Cross-sectional study

Yuriko Suzuki, MD, MPH, PhD
National Institute of Mental Health, NCNP
yrsuzuki@ncnp.go.jp

Key issues

- Why research?

- Descriptive study

- Hypothesis testing

- Association

- Sampling

- An example of cross-sectional study

Why research?

- To guide health practice and policy

- Because local research is often needed to guide local health practice and policy

- Because carrying out research strengthens research capacity

Why research?

- Research data can help in

- Defining needs and solutions
- Understanding the context of illness
- Planning and evaluating services
- Solving specific problems in practice
- Contributing to the scientific base

What is a hypothesis

- A statement which describes what you expect to find in a specific manner
- Clearly stated
- Testable and refutable
- Not a mere research question or objective
- Backed by sample size calculation, and an appropriate design and analysis

Example

- Statement of the problem: Postnatal depression is a serous mental health problem and research that examined the association between depression and childrearing attitude is limited.

- Aim: to determine the prevalence or probable depressive state among mothers in Vietnam and to examine its risk factors with respect to social support and maternal childrearing attitude

- Question: Is depressive state associated with unfavorable childrearing attitude?

- Hypothesis: Mothers with depressive moods are more likely to have less confidence and less relaxed feeling regarding childrearing

Advantages of hypothesis-driven research

- Greater credence given to validity of findings

- Less risk of type I and II errors
  - Type I error: mistakenly see association while there isn't.
  - Type II error: mistakenly see no association while there is.
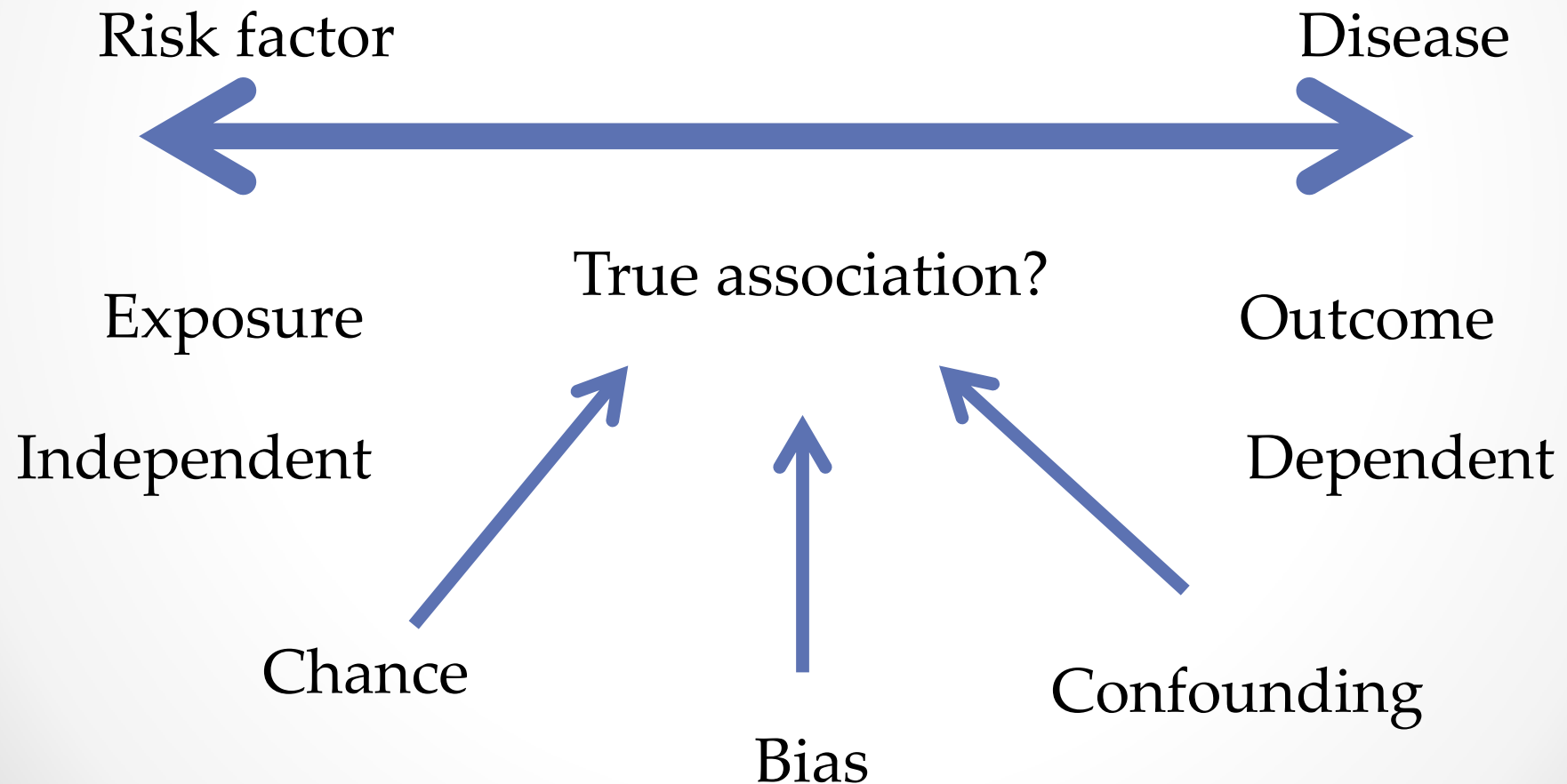
- Ease of replication

Epidemiology

- The study of the distribution and determinants of health-related states or events in specified populations, and its application to the prevention and control of health problems (Last, 1995).

