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Children's Reactions to the Desert Storm Deployment: Initial Findings from a Survey of Army Families

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Psychological symptom profiles were obtained on 1,601 children of soldiers deployed during Operation Desert Storm (ODS). The profiles were obtained from reports of the parents who stayed at home with the children. Certain symptoms such as sadness were common, but very few parents considered their children's problems serious enough to require counseling. The strongest predictor of children's receiving counseling during ODS was a previous history of being in counseling for emotional problems.

Background to the Study

From the beginning of the Operation Desert Shield/Storm (ODS) deployment, serious attention was given by Army leaders to the question of how family members were coping and what their support needs might be. In order to address some of these questions, a task force was assembled under the Deputy Chief of Staff of Personnel to study the impact of the deployment on soldier/family well being and the effectiveness of Army and community resources in assisting and supporting families. During the initial phase of the study, site visits were conducted at several Army installations, and informal interviews took place with spouses, volunteers, garrison leaders, health care professionals, and educators regarding the problems that family members were experiencing. Some of the questions were directed specifically toward problems that children were experiencing. Although no children were interviewed directly, accounts were provided by parents, hospital physicians, social workers, and school liaison officials.

The site visits were followed by a mailed survey to spouses from units representative of those that had deployed. The questionnaire used in this survey was designed to measure and quantify variables that had emerged as relevant during the site visits, including problems experienced by children.

Methods

Sample Selections and Data Collection

Questionnaires were mailed to spouses or distributed at briefings between January and April 1991. Response rates ranged from 37% to 65% for mailed questionnaires, and 75% for those distributed at briefings. A total of 1,274 spouses completed the questionnaire. All but 9 of these were women.

The Instrument

The questionnaire included measures of social support, stress, service utilization, demographic characteristics, coping, and psychiatric symptomatology. There were also two cat-

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egories of questions about children. The first category comprised a checklist of problems that children may have experienced prior to ODS, including health problems, learning disability, school problems, hyperactivity, emotional problems, and problems with drugs and alcohol. These items were derived from the 17-item Child Health Inventory (CHI) used in an earlier study of Army children.[1] The entire inventory could not be used because of the practical need to limit the length of the questionnaire given the number of different topics that had to be covered. The five items included in the questionnaire were selected because they were judged to provide the best global assessments of three background domains of children's well being: prior physical health, prior emotional health, and prior school difficulties.

The second category of measures comprised a checklist of symptoms experienced by children during ODS. These items were derived from descriptions of children's problems given to us by parents during the site visits. The checklist included 10 symptoms most commonly described by parents, as well as each parent's opinion regarding whether the child needed counseling and whether the child had in fact received counseling.

For both the modified CHI and the ODS symptom checklist, respondents were asked to indicate the presence or absence of each symptom for each child in the family.

Statistical Analyses

Symptoms and background variables were tabulated by age category and gender to provide descriptive profiles of their prevalence. For each of the 10 symptoms, two sets of stepwise logistic regressions were performed, using the procedure provided by the Statistical Analysis System,[2] to determine whether there were any significant predictors among the other study variables. The first set of regressions was performed for the eldest or only child in the family, while the second set was performed for the second child. Third and subsequent children were omitted because of their considerably smaller numbers.

TABLE I

SOCIODEMOGRAPHIC CHARACTERISTICS OF SAMPLE: NUMBER OF CHILDREN IN THE HOUSEHOLD (N = 1,274)

	N	Percent	
None	309	24.4	
One	370	29.2	
Two	379	29.9	
Three or more	208	16.5	
	N	Mean	SD
Age of parent at home[a]	949	29.2	6.3
Age of eldest child[b]	857	7.2	5.4
Age of second child	523	5.9	4.6
Age of third child	198	5.6	4.3
Age of fourth child	138	5.8	4.7
Age of fifth child	10	6.7	4.1
Age of sixth child	4	4.6	3.9

[a]Of these, 8 were fathers and 941 were mothers.

[b]Although 949 reported at least one child at home, only 857 provided age information on at least one child.

The following independent variables were examined:

(1) Demographic variables including age of child, sex of child, and total number of children in the family.

(2) Background variables including learning disability, health problems, school difficulty, hyperactivity, and previous counseling for problems.

(3) The total number of current symptoms of other siblings in the family. For the eldest child, this comprised a sum of the symptoms for second and subsequent children. For second children, this comprised a sum of the symptoms of eldest, third, and subsequent children.

(4) The total number of background problems of other siblings in the family. Items were summed using the same procedure described above.

(5) The mothers' symptoms as measured by the 25-item Hopkins Symptom Checklist (HSCL).[3]

Independent variables included in each logistic regression were limited to those with a statistically significant ($P < 0.05$) zero order correlation with the dependent variable.

