



Relational coping strategies in mothers suffering chronic illness

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Abstract: Chronic pain makes parenting more difficult as ill mothers have to manage pain and parenting responsibilities simultaneously. The present study Compares relational coping strategies in mothers with LBP, RA, MS and well mothers; in addition examines the role of copings in pain severity and pain-related disability of mothers with chronic illness. Sample consisted of 134 mothers with LBP, 120 mothers with RA, 126 mothers with MS and 130 well mothers. They participated in an interview on relational coping strategies and completed questionnaires of VAS and PDQ. Results demonstrated that mothers with chronic illness utilized more “rest and taking drugs” and “distraction” in comparison of well mothers. Mothers with LBP were more engaged in “self-preservation parenting” than mothers with MS. Well mothers utilized more “quality one-on-one time” in comparison of ill mothers. Correlation analysis revealed that relational coping strategies with the theme of fear-avoidance of pain were negatively associated with pain severity and pain-related disability in ill mothers (i.e., rest and taking drugs, self-preservation parenting, setting boundaries and encouraging mature behavior in children). On the other hand, relational coping strategies with the theme of confrontation with pain including “distraction” and “quality one-on-one time” were negatively associated with pain severity and “quality one-on-one time” was negatively associated with pain-related disability. Results offered implication for practitioners and scholars about the role of illness in utilizing relational coping strategies and provided evidence for the role of copings with the theme of fear-avoidance of pain in aggravation of pain and disability.

Key words: chronic illness, fear-avoidance model, pain-related disability, relational coping strategies, severity of pain.

I. INTRODUCTION:

Management of household chores and parenting responsibilities is a stressful experience for most mothers. Chronically ill mothers have additional difficulties to manage their symptoms such as pain and disability while simultaneously performing their parenting roles and duties (Barlow et al. 1999; Evans, Shipton, Keenan, 2005; Zadinsky, Boyle, 1996). Studies on women with chronic pain demonstrated that pain affects parents’ abilities to perform familial roles (Barlow et al, 1999) and interferes with day-to-day parenting tasks (Evans, Shipton, Keenan, 2005). Mothers with chronic illness may use permissive parenting (Evans et al 2005) and attempt to separate themselves from the family when they experience pain and may leave the child to do things for him or herself (Evans, Shipton, Keenan, 2006; Smith, 2003). Furthermore mothers with chronic pain report being less active in family leisure time (Kopp et al, 1995). They are unable to consistently meet children’s needs, and experience frustration of not fulfilling their own expectations of how a mother should act (Zadinsky, Boyle, 1996). Therefore Chronically-ill mothers have to utilize some coping strategies to deal with these stressful conditions.

A person’s coping style and beliefs about pain may be important in development and maintenance of pain-related symptoms (Jensen et al 2009). According to fear-avoidance model, response to pain can be seen as two extremes of confrontation and avoidance. A person who displays confrontational behavior may keep her normal level of activity but a person with avoidance behavior may reduce activities that are expected to make pain. It is believed that avoidance behavior increases the risk of developing chronic pain (Fritz, George, Delitto 2001; Vlaeyen et al 1995; Lethem et al 1983). Therefore any coping strategy with the theme of fear-avoidance can be considered as dysfunctional.

On the other hand, coping strategies in women are conceptualized differently in some theories. According to relational theory of coping, development of women’s sense of self is defined as “being in relation” (Kayser, Sormanti, Strainchamps, 1999) and women’s coping abilities are developed in the context of close relationship such as mother-child interactions. In this theory, relational factors are classified in

three coping strategies of mutuality, relationship beliefs and expectations, and relationship-focused coping (Kayser, Sormanti, Strainchamps, 1999; White et al 2009).

Coping strategy of mutuality is defined as bidirectional exchange of feelings, thoughts and actions but it is shown to be asymmetrical in the context of parenting. Thus mother may encourage more mature behavior in her child, either by explaining about her pain and illness, expecting her child to be more patient and enlisting the child's assistance with tasks. Another coping strategy is relationship beliefs and expectations that are defined as integration of mothering and living with chronic pain. For example a mother may do all she can to eliminate or manage illness symptoms such as pain in order to perform her parenting responsibilities well. She can set up boundaries around her daily activities to reduce pain or she can use emotion management through ignoring the pain. The final coping strategy is relationship focused coping, which is defined as responding to one's own as well as another's emotional needs. A mother could entertain her child with activities such as crafts or watching media while she needs to break from parenting to handle her pain; she could also get social support from her friends, relatives, and others to reduce tension of parenting while in pain (White, Mendoza, White, Bond, 2009). We hypothesized that mothers with chronic illness who utilize relational coping strategies with the theme of fear-avoidance are more likely to experience pain severity and disability.