What do epidemiologists do?

- Describe
  - o Distribution of health-related states in a population
  - o Extent, type, severity
  - o Who, where, when?

- Explain
  - o Analytical epidemiology
  - o Hypothesis-driven etiological research
  - o Risk factors and causes

- Evaluate
  - o Quasi-experimental studies
  - o Randomized controlled trials

Association

Risk factor   Disease

Exposure   True association?   Outcome

Independent   Dependent

Chance   Confounding

Bias

Descriptive studies

- Case series

- Cross-sectional study
  - Multi-center (geographic variance)
  - Ecological correlation
  - Repeated surveys (temporal variance)

Who to study?

- Population

- Sample
  - o Advantage:
    - time and cost
  - o Disadvantages:
    - sampling error,
    - bias if sample is not representative of population

Random sampling

- Simple

- Systematic

- Stratified

- Multi-stage and cluster

How big a sample?

- Sample size calculation is important to avoid errors in interpreting findings:

- Type I errors:
  - o The null hypothesis is rejected when it is in fact, true (p value)

- Type II errors:
  - o The null hypothesis is accepted when it is, in fact, false (power)

- Power of test
- Probability of correctly rejecting the null hypothesis
- i.e., failing to detect a true association
- Depends on sample size, estimated using formulas (or computers)
- G-power : http://www.psycho.uni-duesseldorf.de/abteilungen/aap/gpower3/
- Significance level

ORIGINAL ARTICLE

Postnatal depression and associated parenting indicators among Vietnamese women

Yuriko Suzuki[1] MD MPH PhD, Aya Goto[2] MD MPH PhD, Nguyen Quang Vinh[3] MD MSc,
Nguyen Thi Tu Van[4] MD PhD, Pham Nghiem Minh[5] MD, Chung Thi Mong Thuy[5] MD, Trinh Huu Phuc[4] MD,
Pham Viet Thanh[5] MD & Seiji Yasumura[2] MD PhD

1 Department of Adult Mental Health, National Institute of Mental Health, National Center of Neurology and Psychiatry, Tokyo, Japan
2 Department of Public Health, Fukushima Medical University School of Medicine, Fukushima, Japan
3 Hanh Phuc Women and Children Hospital Project, Ho Chi Minh City, Vietnam
4 Department of Obstetrics and Gynecology, University of Medicine and Pharmacy, Ho Chi Minh City, Vietnam
5 Tu Du Obstetrical and Gynecological Hospital, Ho Chi Minh City, Vietnam

Abstract

Introduction: Postnatal depression is a serious mental health problem. In low-income countries, there has been only limited research investigating the direct link between childrearing attitude and maternal mood. The present study sought to determine the prevalence of probable depressive state among mothers in Vietnam, and to examine its risk factors with respect to social support and maternal childrearing attitude.

Methods: A questionnaire survey was conducted in 299 consecutive mothers who visited Tu Du Obstetrical and Gynecological Hospital, a tertiary hospital, for regular check-up between one and three months postpartum. The questionnaire was administered by trained pediatricians in October through December 2007. Depression was assessed using a two-question case-finding instrument for depression.

Results: Sixty-eight of the 294 (23.1%) mothers of singletons were assessed as having probable depressive state. Parental and familial conflict and recent moving was strongly associated with probable depressive state. In terms of childrearing attitude, the following factors increased risk of

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Discussion: Mothers who felt unconfident and were less relaxed in childrearing were more likely to report a probable depressive state. Social support factors may have played a role in the depression. A brief screening tool for depression is useful to identify mothers in need of additional support in childrearing.

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Background

▸ Prevalence of mental health problem around delivery

▸ Baby blue: 50-60%

▸ Antenatal depression:

▸ Postnatal depression: 3-60%

                            10-15% in Western

                            20-30% in VN

                            10-20% in Japan

▸ Postnatal psychosis:

                            1-2 cases

                            in 1000 postpartum women

▸ Suzuki, Y., et al., (2011), Postnatal depression and associated parenting indicators among Vietnamese women. Asia-Pacific Psychiatry, 3: 219–227.

Methods

▸ Setting:
At a tertiary hospital, Tu Du Obsterical and Gynecological Hospital

▸ Participants:
The mothers who visited for regular check-up from 1 to 3 months after the delivery (300 were approached)

▸ Sampling:
 Consecutive sampling from October to December 2007

▸ Data collection:
Interview by trained pediatricians using questionnaires

▸ Questionnaires:

▸ Main outcome:
Depression:, a two-question case-finding instrument

▸ Other measurements:

  ▸ Psychological well-being, Self-efficacy, the General Perceived Self Efficacy (GSE)

  ▸ Pregnancy related factors, social support, parenting attitudes

▸ ▸ Suzuki, Y., et al., (2011), Postnatal depression and associated parenting indicators among Vietnamese women. Asia–Pacific Psychiatry, 3: 219–227.

Depression

- Two-item case finding instruments (Whooley , et al. 1997)
- "During the past month, have you often been bothered by feeling down, depressed, or hopeless?"
- "During the past month, have you often bothered by little interest or pleasure in doing things?"