Results

Demographic Characteristics

Of the 1,274 spouses who responded to our questionnaire, 934 reported having one or more children 18 years or younger living at home, with a total of 1,798 children among them (1.9 children per parent). A breakdown of respondents by number of children is provided in Table I. Age and sex information was provided for 1,601 children, who are the subjects of this analysis.

The mean age for spouses with children in this study was 29.2 (±6.3) years, while the mean age for the 857 first or eldest children was 7.2 (±5.4) years, and that for the 523 second children was 5.9 (±4.6) years.

Problems experienced by children prior to ODS are presented in Table II. Frequencies for most problems are low, especially for girls. Although 17% of boys and 16% of girls aged 10 to 12 received counseling for emotional problems prior to ODS, overall only 6.5% had received counseling, which is very close to the 5.3% found in an earlier study.[1] Serious health problems were reported in 4.3% of children in this study compared with 6.6% in the earlier study.

An examination of Table III shows that during the deployment, certain symptoms were widespread, in particular age and sex categories. Thus, for girls between the ages of 3 and 12, 55% to 64% experienced sadness and tearfulness. Even for boys in these age groups, sadness was a fairly widespread problem, affecting 42% to 49% of children. Discipline problems both at home and at school were low for girls, but home discipline was a fairly frequent problem for boys. Demanding more attention was also a problem for both boys and girls.

Results of Logistic Regressions

A major consideration in evaluating those variables that predict specific symptoms is birth order (see Table IV). Although there is some overlap between predictors for first and second children, in most instances the overlap is minimal, and for some variables there is no overlap at all. In the cases of "new or increased discipline problems at home" and "refusing to talk or communicate," there were no significant predictors for eldest

TABLE II

CHILDREN'S PROBLEMS DURING THE YEAR PRIOR TO THE DEPLOYMENT

	BOYS (N = 805)						GIRLS (N = 796)					
Problem	Under 1 (N = 79)	1–2 (N = 114)	3–5 (N = 184)	6–9 (N = 166)	10–12 (N = 109)	13–18 (N = 123)	Under 1 (N = 75)	1–2 (N = 136)	3–5 (N = 183)	6–9 (N = 188)	10–12 (N = 102)	13–18 (N = 112)
Learning disability	1.2%	2.8%	2.2%	9.6%	18.3%	14.6%	0 %	1.5%	3.3%	3.7%	10.8%	6.2%
Saw a counselor for problems	2.5%	0 %	3.3%	7.2%	17.4%	14.6%	0 %	1.5%	2.7%	7.4%	16.6%	8.0%
Had serious health problems	7.6%	6.2%	6.0%	3.0%	4.6%	3.2%	1.3%	8.1%	2.7%	2.1%	4.9%	2.7%
On medication for hyperactivity	0 %	0 %	1.6%	4.8%	8.2%	3.2%	0 %	0 %	1.1%	1.0%	2.9%	0 %
Doing poorly in school	0 %	0.7%	3.2%	16.2%	23.8%	25.2%	0 %	0 %	2.2%	8.0%	9.8%	15.2%

children within an overall significant model. The following variables emerged as significant predictors of children's symptoms:

Parent's HSCL

Of the 949 parents in this study, all but 8 were mothers. This section therefore refers predominantly to the mothers' HSCL score. A high score on this variable was significantly related to a number of symptoms in both eldest and second children, including sadness, eating problems, nightmares, sleeping problems, and a perceived need for counseling. For eldest children, mothers' HSCL was associated with discipline problems at home and immature behavior, while for second children it was associated with academic difficulty and refusing to talk or communicate. It was associated with demanding more attention for both children.

Siblings' Symptom Score (SSS)

A large number of overall symptoms among other children in the family was associated with academic difficulty and received counseling. Among second children it was associated with demanding more attention, refusing to talk, eating problems, and nightmares. In the case of sadness, sleeping problems, and immature behavior, it affected both eldest and second children.

