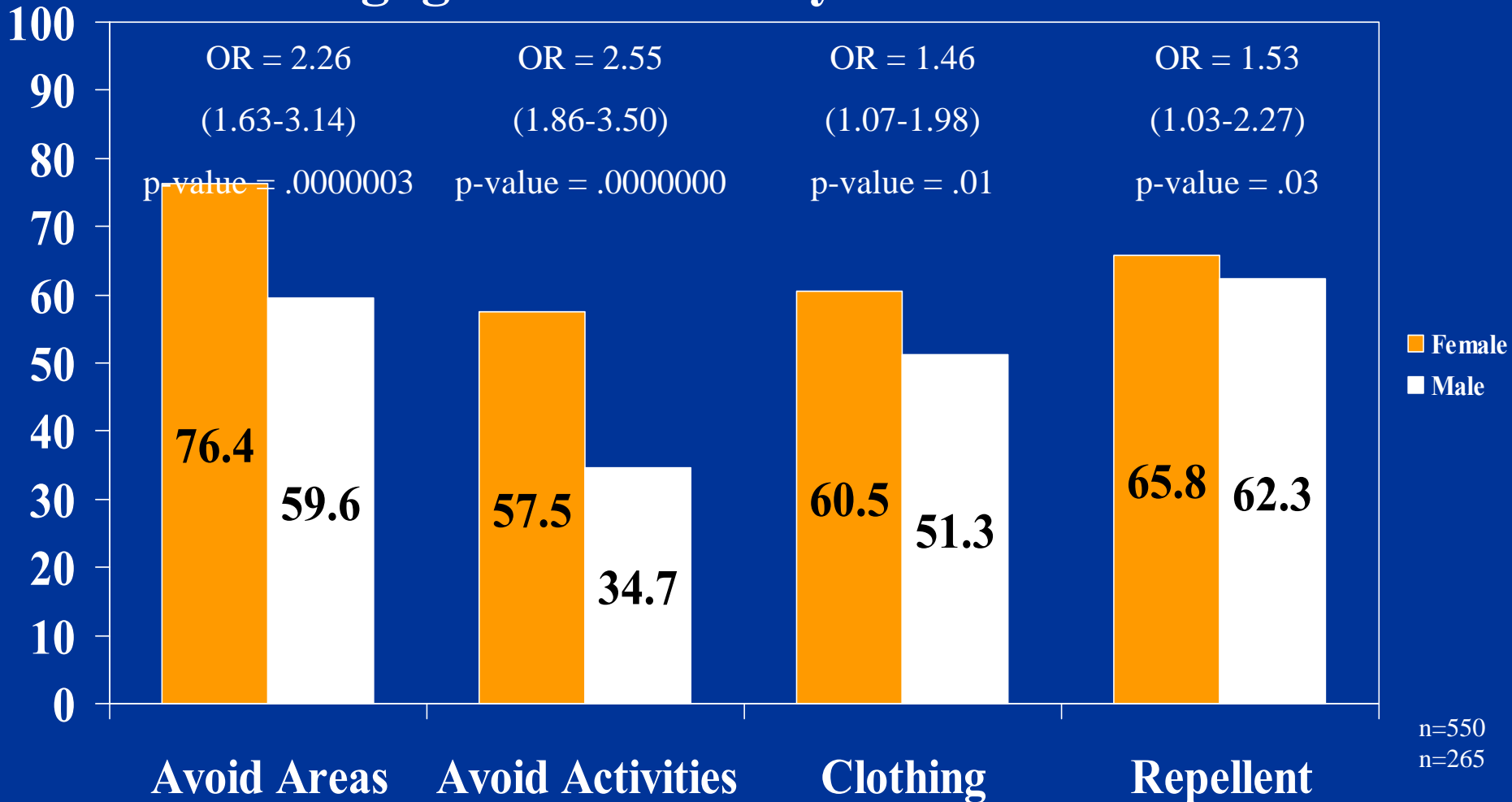
Influence of "FTB" on ECU



Female vs Male

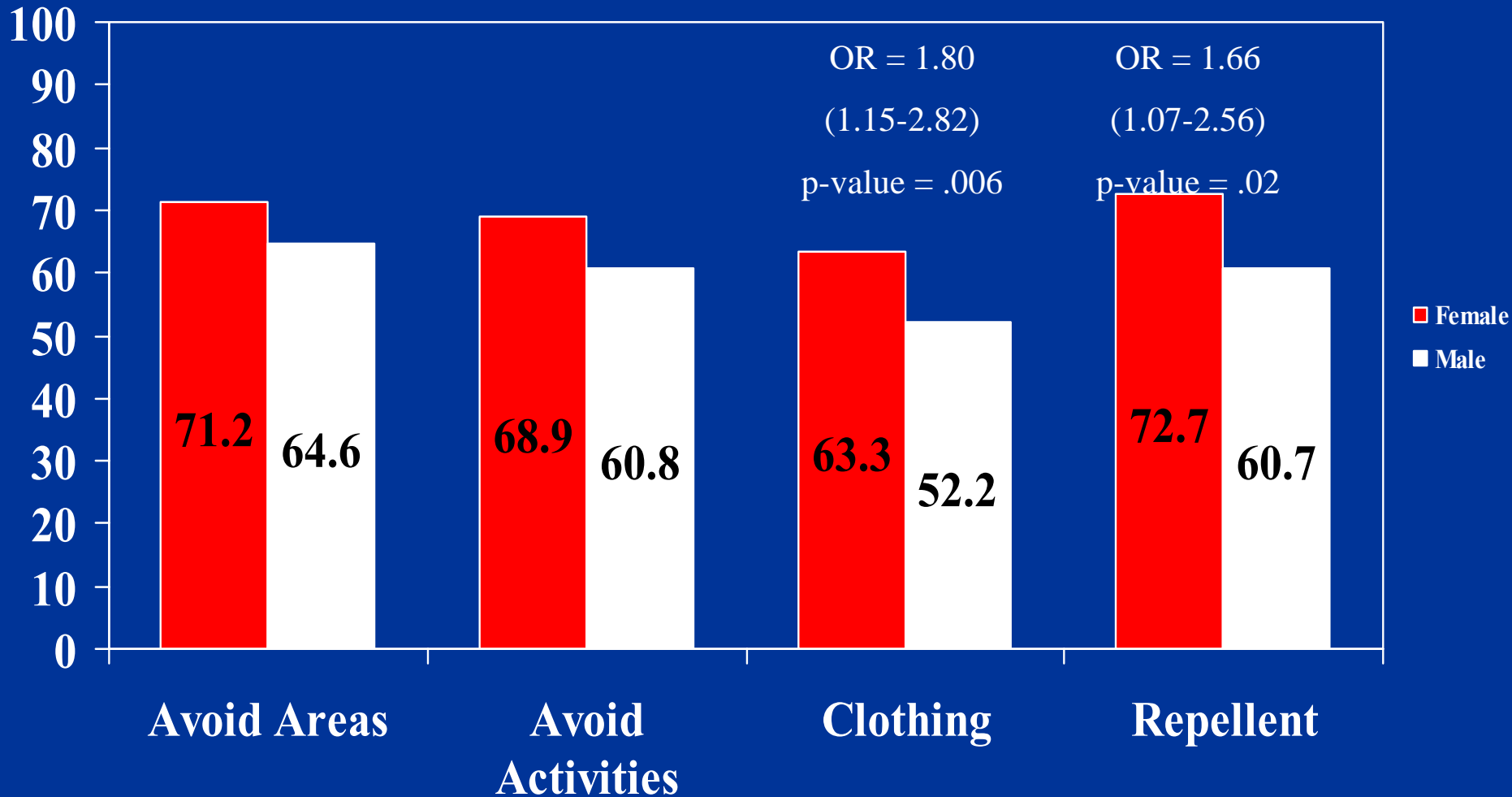
PPB

Engage in PPB always or sometimes