Prevalence rate of probable depressive state and probable depression
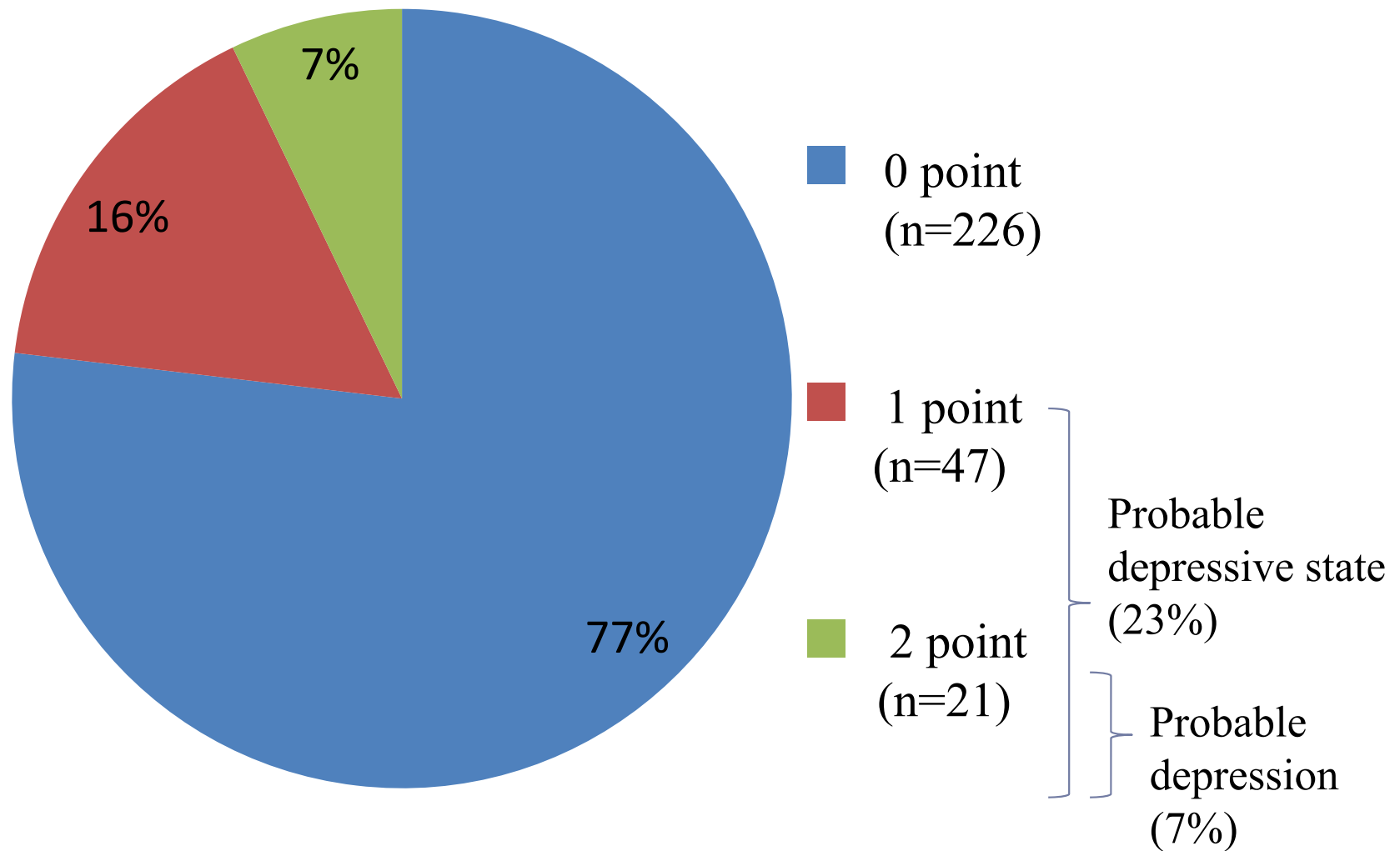
- 0 point (n=226) — 77%
- 1 point (n=47) — 16%
- 2 point (n=21) — 7%

Probable depressive state (23%)

Probable depression (7%)

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Table 1. Characteristics of participants and babies in the screening program

	All		Probable depressive state		Not probable depressive state				
	n	%	n	%	n	%	df	Statistic†	P-value
	294	%	68		226				
Maternal sociodemographic status							---		
Age in years, median (min, max)	30	(19, 48)	30	(19, 48)	30	(20, 41)		1.03	0.305
Employment									
Employed	233	79.3	56	82.4	177	78.3	1	0.52	0.472
Not employed	61	20.8	12	17.7	49	21.7			
Education									
Primary or secondary school	91	31.0	19	27.9	72	31.9	1	0.38	0.540
High school or higher‡	203	69.1	49	72.1	154	68.1			
Financial difficulty									
Yes	19	6.5	6	8.8	13	5.8	1	0.82	0.366
No	275	93.5	62	91.2	213	94.3			
Low SES§									
Yes	11	3.7	3	4.4	8	3.5	1		0.721
No	283	96.3	65	95.6	218	96.5			
Maternal health									
First-time mother									
Yes	166	56.5	37	54.4	129	57.1	1	0.15	0.697
Subjective health									
Good	274	93.2	59	86.8	215	95.1	1	5.77	0.016
Poor	20	6.8	9	13.2	11	4.9			
Medical history									
Yes	39	13.3	8	11.8	31	13.7	1	0.17	0.677
No	255	86.7	60	88.2	195	86.3			
Baby's health									
Age in months, median (min, max)	1	(1, 3)	1	(1, 3)	1	(1, 3)		−0.37	0.713
Birth weight									
<2,500 g	17	5.8	4	5.9	13	5.8	1	0.00	0.968
≥2,500 g	277	94.2	64	94.1	213	94.3			
Abnormal finding									
Yes	17	5.8	1	1.5	16	7.1	1		1.000
No	277	94.2	67	98.5	210	92.9			

†χ2 test, Fisher's exact test or Man-Whitney test was used depending on the variable property; ‡Including vocational school; §Pprimary or secondary school graduation and with financial difficulty.
df, degree of freedom.