HIstory of Counseling

This variable mainly affected second children with regard to

TABLE III

CHILDREN'S PROBLEMS DURING THE DEPLOYMENT

	BOYS (N = 805)						GIRLS (N = 796)					
Problem	Under 1 (N = 79)	1–2 (N = 144)	3–5 (N = 184)	6–9 (N = 166)	10–12 (N = 109)	13–18 (N = 123)	Under 1 (N = 75)	1–2 (N = 136)	3–5 (N = 183)	6–9 (N = 188)	10–12 (N = 102)	13–18 (N = 112)
Sadness	0 %	26.4%	49.4%	44.6%	42.2%	26.0%	1.3%	22.0%	64.5%	60.1%	54.9%	38.4%
Home discipline	0 %	24.3%	52.7%	43.4%	34.8%	26.0%	0 %	1.5%	7.6%	12.7%	6.8%	7.1%
School discipline	0 %	0 %	8.7%	20.5%	18.3%	12.2%	0 %	1.5%	3.9%	12.7%	6.8%	7.1%
Academic problems	0 %	2.1%	7.6%	20.5%	27.5%	27.6%	0 %	2.2%	13.5%	19.7%	17.6%	16.9%
Demands attention	3.8%	43.7%	58.1%	46.4%	39.4%	21.1%	13.3%	50.7%	62.3%	45.2%	34.3%	14.3%
Won't talk	0 %	4.1%	5.4%	15.6%	14.7%	22.7%	0 %	2.2%	9.8%	14.4%	19.6%	10.7%
Immature behavior	0 %	4.1%	23.3%	25.3%	26.6%	19.5%	1.3%	10.3%	19.7%	21.3%	13.7%	6.2%
Eating problems	0 %	13.9%	25.5%	19.9%	22.0%	11.4%	0 %	24.2%	36.0%	24.5%	17.6%	14.3%
Nightmares	0 %	18.7%	23.9%	18.1%	7.3%	4.9%	2.6%	19.1%	27.8%	24.5%	19.6%	9.8%
Sleeping problems	2.5%	27.8%	25.5%	23.3%	24.8%	15.5%	5.3%	27.9%	38.9%	25.5%	17.6%	15.2%
Needs counseling	0 %	1.4%	4.9%	10.2%	14.7%	12.2%	0 %	0 %	5.4%	11.2%	13.7%	6.2%
Saw counselor	0 %	0 %	1.6%	4.8%	9.2%	7.3%	0 %	0.7%	3.8%	9.0%	12.7%	4.4%
No counseling because of cost of CHAMPUS	0 %	1.4%	2.7%	1.8%	6.4%	2.4%	0 %	0 %	2.7%	4.2%	1.9%	0.9%

TABLE IV

PREDICTORS OF SYMPTOMS AMONG CHILDREN OF ODS SOLDIERS: RESULTS OF LOGISTIC REGRESSIONS

Dependent Variable:	Predictors	Eldest/Only Child			Second Child		
		Standard Error	Standard Estimate	Chi Square	Standard Error	Standard Estimate	Chi Square
Increased sadness/tearfulness	Gender	0.156	−0.107	6.2*	0.212	−0.214	13.3***
	Mother's HSCL	0.005	−0.260	33.4***			
	SSS	0.028	−0.186	16.6***	0.036	−0.315	25.2***
	Age				0.023	−0.269	20.9
	History of counseling				0.521	−0.173	7.3**
		χ^2 for covariates=69.75 p=0.0001			χ^2 for covariates=65.9 p=0.0001		
New or increased discipline problems at home	History of doing poorly in school	0.29	−0.185	15.0**			
	Age	0.02	0.361	38.1**			
	Mother's HSCL	0.005	−0.227	23.4**			
	History of hyperactivity				0.871	−0.139	5.5*
	SSS				0.036	−0.405	42.0***
		χ^2 for covariates=111.7 p=0.0001			χ^2 for covariates=54.9 p=0.0001		
New or increased discipline problems at school	Age				0.036	−0.301	10.0***
	Previously in counseling				0.454	−0.268	22.4***
	Gender				0.340	.184	3.8*
	History of doing poorly in school				0.447	−0.149	5.5*
					χ^2 for covariates=91.4 p=0.0001		
Increased academic difficulty	History of health problems	0.440	−0.123	5.5*			
	Age	0.023	−0.356	26.6***	0.031	−0.307	14.8***
	Total children	0.172	0.227	6.9**			
	SSS	0.039	−0.311	23.8***			
	History of doing poorly in school				0.422	−0.149	6.3*
	Mother's HSCL				0.008	−0.232	8.9**
		χ^2 for covariates=83.1 p=0.0001			χ^2 for covariates=39.7 p=0.0001		
Demanding more attention	Learning disability	0.315	−0.163	13.4***			
	Age	0.016	0.295	38.4***			
	Mother's HSCL	0.005	−0.280	38.0***	0.006	−0.133	5.0*
	SSS				0.036	−0.312	24.6***
		χ^2 for covariates=87.9 p=0.0001			χ^2 for covariates=45.5 p=0.0001		
Refusing to talk or communicate	Age				0.039	−0.372	14.0***
	Previously in counseling				0.522	−0.161	6.4*
	Mother's HSCL				0.011	−0.243	5.9*
	SSS				0.048	−0.224	7.1**
					χ^2 for covariates=55.8 p=0.0001		
Increased immature behavior	History of doing poorly in school	0.291	−0.146	9.3**			
	Gender	0.215	0.169	8.0**			
	Mother's HSCL	0.006	−0.276	23.3***			
	SSS	0.031	−0.172	11.6***	0.493	−0.157	7.2**
	Learning disability				0.493	−0.424	37.1***
		χ^2 for covariates=72.7 p=0.0001			χ^2 for covariates=56.9 p=0.0001		
New or increased eating problems	History of doing poorly in school	0.271	−0.140	9.9**			
	Mother's HSCL	0.005	−0.344	47.2***	0.008	−0.168	4.9*
	SSS				0.042	−0.410	31.9***
		χ^2 for covariates=60.4 p=0.0001			χ^2 for covariates=59.3 p=0.0001		
Nightmares	Age	0.019	0.192	12.0**			
	Mother's HSCL	0.005	−0.312	38.2**	0.008	−0.222	8.8**
	SSS				0.041	−0.169	5.6*
		χ^2 for covariates=54.8 p=0.0001			χ^2 for covariates=23.3 p=0.0001		
Trouble getting to sleep or staying asleep	Learning disability	0.343	−0.116	5.7*			
	Age	0.021	0.246	15.9***			
	History of doing poorly in school	0.313	−0.108	4.4*			
	Mother's HSCL	0.005	−0.266	28.6**	0.007	−0.174	6.7**
	SSS	0.033	−0.167	10.0**	0.038	−0.356	28.4***
	Gender				0.237	−0.143	4.7*
		χ^2 for covariates=75.2 p=0.0001			χ^2 for covariates=54.7 p=0.0001		
In mother's opinion child needed professional counseling	Previously in counseling	0.390	−0.352	38.6***	0.529	−0.209	10.3**
	History of doing poorly in school	0.406	−0.185	7.6**			
	Mother's HSCL	0.010	−0.315	12.1***	0.011	−0.365	12.6***
	SSS	0.043	−0.181	6.4**			
	Age				0.041	−0.292	7.7**
		χ^2 for covariates=165.3 p=0.0001			χ^2 for covariates=48.1 p=0.0001		
Child received professional counseling	Previously in counseling	0.403	−0.581	81.5***	0.478	−0.442	54.8***
	SSS	0.055	−0.288	10.3**			
		χ^2 for covariates=232.9 p=0.0001			χ^2 for covariates=111.1 p=0.0001		

