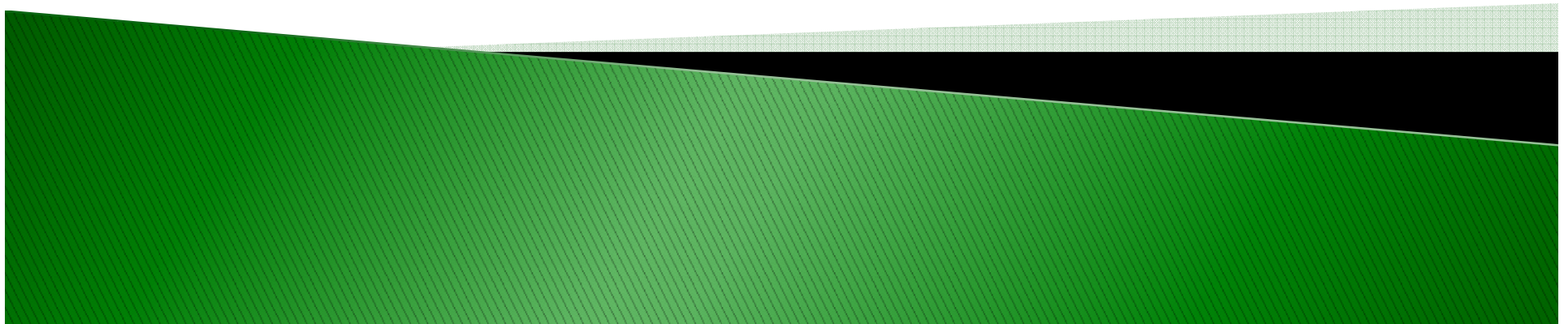


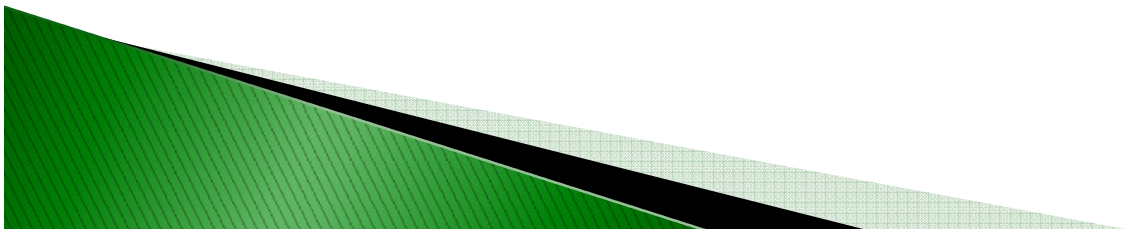
Does Newborn Hearing Screening Contribute to Parent Anxiety?

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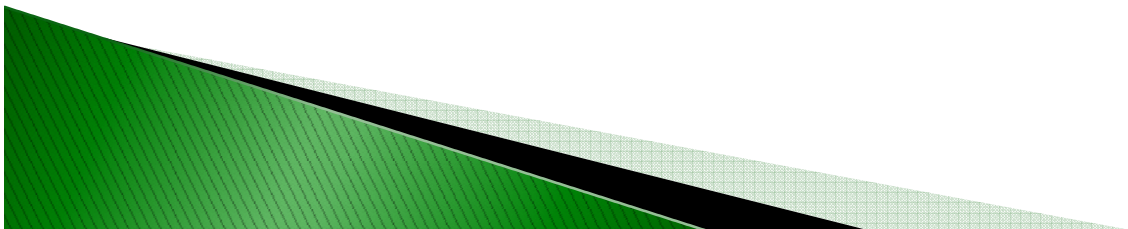
Review of the Literature

- ▶ In past 16 years, newborn hearing screening has become the standard of care in the United States, expanding from 3% of newborns in 1993 to approximately 95% today.
- ▶ Some researchers have suggested that conducting newborn hearing screening might create unduly high levels of parental concern, anxiety, & worry (Paradise, 1999; Bess & Paradise, 1994; Clayton & Tharpe, 1998; Mencher & Devoe, 2001)