Research demonstrated that illness symptoms, and parenting difficulties are different between various illness groups (Grant et al, 2004; White et al, 2009). As such, in the present study mothers with three different chronic illnesses including rheumatoid arthritis (RA), multiple sclerosis (MS), and Low Back Pain (LBP) were compared with a group of healthy mothers. These illnesses were of interest because RA and MS are two autoimmune diseases that are more prevalent among women, and are usually diagnosed in child bearing years between ages of 20 and 40 for MS (Myhr, 2008) and 20 and 45 for RA (Hannan, 1996). LBP is also a common problem in women (Andersson, 1999) and has co morbidity with RA and MS (Henze, 2005., Kothe et al, 1995). Pain is a major complaint also reported by people suffering RA and MS (Archibald et al, 1994., Ehde, Osborne, Jensen, 2005., Kalia, Oconner, 2005., Pistesky, 2007). Although all three illnesses have the component of pain but there are some differences between them. In RA pain is related to inflammation and painful joints (Pistesky, 2007) but pain in MS is featured with tingling, burning or deep muscular aching (Archibald et al, 1994; Ehde, Osborne, Jensen, 2005). On the other hand, mothers with MS mostly suffer physiologic problems like demyelination or irregular asymmetric movement patterns (Henze, 2005) but mothers with LBP mostly suffer mechanical problems like muscle stiffness and disc herniation (Jackson, Simpson, 2006), and mothers with RA mostly suffer inflaming painful joints (Pisetsky, 2007). These characteristics make both of mothers with RA and LBP vulnerable to different activities and teach them to limit parenting and household chores to reduce pain. Therefore we hypothesized that alternative ways of lifting, bathing and feeding a child, and household chores can be more utilized among mothers with LBP and RA in comparison of mothers with MS. On the other hand as well mothers don't have stressful conditions of chronic illness, we hypothesized that they might be more engaged in active parenting strategies like playing with the child and relational coping strategies with the theme of fear-avoidance of pain would be less utilized among them.

Thus, following hypotheses were examined in present research:

Hypothesis 1: relational coping strategies focused on alternative ways of parenting and household chores are more utilized among mothers with LBP and RA in comparison of mothers with MS and well mothers.

Hypothesis 2: relational coping strategies focused on active parenting are more utilized among well mothers in comparison of mothers with chronic illnesses.

Hypothesis 3: relational coping strategies with the theme of fear-avoidance of pain would be less utilized among well mothers in comparison of mothers with chronic illnesses.

Hypothesis 4: controlling for the age of mother and children, number of children, and duration of illness, women who rate higher on relational coping strategies with the theme of fear-avoidance of pain are more likely to report higher levels of pain severity and disability.

Hypothesis 5: controlling for the age of mother and children, and number of children, women who rate higher on relational coping strategies with the theme of confrontation with pain are more likely to report lower levels of pain severity and disability.

II. MATERIALS AND METHOD

Participants and procedure

Sample consisted of, 134 LBP, 120 RA and 126 MS, and 130 well mothers. Chronically ill mothers were recruited from three major general hospitals (one private and two public hospitals) and MS Society of Tehran. Our medical team made diagnoses based on standard examinations at admission, patients were included if they had chronic pain for at least three months. Well mothers were recruited from visitors of a large public park in Tehran. All participants had to meet two other inclusion criteria of being married in order to equalize partner's potential support that could be provided for a chronically ill mother, and having a child under 6 years of age. Participants were interviewed and completed the questionnaires after signing participant information sheet and consent form as approved by the institutional review board of Shahid Beheshti University.