Female vs Male PPB

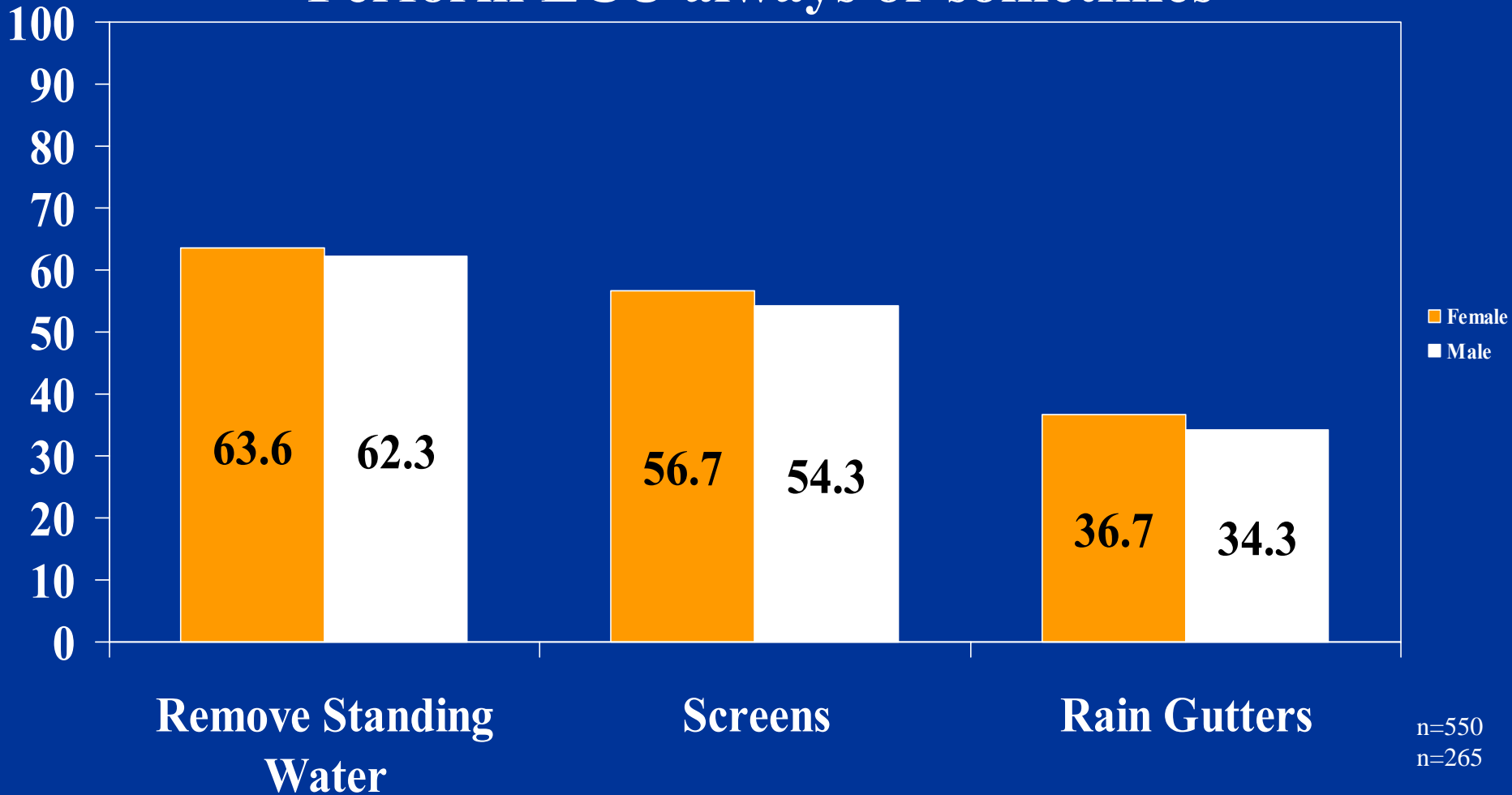
Influence of "FTB" on PPB



Female vs Male

ECU

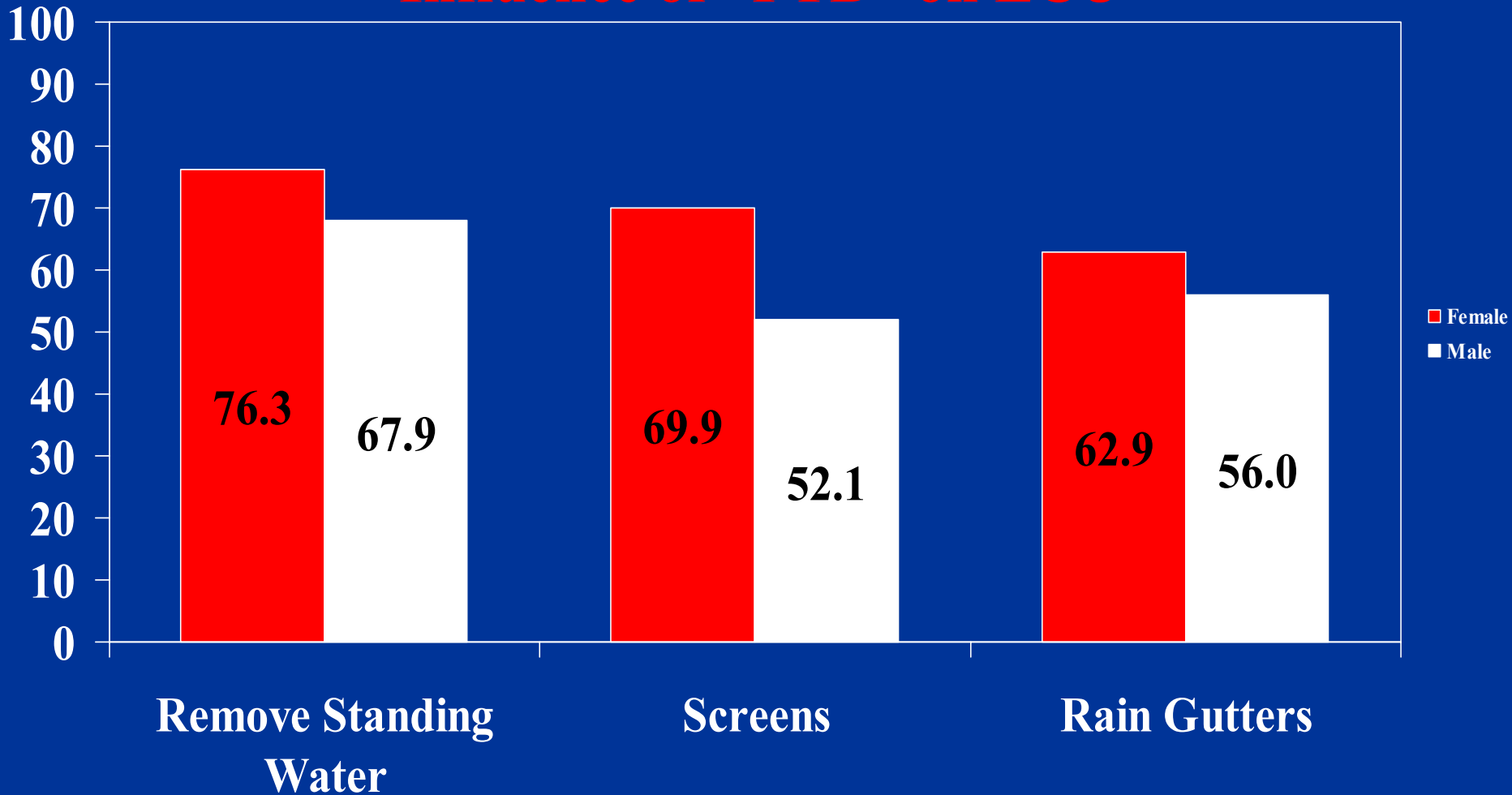