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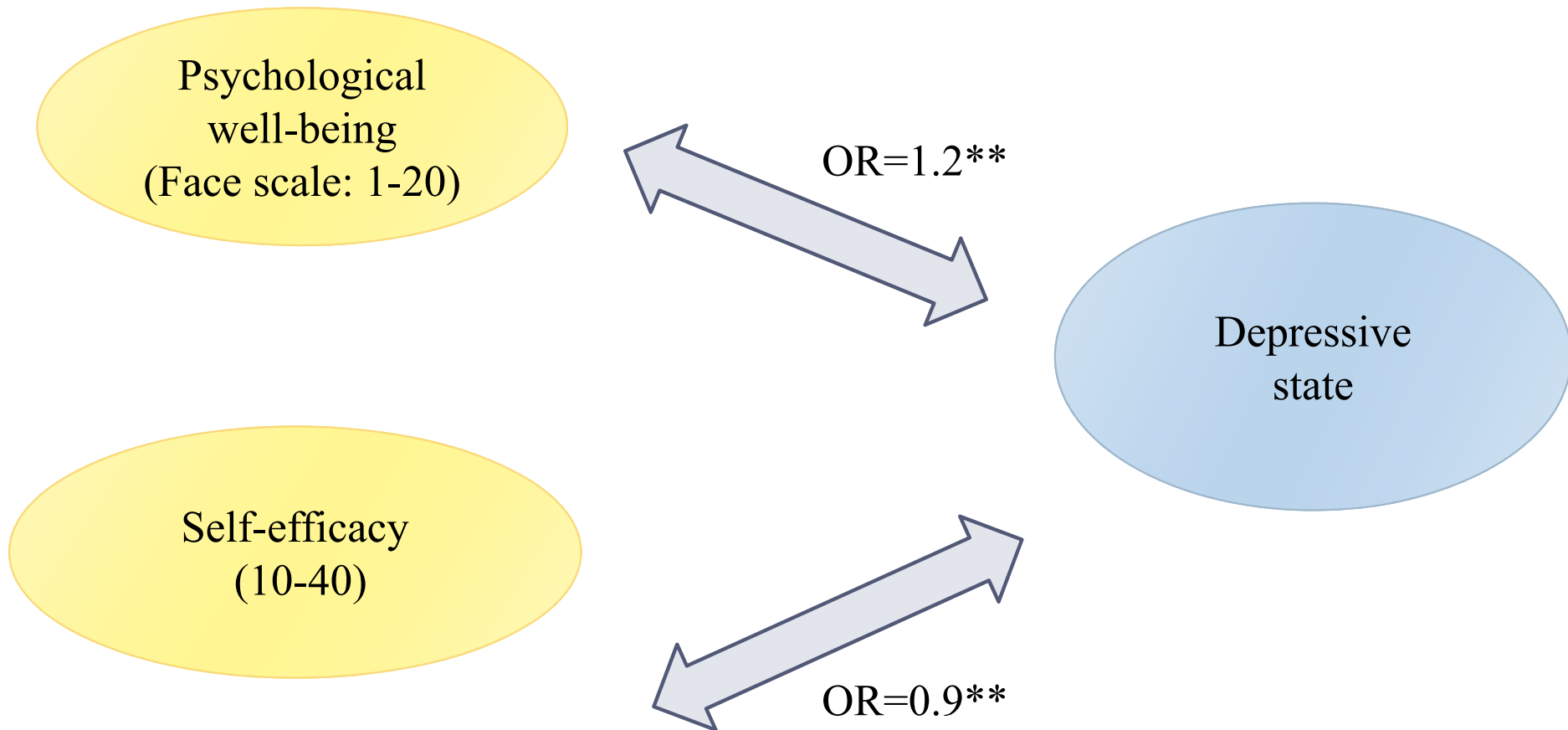
Table 2. Pregnancy and social support-related factors associated with probable depressive state in Vietnamese mothers