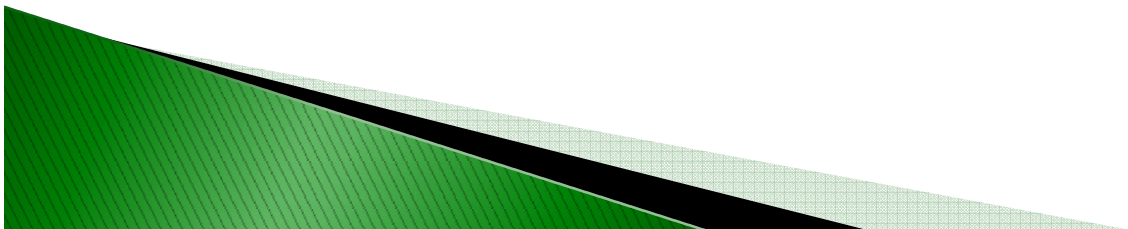
Review of the Literature

- ▶ Definition of “worry”:
 - For the sake of this study, the term “worry” will be used to generally to represent the *constructs of worry, concern, anxiety, or stress associated with newborn hearing screening.*



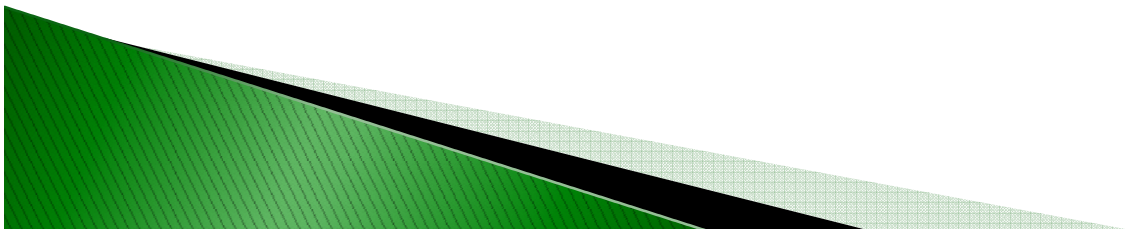
Review of the Literature

- ▶ Subsequent research has divided these studies into two broad categories:
 - Studies that used 4–5 point Likert-type item to address the primary question of whether newborn hearing screening leads to high levels of parental worry.
 - Studies that used a multi-item scale to measure worry.



4–5 Point Likert Scale

- ▶ 4–15% of mothers of all screened infants
- ▶ 14–25% of mothers of infants who failed the initial hearing screening
- ▶ Reported being “moderately worried” or “very worried” about their infant’s hearing

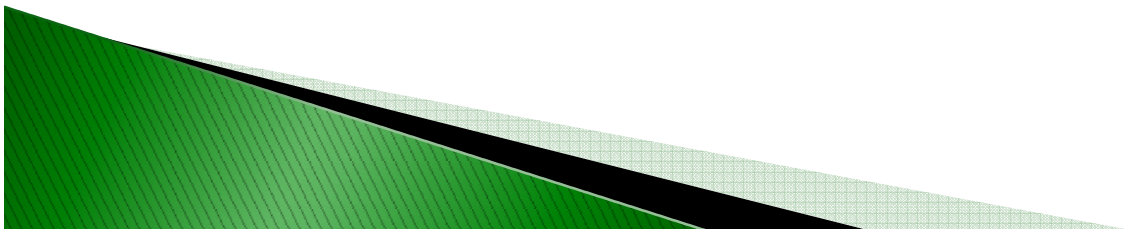


4–5 Point Likert Scale

- ▶ Tueller (2006) reported that these studies yielded useful information, but had limited value because:
 1. Most studies lacked comparison groups;
 2. Asked about worry in the context of the hearing screening result (which may have suggested to mothers that they should be worried);
 3. Did not collect follow-up data; and/or
 4. Had no explicit basis for comparison (i.e. were parents any more worried about infant hearing than other aspects of infant health & development?)