Perform ECU always or sometimes



Female vs Male

ECU

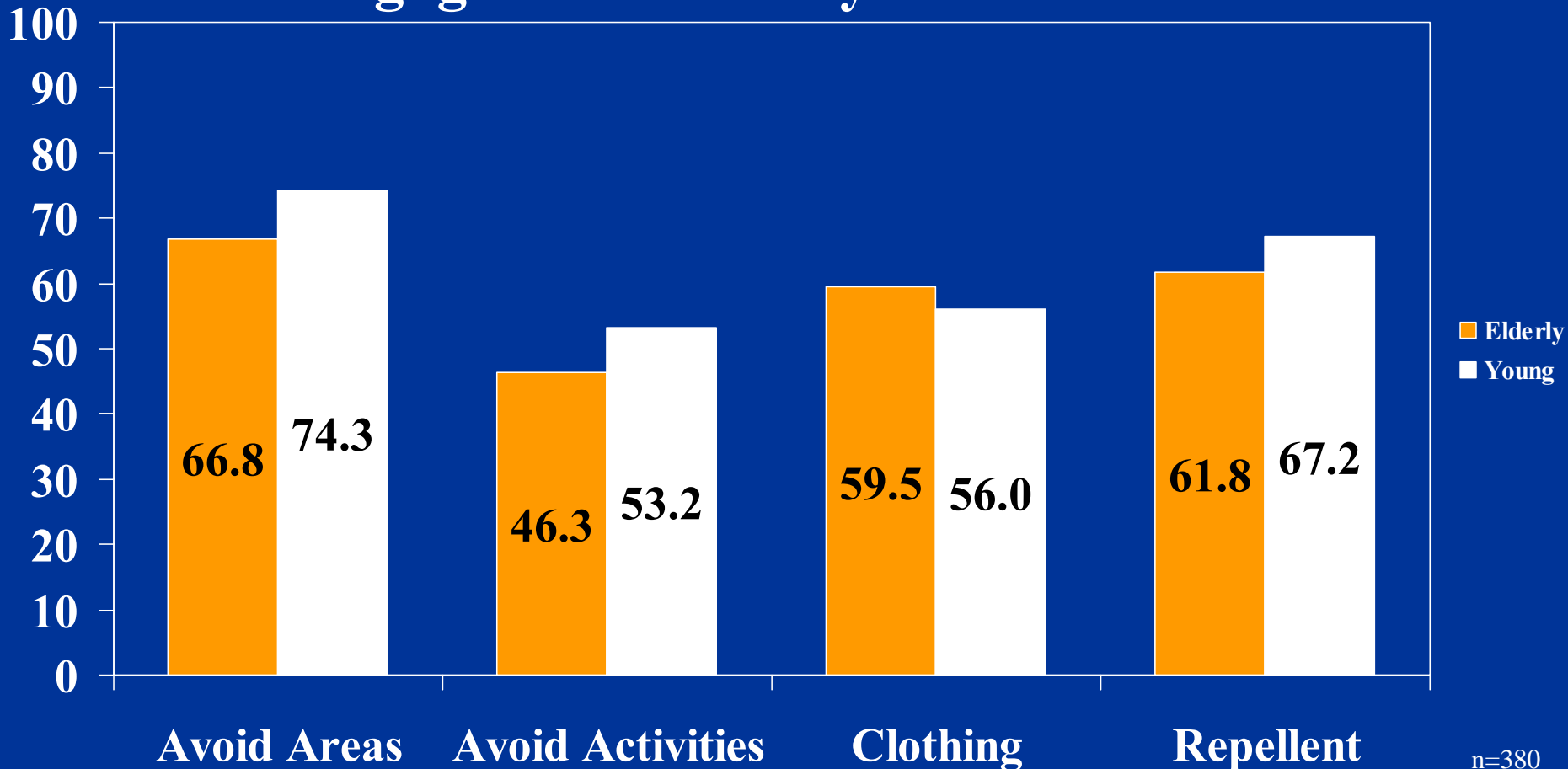
Influence of "FTB" on ECU



Older (>49yrs) vs Younger (18-59yrs)