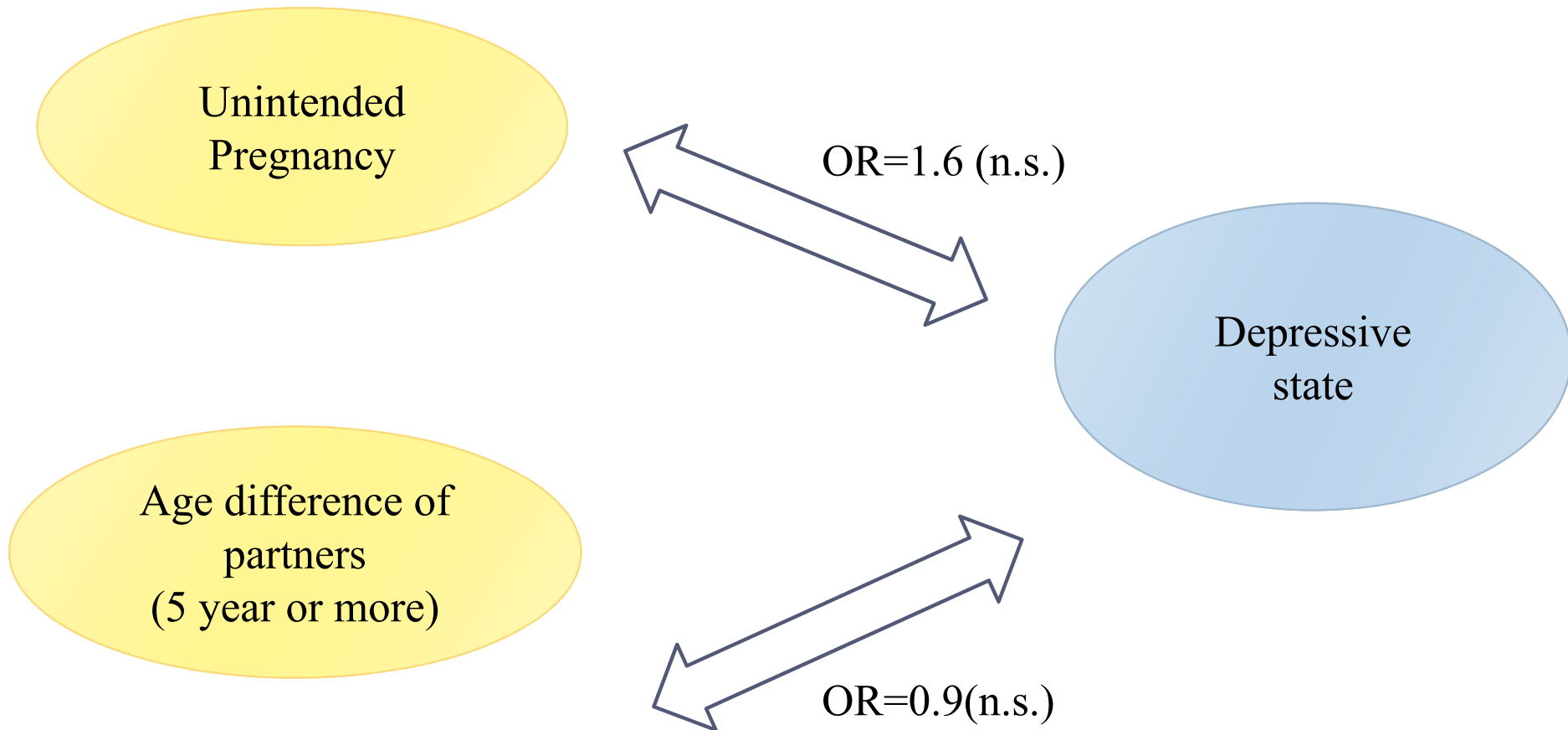|	All		Probable depressive state		Crude			Adjusted model†			Adjusted model‡		
	n/median 294	% (min, max)	n/median 68	% (min, max)	OR	95%CI	P-value	OR	95%CI	P-value	OR	95%CI	P-value
Psychological indicators													
Psychological wellbeing (1–20)	2	(1,15)	2	(1,15)	1.19	(1.10–1.29)	<0.001	1.18	(1.09–1.28)	<0.001	1.17	(1.08–1.28)	<0.001
Self-efficacy (10–40)	30	(13, 40)	28	(14, 40)	0.91	(0.87–0.96)	<0.001	0.92	(0.88–0.96)	<0.001	0.92	(0.87–0.96)	0.001
Pregnancy intention													
Intended	203	69.1	41	60.3	1.00								
Unintended	91	31.0	27	39.7	1.67	(0.95–2.93)	0.077	1.56	(0.88–2.78)	0.127	1.64	(0.92–2.94)	0.096
Age difference of partners													
≤5 years	216	73.5	50	73.5	1.00			1.00					
>5 years	78	26.5	18	26.5	1.00	(0.54–1.84)	0.990	0.93	(0.50–1.75)	0.831	0.93	(0.93–1.76)	0.817
Social support													
Parental conflict													
No	290	98.6	65	95.6	1.00			1.00			1.00		
Yes	4	1.4	3	4.4	10.38	(1.06–101.52)	0.044	11.46	(1.17–112.33)	0.036	8.90	(0.88–89.69)	0.064
Familial conflict													
No	289	98.3	64	94.1	1.00			1.00			1.00		
Yes	5	1.7	4	5.9	14.06	(1.54–128.04)	0.019	11.06	(1.17–104.62)	0.036	9.20	(0.93–91.03)	0.058
Recent moving													
Yes	48	16.3	18	26.5	1.00			1.00			1.00		
No	246	83.7	50	73.5	2.35	(1.21–4.56)	0.011	2.34	(1.20–4.57)	0.013	2.26	(1.15–4.46)	0.018

†Adjusted for subjective health; ‡Adjusted for subjective health, age, employment status, education and perceived financial difficulty.

▸ Suzuki, Y., et al., （2011）, Postnatal depression and associated parenting indicators among Vietnamese women. Asia–Pacific Psychiatry, 3: 219–227.