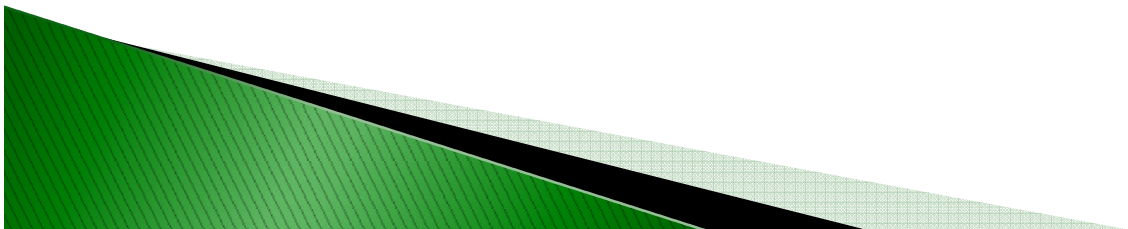
Multi-Item Scales

- ▶ These studies compared mothers of infants who had a false-positive initial hearing screening to:
 - ▶ mothers who passed the initial screening, OR
 - ▶ mothers of unscreened infants.
- ▶ These studies may have been misleading in reporting that there were no statistically significant differences between groups on levels of maternal anxiety.



Multi-Item Scales

- ▶ Measures:
 - State-Trait Anxiety Inventory (STAI)
 - Parenting Stress Index (PSI)
 - Child Vulnerability Scale (CVS)
- ▶ Because these measures were broad in scope, it is possible that no group differences would be detected – even if such differences existed.

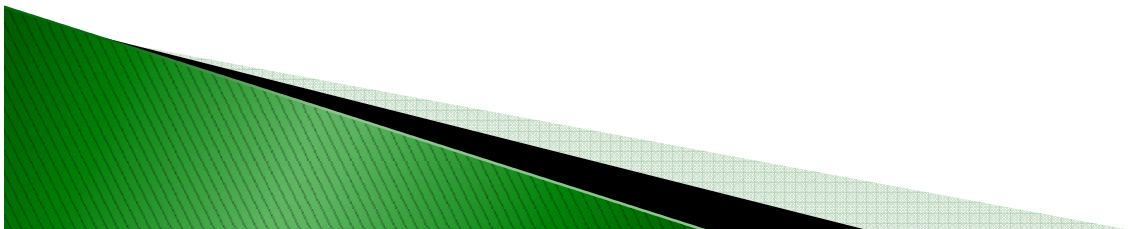


Current Study

- ▶ To more fully evaluate whether newborn hearing screening causes an undue level of worry among mothers, the current study included:
 - Comparison measures
 - Group comparisons
 - Follow-up assessments to answer:
 1. Do mothers whose infants have been screened for hearing loss worry more about infant hearing than other aspects of infant health?
 2. Do mothers whose infants have a false-positive initial hearing screening worry more about their infant's hearing than mothers whose infant's pass the initial hearing screening?

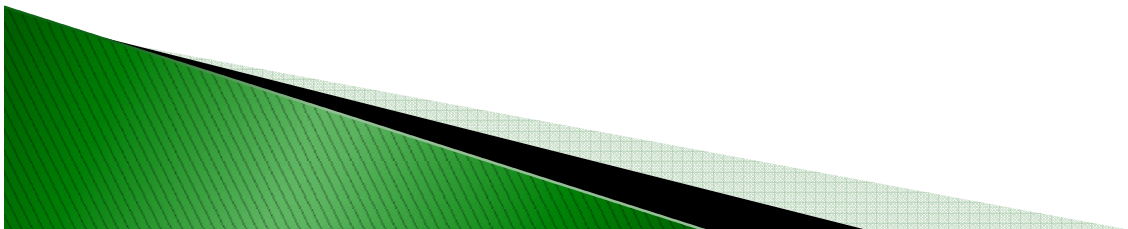
Patients & Methods

- ▶ Under direction of newborn hearing screening coordinators in a heterogeneous group of 11 hospitals in Utah:
 - All mothers of infants who failed the inpatient hearing screening &
 - A similar number of mothers of infants who passed the inpatient hearing screening
 - Were invited to complete two questionnaires:
 - The first within a week of hospital discharge; & a
 - Follow-up six weeks after birth