PPB

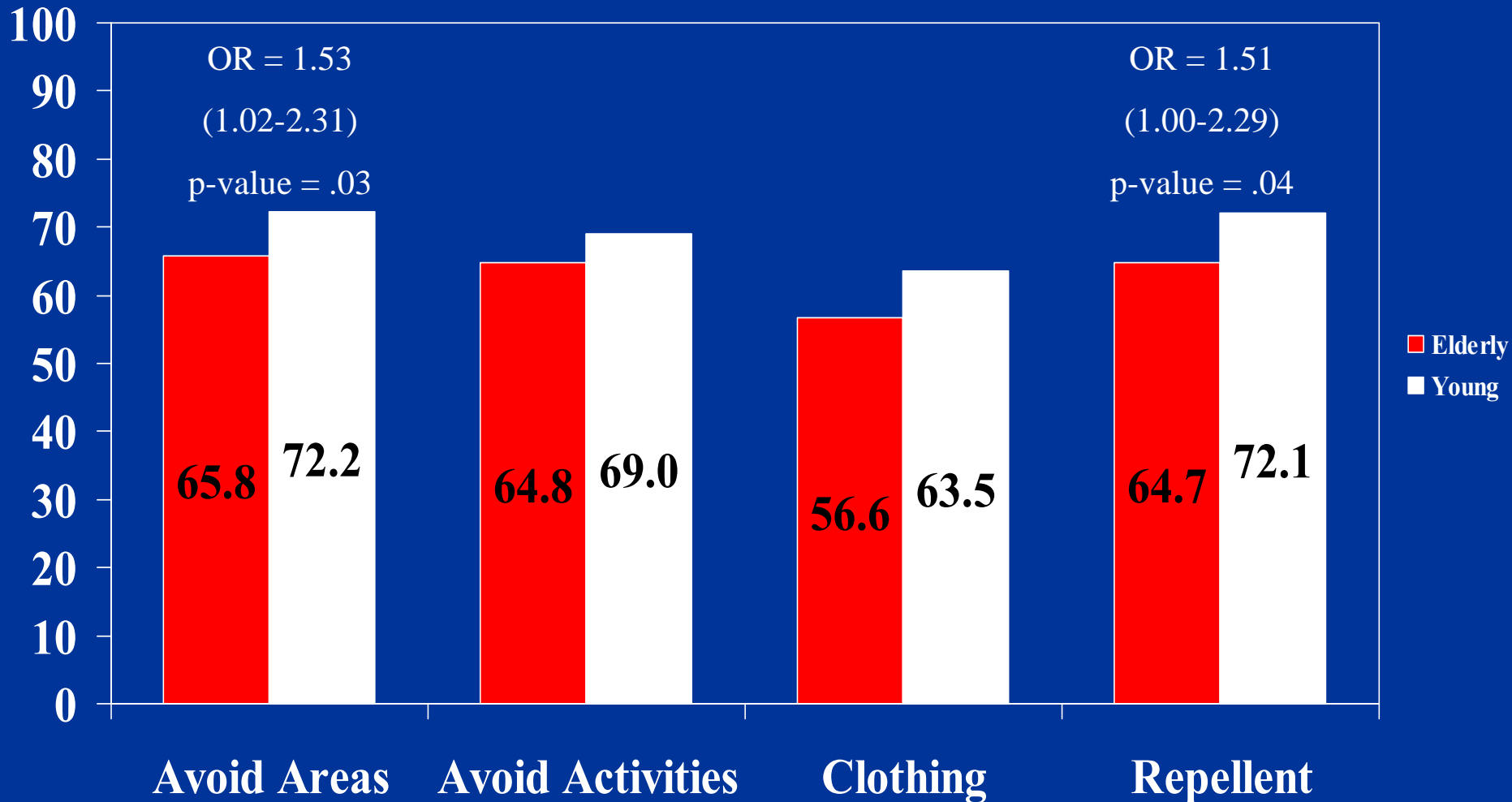
Engage in PPB always or sometimes



n=380
n=436

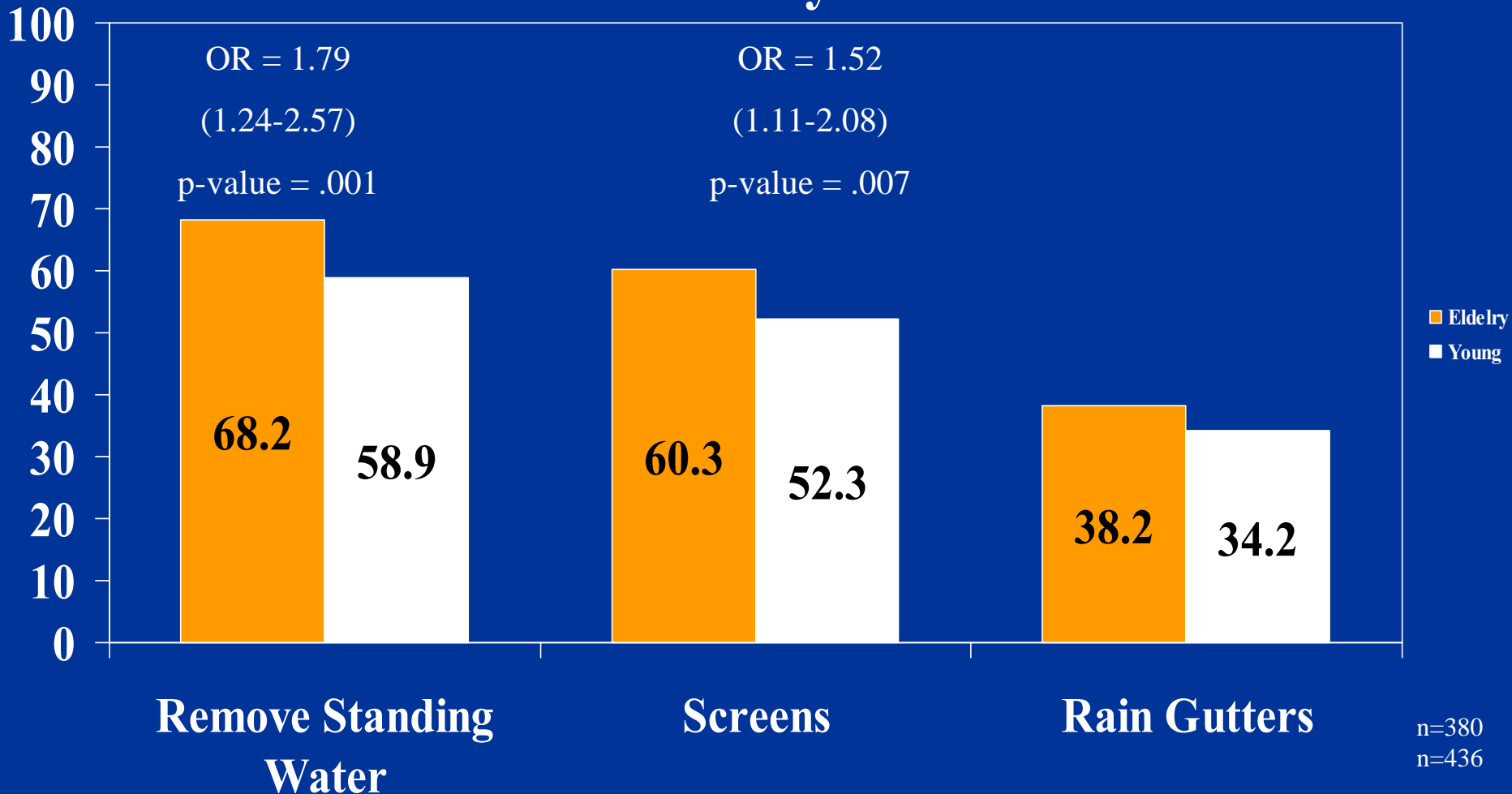
Older (>49yrs) vs Younger (18-59yrs) PPB