Measures

Interview

An interview was used to assess eight relational CSs that were extracted from a pilot study and was based on previous research (Kayser, Sormanti, Strainchamps, 1999 ,White et al, 2009). Huberman and Miles' qualitative research tactics were used to analyze mother-generated coping strategies. These tactics are consisted of noting patterns and themes in data, clustering with conceptual grouping, making contrasts and comparisons between categories, subsuming relational copings into super ordinate ones. The pilot study included thirty interviews to extract the relational coping strategies and categorize them. Qualitative research techniques were taught to raters with supervisor of the project. Twenty nine themes were extracted and one of the colleagues not involved in the research categorized them conceptually. The categories represented either (a) coping strategies with the theme of fear-avoidance of pain through decreasing household chores, rest, parenting in a way that preserves mother's physical resources when she is in pain, and assignment of some parenting and household duties to the child (b) strategies that included confrontation with pain through coping strategies like physical and mental practice, distraction of pain, providing quality one-on-one time with the child and seeking social relationship with others. Final qualitative tactic utilized in present research was counting the frequency of mother-generated strategies. Eight categories of relational coping strategies were extracted and a miscellaneous category was included to cover responses that are not specified in other categories. Inter-rater reliability was established for placement of mother generated coping strategies in eight super ordinate categories. Five raters were requested then to allocate each reported coping in one of 9 final categories. Results revealed the following agreement rate: rest and taking drugs92%; physical and mental practice92%; quality one-on-one time100%; social support from others92%; setting boundaries92%; self preservation88%; distracting/ignoring96%; encouraging mature behavior88%; and miscellaneous 64%. Based on these categories, 2086 coping strategies were extracted from interviews and assigned in nine categories after complete consensus between the authors.

Interview begins with the following question: "*since pain is a common problem for some individuals and it can make some problems and disability in everyday life, what coping strategies have you utilized to parent your young child while you are in pain?*" Then answers were categorized in eight relational coping strategies as found in pilot study and an additional category called miscellaneous coping strategies for other possible emerged CSs that are not included in previous categories. After interview, participants completed a battery of questionnaires.

Pain Disability Questionnaire (PDQ)

This questionnaire was made with Roland and Morris (1983) to assess pain-related disability of daily functioning. It is a self report instrument with 24 statements. Psychometric properties of this questionnaire were validated in Iranian patients with chronic pain (Marbouti et al 2011). Participants are asked to mark the statements that describe their current condition well. Total score ranges from 0 (lack of disability) to 24 (most disability). Alpha Cronbach's coefficient of this questionnaire in present research was 0.88.

Visual Analogue Scale (VAS)

This scale is consisted of one nongraded line scoring from 0 to 100 to describe severity of pain. Participant is asked to indicate her pain severity on this graded line.

III. RESULTS

Characteristics of the sample

In order to compute adequate sample size for analysis of present research G* Power version 3.1.4 was used. A priori analysis for ANOVA (fixed effects, omnibus, one way) was used. For the first analysis, four groups were specified and power was set at 0.80 and alpha at 0.05. A medium effect size was estimated at 0.25. Given these factors, a minimum adequate sample size of 180 would be needed. For the second analysis five groups were specified and power was set again at 0.80 and alpha at 0.05. A medium effect size of 0.25 was estimated. Given these factors, a minimum adequate sample size of 200 would be needed. As our sample size was 510, there was adequate power to do these analyses. 130 well mothers, 126 mothers with MS, 134 mothers with LBP and 120 mothers with RA were screened, met the inclusion criteria and included in present research.

Table1. Demographic characteristics of participants

demographic characteristics	Total M(SD)	Well (SD)	M MS M (SD)	LBP M (SD)	RA M (SD)	F
Number of children	1.73 (1.20)	1.36 (0.65)	1.77 ^b (1.76)	2.01 ^a (1.08)	1.78 (1.00)	6.70*
Age of child	4.30 (1.43)	3.98 (1.47)	4.51 (1.23)	4.41 (1.42)	4.30 (1.56)	1.67
Age of mother	32.85 (5.01)	33.27 (5.23)	31.50 ^b (5.23)	34.20 ^a (4.71)	32.30 (4.51)	7.36**

* $p < 0.02$ ** $p < 0.01$

^{a,b}Represent means that are significantly different with each other

ANOVA results for demographic characteristics are reported in table 1. Mothers with LBP were as significantly older than mothers with MS ($F[3, 506]=7.36, p < 0.01$). Mothers with LBP had significantly more children than mothers with MS ($F[3, 506]=6.70, p < 0.02$).

Mother-generated coping strategies

Participants identified 2086 strategies, resulting in an average of 4.09 strategies per respondent. Mothers with RA, LBP and MS listed significantly more strategies than well mothers (RA $M=4.51$, LBP $M=4.26$, MS $M=4.04$, well $M=3.29$; $F[3, 506], p < 0.001$). Out of 510 mothers, 36 (7.1%) listed one coping strategy, 60 (11.8%) listed two, 100 (19.6%) listed three, 116 (22.7%) listed four, 92 (18%) listed five, 78 (15.3%) listed six, 20 (3.9%) listed seven and 8 (1.6%) listed eight strategies. Frequency of each coping strategy utilized by mothers is reported in table 2.