Patients & Methods

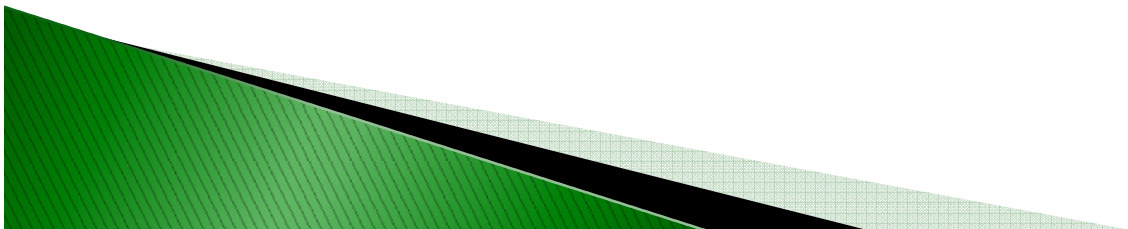
- ▶ Total of 286 mothers were invited to participate & 192 completed the Time 1 questionnaire (67% response rate).
 - Among the mothers that completed a Time 1 questionnaire, 95 completed the Time 2 questionnaire (49% of the initial responders).



Questionnaires

- ▶ Initial questionnaires:
 - Infant Health Concerns Scale (IHCS)
 - State Trait Anxiety short form (STAI) & demographic questions

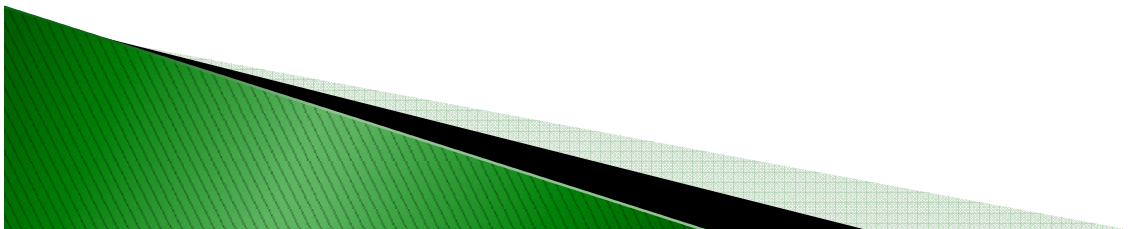
- ▶ Follow-up questionnaires:
 - State Trait Anxiety short form (STAI)
 - Infant Health Concerns Scale (IHCS)
 - Child Vulnerability Scale (CVS)



Infant Health Concerns Scale

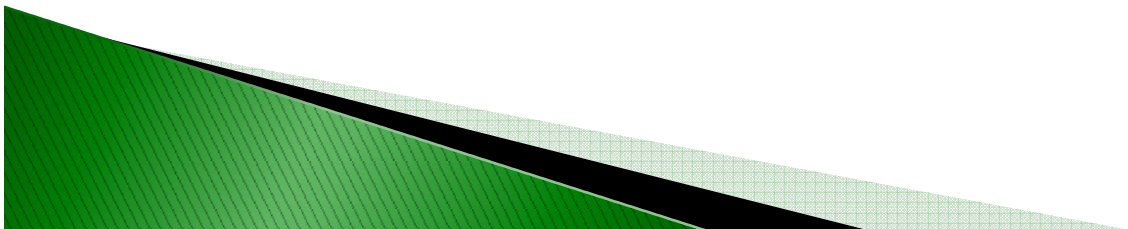
▶ IHCS:

- Developed for the study
- Items assess the levels of worry about 21 aspects of infant development
 - Eating habits
 - Sleeping habits
 - Digestion
 - Eyesight,
 - Hearing, etc.
- 4-point Likert scale (not at all, somewhat, moderately, or very worried)