Influence of "FTB" on PPB



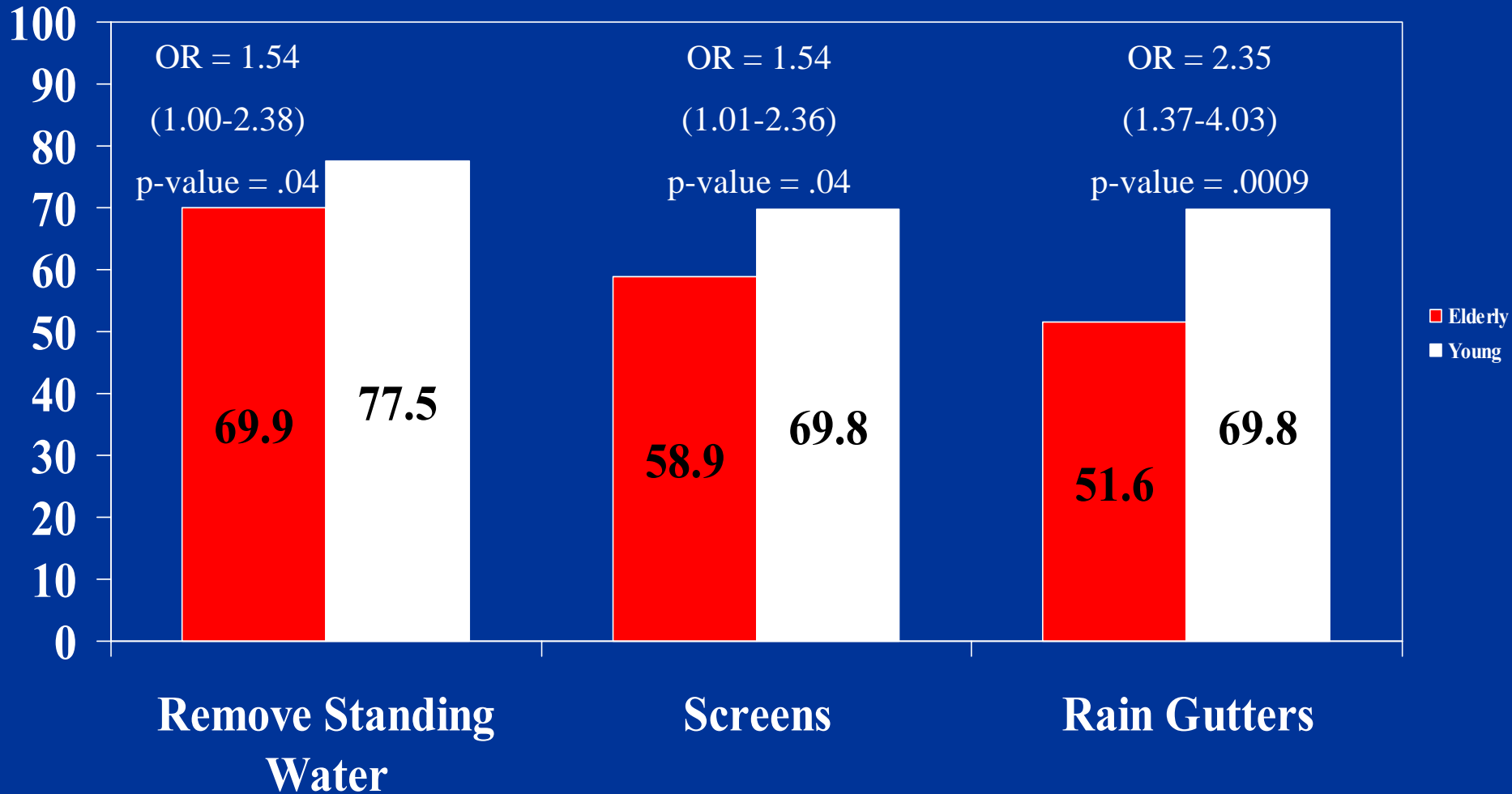
Older (>49yrs) vs Younger (18-59yrs) ECU