Relationship between depression assessment and other psychological aspects

Psychological well-being (Face scale: 1-20)

OR=1.2**

Depressive state

Self-efficacy (10-40)

OR=0.9**

Relationship with depression and pregnancy related factors

Relationship between social support and depressive state

Parental conflict — OR=11.5 ** → Depressive state

Familial conflict — OR=11.1 ** → Depressive state

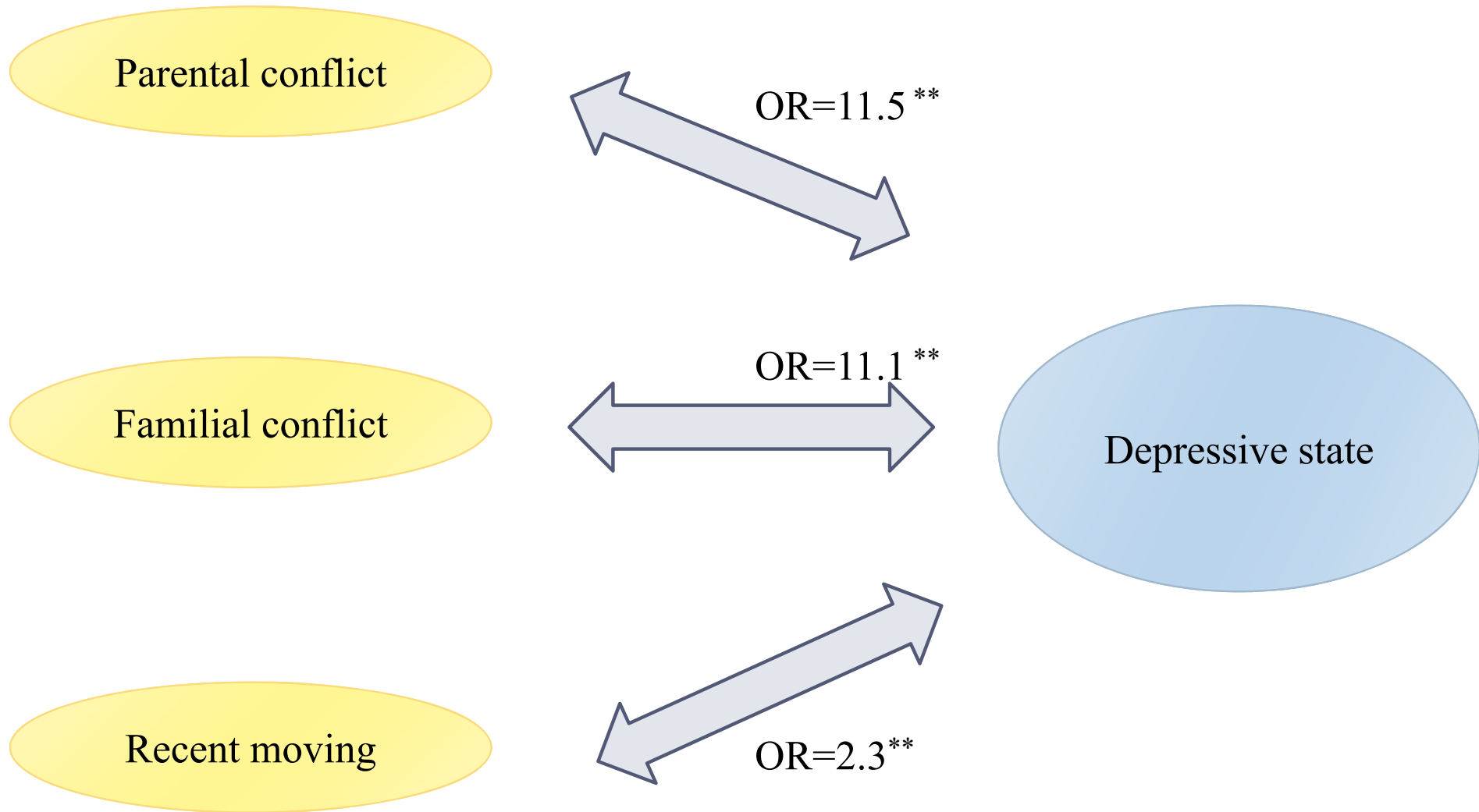Recent moving — OR=2.3** → Depressive state

Table 3. Associations between probable depressive state and childrearing indicators in Vietnamese mothers in the screening program

	All		Probable depressive state		Crude			Adjusted model†			Adjusted model‡		
	n	%	n	%									
	294	%	68		OR	95%CI	OR	P-value	95%CI	P-value	OR	95%CI	P-value
Childrearing lack of confidence													
No	100	34.1	13	19.4	1.00				1.00		1.00		
Yes or not sure	193	65.9	54	80.6	2.60	(1.34–5.04)	0.005	2.74	(1.40–5.38)	0.003	2.59	(1.30–5.15)	0.007
Abusive feelings													
No	265	90.4	57	85.1	1.00				1.00		1.00		
Yes or not sure	28	9.6	10	14.9	2.03	(0.89–4.63)	0.094	1.87	(0.80–4.34)	0.146	1.94	(0.83–4.54)	0.125
Relaxed mood													
Yes	268	91.5	56	83.6	1.00				1.00		1.00		
No or not sure	25	8.5	11	16.4	2.97	(1.28–6.91)	0.011	2.85	(1.21–6.71)	0.016	2.71	(1.14–6.44)	0.024
Childrearing advice													
Yes	249	84.7	59	86.8	1.00				1.00		1.00		
No	45	15.3	9	13.2	1.24	(0.57–2.73)	0.589	1.24	(0.56–2.75)	0.589	1.06	(0.47–2.41)	0.884
Cooperative husband													
Yes	244	83.3	55	82.1	1.00				1.00		1.00		
No, not sure	49	16.7	12	17.9	1.11	(0.54–2.28)	0.767	1.02	(0.49–2.13)	0.951	1.07	(0.51–2.25)	0.860

†Adjusted for subjective health; ‡Adjusted for subjective health, age, employment status, education and perceived financial difficulty.