sadness, school discipline problems, and refusing to talk. It affected both eldest and second children with regard to preceived need for counseling and received counseling.

History of Poor School Performance

For eldest children, this variable had an impact on discipline problems at home, immature behavior, eating problems, sleeping problems, and the preceived need for counseling. For second children, this variable affected discipline problems at school and academic difficulty.

History of Being on Medication for Hyperactivity

This variable was associated with home discipline problems for second children.

Health Problems

A history of serious medical illness was associated with increased academic difficulty for eldest children.

Learning Disability

For eldest children, this was associated with demanding more attention and sleep problems, while for second children this was associated with increased immature behavior.

Age

Age was generally negatively associated with symptoms for eldest children and positively associated with symptoms for second children. Thus, younger age is related to home discipline problems, demanding more attention, nightmares, and sleep problems in eldest children, while older age is associated with sadness, school discipline problems, and refusing to talk in second children. Older age was associated with academic difficulty in both eldest and second children.

Gender

Female gender was associated with sadness for both eldest and second children, and with sleep problems for second children. Male gender was associated with school discipline problems for second children, and immature behavior for eldest children.

Discussion

A major factor predicting symptoms among children is the symptom levels of other members of the household, notably the mother and other siblings. These factors should not automatically be interpreted as causally related to symptoms because all variables were measured at the same time, and the data are therefore correlational. Previous studies have shown a relationship between parental psychopathology and the number of psychiatric symptoms reported for children.[4,5] This may occur because parents with psychiatric disorders are more intolerant of symptoms in their children, and therefore report more symptoms,[6] or because of shared environmental factors or genetic factors.[7]

Reasons for differences in predictors for eldest and second children is difficult to interpret. Even though we controlled for age, it is possible that the different age ranges for the two groups was a factor in determining predictors. Age itself affected symptoms in opposite directions for eldest as compared with second children. Results of a previous study of Army children suggest that parents are more likely to identify psychopathology in first-born or only children,[8] but the issue of different predictors of symptoms in children by birth order was not addressed.

While overall reports of symptoms experienced by children during ODS tend to be high, particularly for certain symptoms, there is no evidence that these were necessarily perceived as serious problems. Around 5% to 15% of children were thought to need counseling, and 2% to 12% received counseling, with the average being about 6%. Furthermore, the greatest predictor of counseling received was previous counseling, indicating that children who developed serious problems during ODS had a history of serious problems. Another background variable which increased children's vulnerability to a variety of symptoms was a history of poor school performance.

Awareness of vulnerability factors may help mental health professionals, educators, and service providers in targeting certain groups for special support services. In addition, support for the parent—usually the mother—is particularly important in view of the possible impact that high symptom scores have on her children.

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