Perform ECU always or sometimes



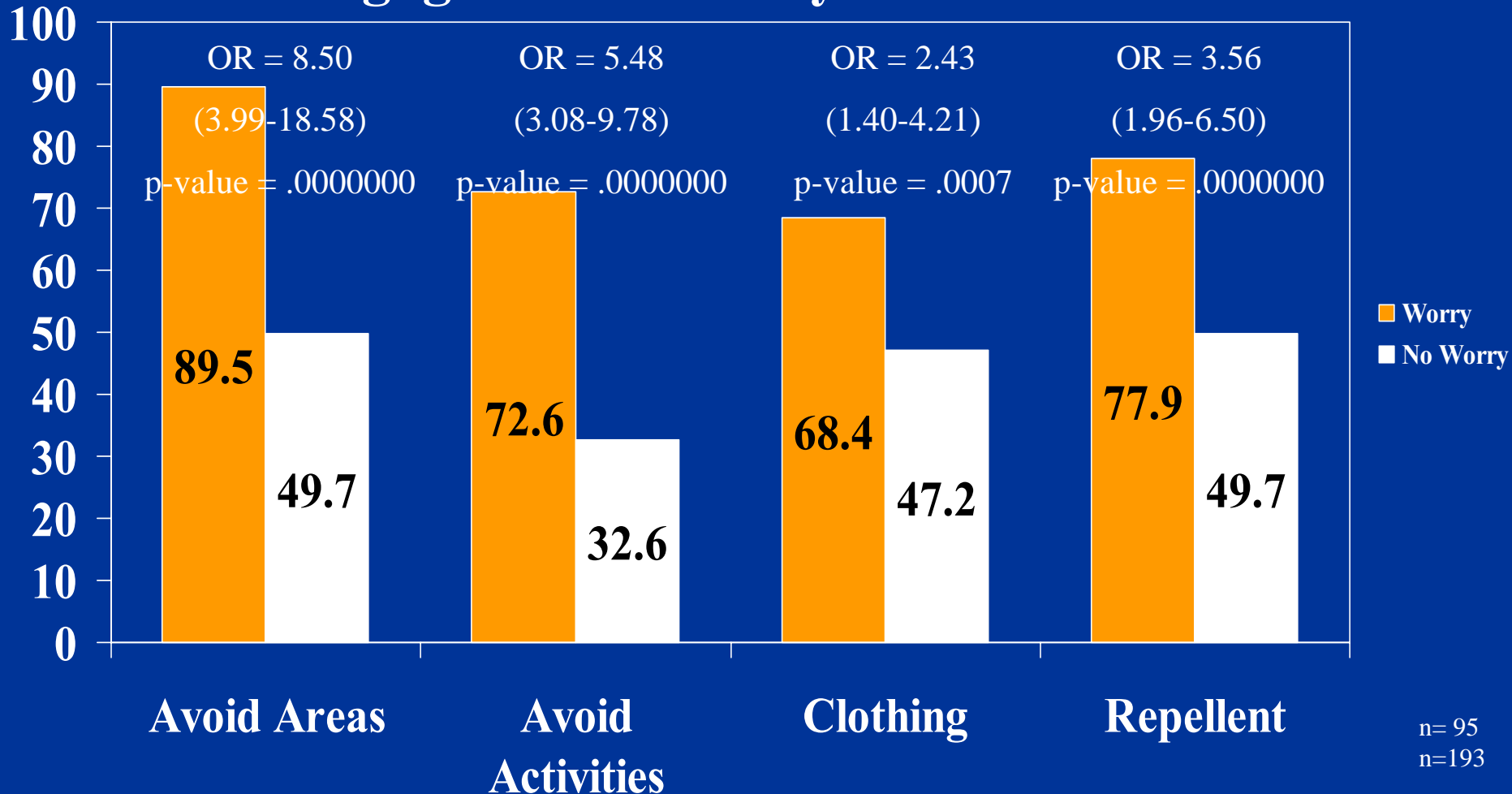
Older (>49yrs) vs Younger (18-59yrs) ECU