▸ Suzuki, Y., et al., （2011）, Postnatal depression and associated parenting indicators among Vietnamese women. Asia-Pacific Psychiatry, 3: 219–227.

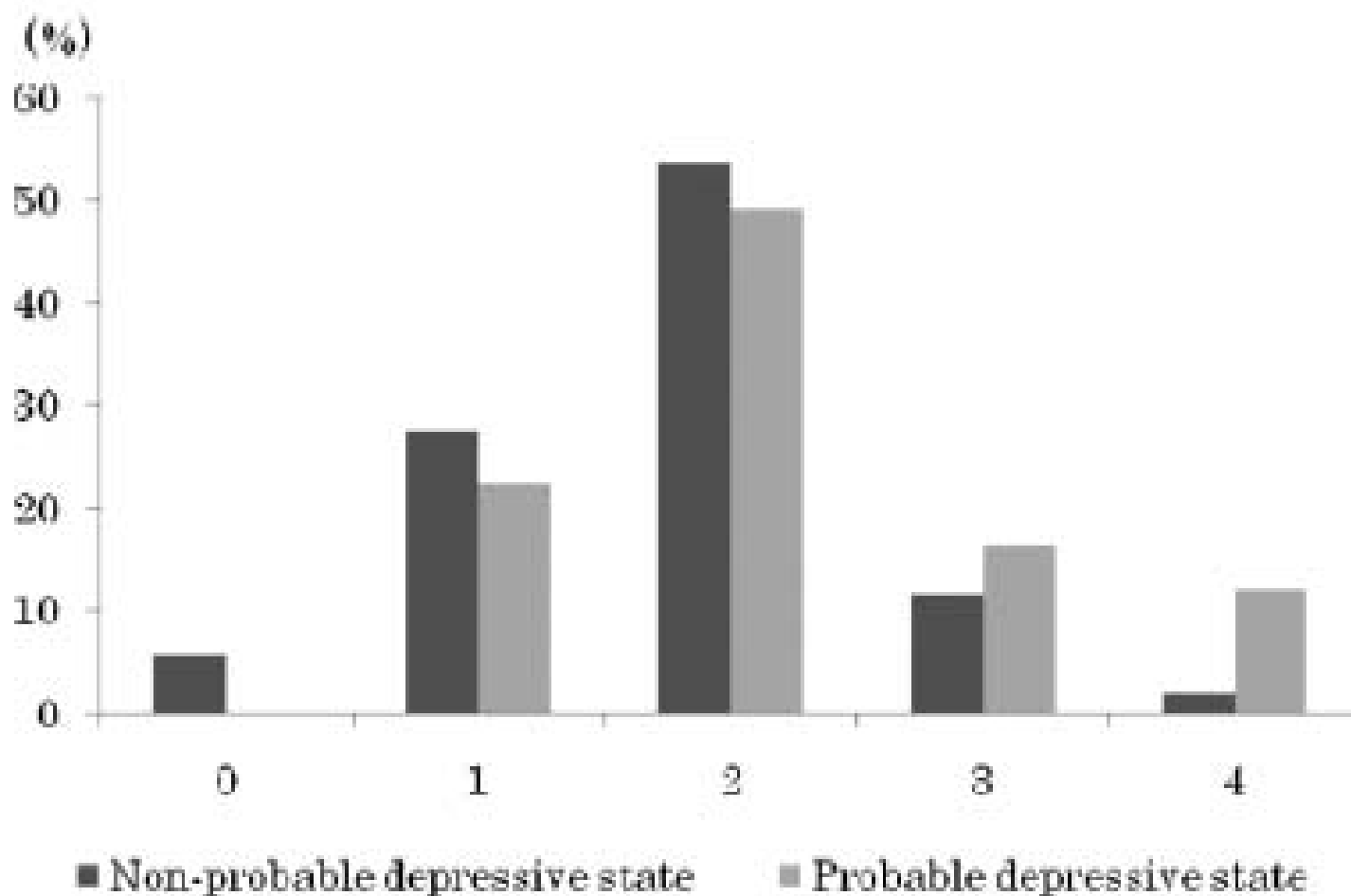# Relationship between depressive state and parenting attitudes
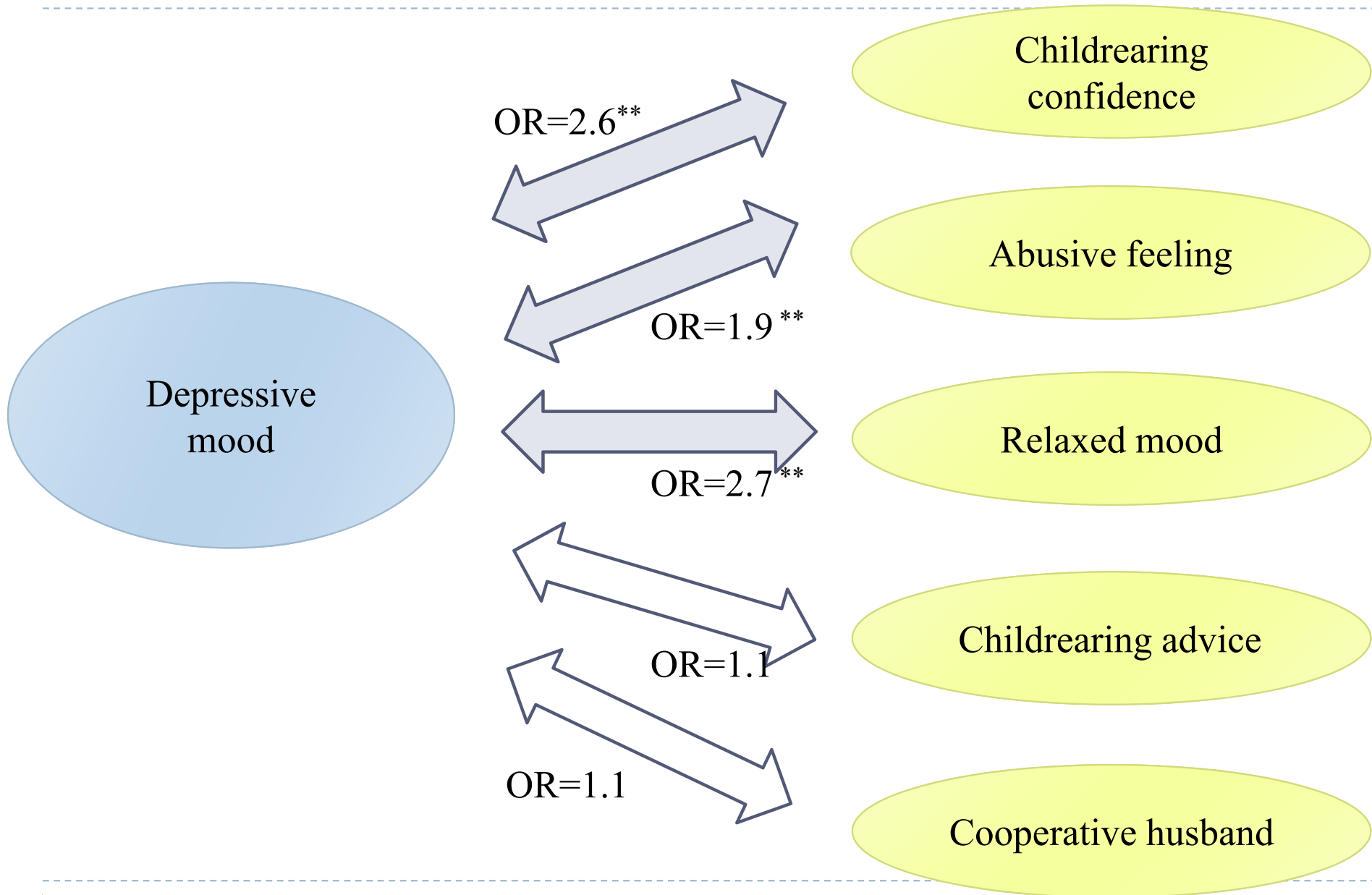
Figure 1 Distribution of total score of childrearing items (score range 0–5) between mothers with probable depressive state and those without (*n* = 294).