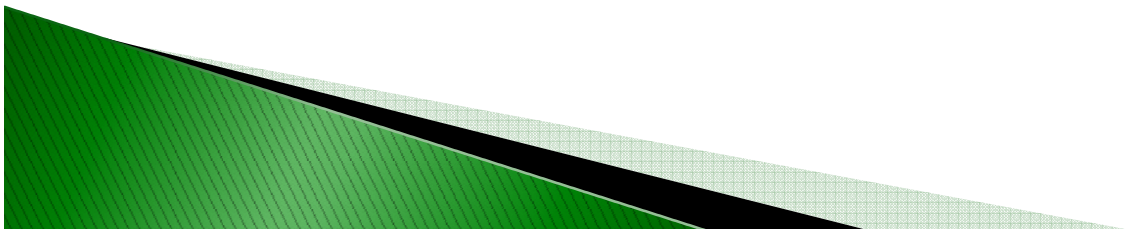
Results

- ▶ Mothers of children who received a hearing screen – are they more worried about hearing than other aspects of their infant's health:
 - Highest level of worry at Time 1 was 1.65 (on 4-point scale) for eating habits.
 - At Time 1, hearing was the 6th highest worry and wasn't statistically significant from 14 other aspects of infant development.



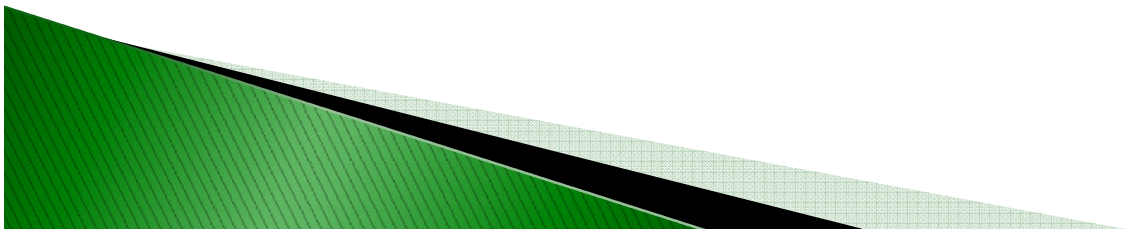
Results

- ▶ Among the full sample (infants who passed & those who failed initial screening test), 14.6% of mothers were “moderately worried” or “very worried” about their infants hearing at Time 1.
- ▶ Only 4.3% continued to be worried 6 weeks later.



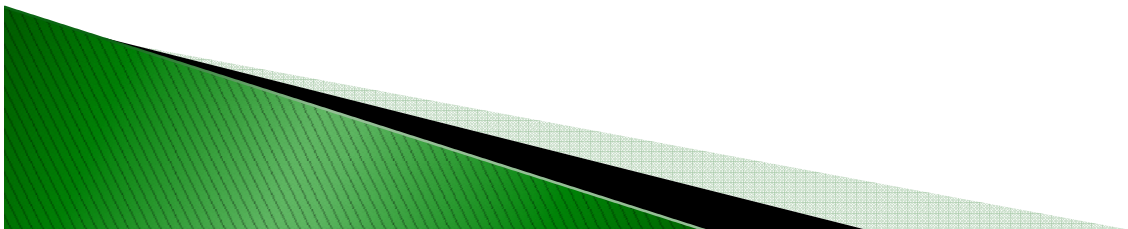
Results

- ▶ Mothers whose infants had a false-positive hearing screen, hearing had the highest level of worry among the 21 IHCS items shortly after the hearing screening test.
- ▶ But, hearing wasn't significantly different from 15 other IHCS items.
- ▶ At follow-up, hearing had the 8th highest level of worry and wasn't significantly different from any of the 20 other IHCS.
- ▶ Within the subset, 15% were “moderately worried” about their infant’s hearing at Time 1 and none were “very worried.”



Results

- ▶ At follow-up, no mothers in this subgroup were “moderately worried” or “very worried” about their infant’s hearing.
- ▶ In comparing mothers in the false-positive group to those in the initial screen pass group on levels of worry about infant hearing, there no statistically differences at either Time 1 or at follow-up.



Discussion

- ▶ Different from previous studies, this study included a follow-up measure at 6-weeks after birth (during which time almost all of the infants who failed the initial hearing screen received an additional hearing screening test).
- ▶ Of the mothers in this group, only 4.3% continued to feel “moderately worried” or “very worried” about their infant’s hearing.
- ▶ Thus, UNHS doesn’t seem to have a persistent negative consequence for more than 95% of mothers.

Conclusion

- ▶ Hearing was found to be of no greater concern than many other aspects of infant health about which mothers may worry, indicating that hearing screening does not lead to higher levels of worry about hearing than is the case for many other aspects of infant health and typical development.