Influence of "FTB" on ECU



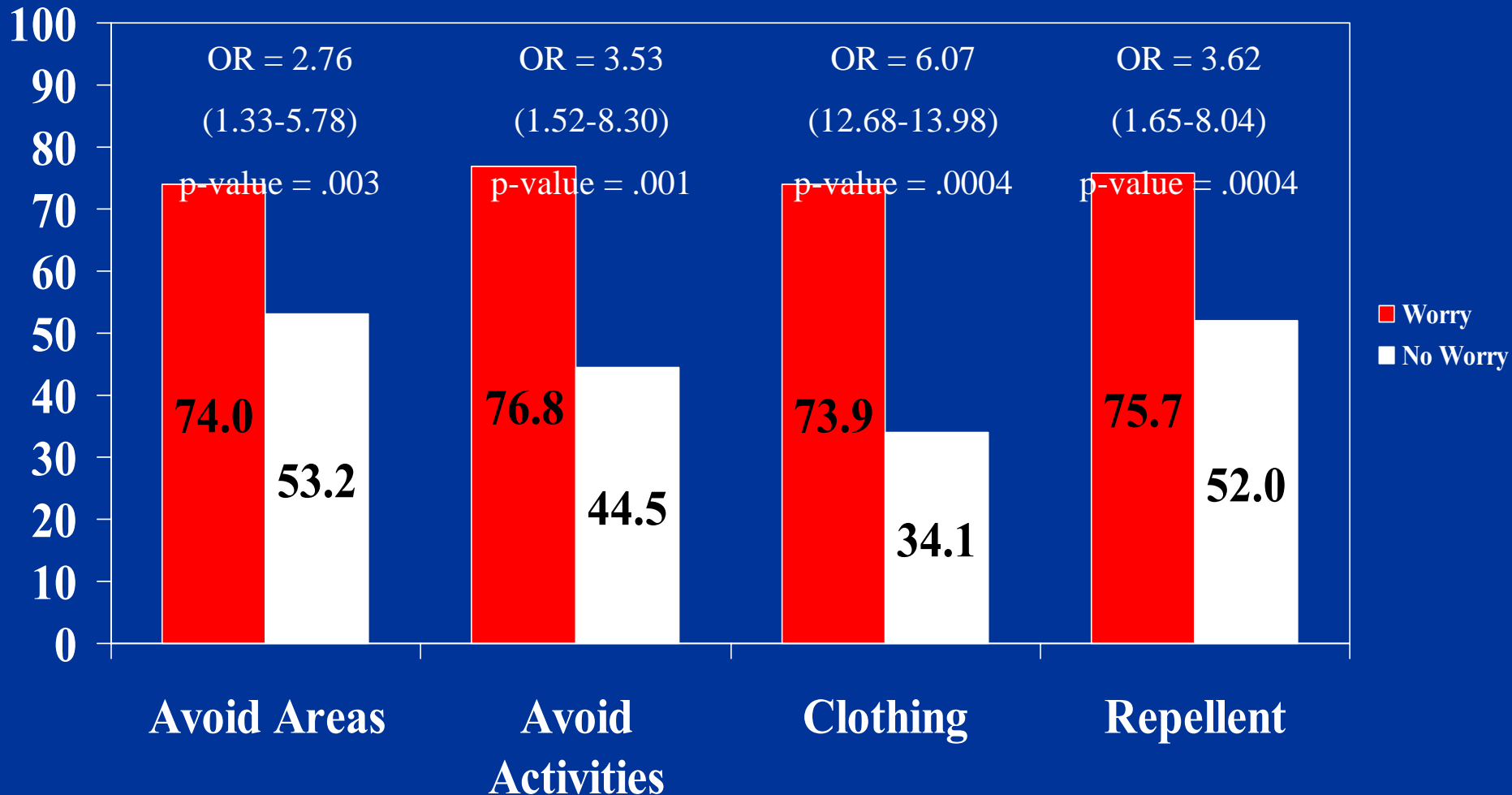
Very Worried vs Not Worried PPB

Engage in PPB always or sometimes



Very Worried vs Not Worried PPB

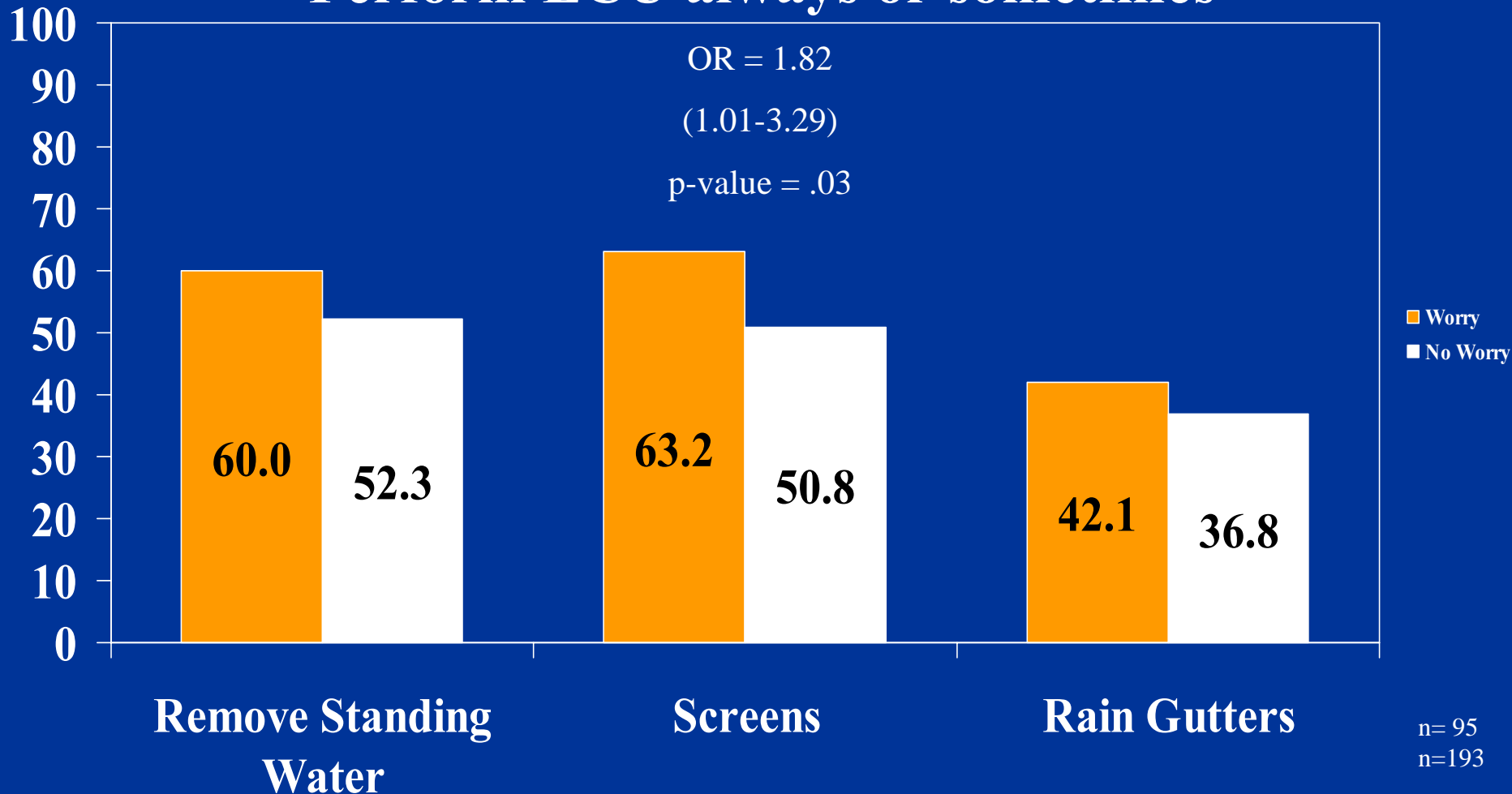
Influence of "FTB" on PPB



Very Worried vs Not Worried

ECU

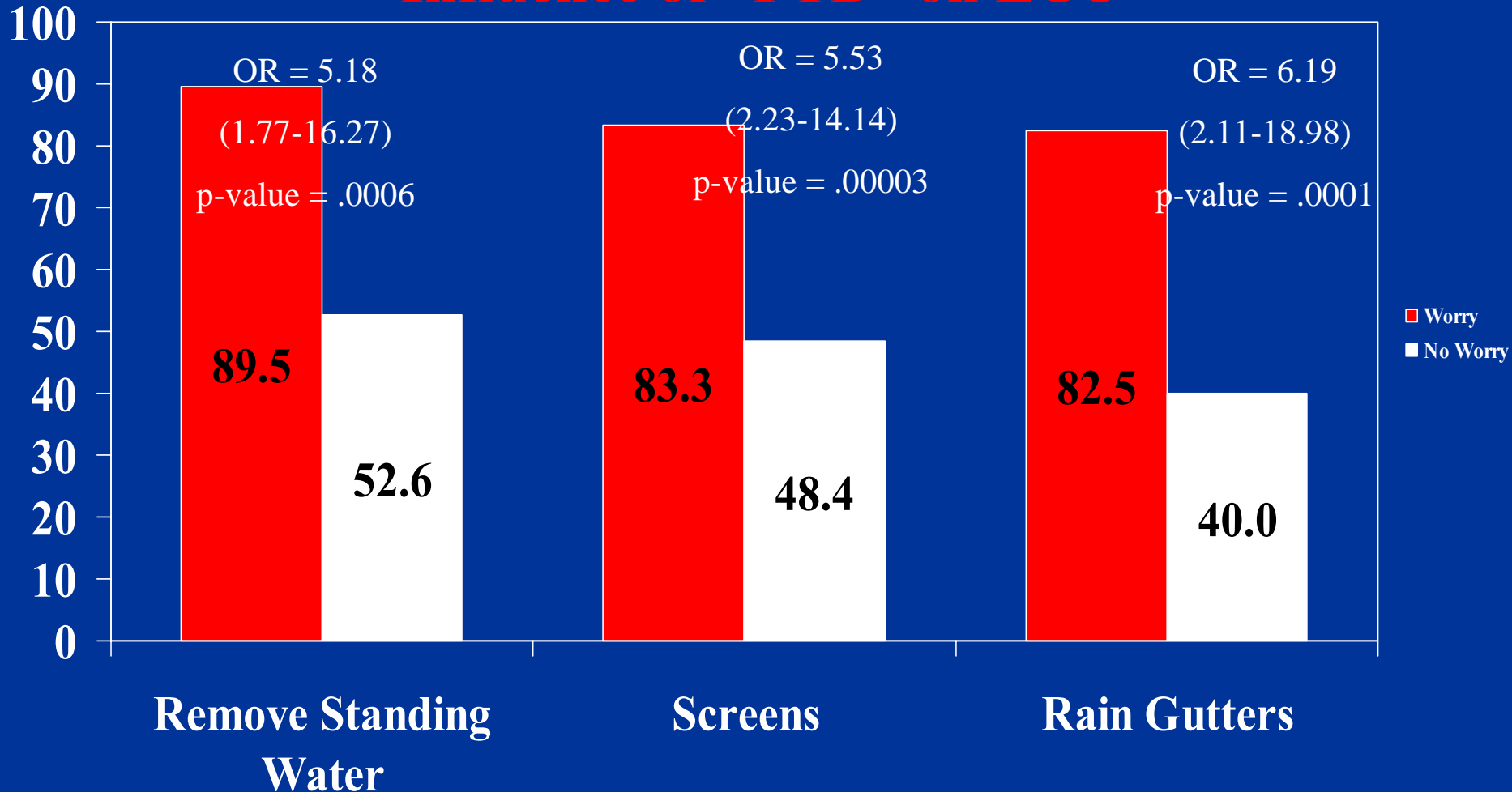
Perform ECU always or sometimes



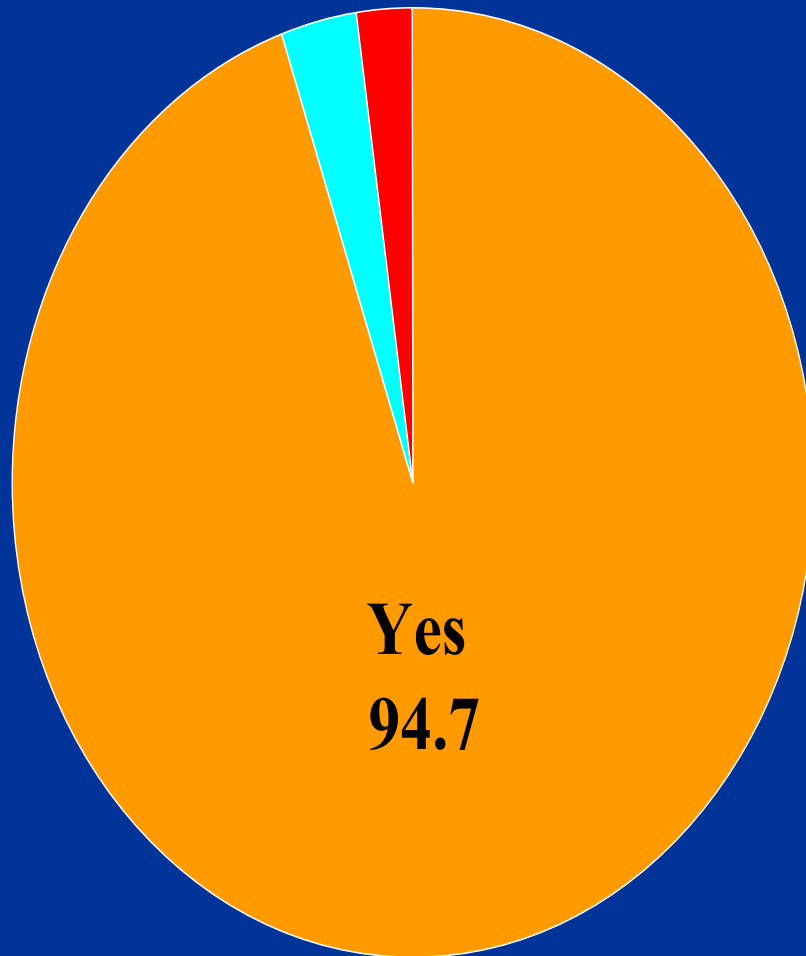
Very Worried vs Not Worried

ECU

Influence of "FTB" on ECU



OK to Spray?



Conclusions

- **Majority support spraying**
- **Persons very worried about WNV more likely to perform PPB's and ECU**
- **Next season**
 - **New Message..."Cover the women and children, run for your lives".....in order to**
 - **Create hysteria to ensure the use of PPB's and ECU's**
 - **Employ the National Guard to conduct aerial spraying daily**

Summary

- **Most people spend time outdoors three or more days per week**
- **Precautions increase as perceived risk increases**
 - **Precautions taken more often when problem becomes personal**
- **Of those who engage in PPB's**
 - **59%-67% were influenced by FTB**
- **Of those who perform ECU's**
 - **61%-73% were influenced by FTB**

Summary

- **Knowledge of WNV in county**
 - Increased use of PPB's
- **Females practiced PPB's more and were influenced by FTB more than males**
- **Elderly and Young**
 - Similar use of PPB's and influence by FTB
 - Elderly performed ECU's more
 - Young influenced by FTB more than elderly
- **If you're worried you'll do everything more and will be influenced more**

Next Season

- **Continue to promote FTB**
- **Update materials**
- **Target messages to older population**
- **Continue to evaluate effectiveness of campaign**

Limitations

- **Could not include person without a phone or who only own a cell phone**
- **Unable to determine if FTB actually prevented infections**
- **Could not measure impact of other influences**
- **Did not perform pre-campaign evaluation to provide comparison**

Acknowledgements

MSDH

- **Camille Forteich**
- **Dr. Mary Currier**

MHPRC

- **Dr. Friese**
- **Troy Blanchard**