▸ Suzuki, Y., et al., (2011), Postnatal depression and associated parenting indicators among Vietnamese women. Asia–Pacific Psychiatry, 3: 219–227.

Discussion points

▶ **Summary of the results**

▶ **Comparison with other studies**

▶ **Prevalence**

  ▶ Risk factors

  ▶ Socioeconomic status, e.g., educational level

  ▶ Family conflicts, moving, from cultural perspective

  ▶ Parental attitude

▶ **Limitations**

  ▶ Causality is unknown

  ▶ Validation of two item depression screener in VN

  ▶ Special clinical setting– problem of ···

  ▶ On cultural note, expressing emotions is not common in VN, threat of underreporting

▶

Summary

- Among women at a tertiary hospital for baby-checkup in Vietnam,
- Prevalence of
  - probable depressive state was 23%
  - probable depression was 7%.
- Probable depressive state was associated with:
  - Poor psychological well-being and poor self-efficacy
  - Parental conflict, familial conflict and recent moving
  - Unconfidence in childrearing, abusive feeling, and unrelaxed mood
- Those with probable depressive state tended to have more items of unfavorable parenting attitude.
- These suggest needs to intervene mothers with depressive mood to have better parental attitude.

- Suzuki, Y., et al., (2011), Postnatal depression and associated parenting indicators among Vietnamese women. Asia-Pacific Psychiatry, 3: 219-227.

Questions

▶ Please hand calculate OR of parable depression with regard to the exposure of lack of confidence in childrearing.

Answer

▸ Please hand calculate OR of parable depression with regard to the exposure of lack of confidence in childrearing.

	Depression		
	+	−	subtotal
Lack of confidence +	54	139	193
Lack of confidence −	13	87	100
subtotal	67	226	293

▸ OR=odds of exposure in D+/odds of exposure in D−

▸   =54/13 / 139/87= 54*84/13*139=2.60