Table2. Relational coping strategies, specific strategy examples and percentage of answers

coping strategy and description	specific strategy examples	frequency and percentage of responses
seeking social relationship ^c : relationship with others to seek social support	having social activities with others, seeking empathy, emotional assistance	372 items or 17.8% of responses
quality one-on-one time with children ^c : entertaining and distracting the child with activities	Mother actively participates in activities like watching media, crafts, storytelling, music/singing, with the child.	320 items or 15.3% of responses
encouraging more mature behavior in the child ^a : expectation of the mother for more mature behavior in child	rest and taking drugs ^b : explanation of the mother's health condition and expecting the child to be involved in adult tasks to let mother rest	292 items or 13.9% of responses
rest and taking drugs ^b : behaviors related to reducing pain in mothers with avoidance	resting, drugs	284 items or 13.6% of responses
setting boundaries around mother's behaviors ^b : mother intentionally sets boundaries	effective planning, making self limitations, diminishing household chores	240 items or 11.5% of responses

on her schedule, environment or behavior		
ignoring and distraction^b:	ignoring or not focusing on pain	196 items or 9.3% of responses
emotion focused coping		
self preservation parenting^c:	letting the child move her/him	178 items or 8.5% of responses
managing pain and parenting by being less active as a parent	self, parenting in a way that doesn't aggravate pain	
physical and mental practice^b:	physical exercise, Yoga,	124 items or 5.9% of responses
behavior related to reducing pain in mothers with active confrontation	meditation,	
miscellaneous strategies: no clear pattern in the coping strategies		80 items or 3.8% or responses

^aClassified as mutuality in relationship

^bClassified as developing the expectations and beliefs about integration of parenting and living with chronic pain

^cClassified in the category of relationship-focused coping.

Difference between mothers with MS, RA, LBP, and well mothers in relational coping strategies

In order to determine the differences between groups in seven relational CSs, ANOVA and/or ANCOVA (if any of the variables had significant correlation with the coping strategies) were used. Some post hoc comparisons (tukey HSD) were made between significant relational coping strategies.

Table3. ANOVAs or ANCOVAs between groups on the seven relational coping strategies

coping strategies	well M (SD)	RA M (SD)	LBP M (SD)	MS M (SD)	F	η^2
social support^d	0.75 (0.43)	0.75 (0.43)	0.79 (0.40)	0.73 (0.45)	7.83 _[3,504]	0.07
quality one-on-one time	0.93 ^a (0.24)	0.65 ^b (0.48)	0.52 ^b (0.50)	0.39 ^b (0.49)	35.68* _[3,506]	0.17
encouraging mature behavior^e	0.40 (0.49)	0.65 (0.48)	0.62 (0.48)	0.61 (0.48)	19.39 _[3,504]	0.16
rest and taking drugs^c	0.49 ^a (0.50)	0.95 ^b (0.21)	0.85 ^b (0.35)	0.82 ^b (0.38)	28.80* _[3,505]	0.18
setting boundaries^f	0.36 (0.48)	0.60 (0.49)	0.43 (0.49)	0.49 (0.50)	6.69 _[3,505]	0.05
distraction	0.06 ^a (0.24)	0.40 ^b (0.49)	0.49 ^b (0.50)	0.58 ^b (0.49)	34.18* _[3,506]	0.16
self-preservation parenting^g	0.06 ^b (0.24)	0.45 (0.50)	0.50 ^a (0.50)	0.38 ^b (0.48)	18.14* _[3,503]	0.16
physical and mental practice	0.23 (0.42)	0.25 (0.43)	0.22 (0.41)	0.26 (0.44)	0.29 _[3,506]	0.002

* $p < 0.001$

^{a,b}Represent means that were significantly different with each other.

^cSeverity of pain was a significant covariate for self care.

^dAge of child and conflict were significant covariates for social support.

^eAge of child and positive relationship were significant covariates for encouraging mature behavior

^fNumber of children was a significant covariate for setting boundaries

^gAge of mother, pain disability and stress were significant covariates for self preservation parenting

As it is demonstrated in Table 3, mothers with RA, LBP, and MS engaged in significantly more rest and taking drugs than did well mothers ($F[3,505]=28.80, p<0.01$). Well mothers utilized significantly more quality one-on-one time with their children than mothers with RA, LBP and MS ($F[3,506]=35.68, p<0.001$). Mothers with RA, LBP and MS reported more ignorance and distraction in comparison with well mothers ($F[3,506]=34.18, p<0.001$). Mothers with LBP were significantly more engaged in self-preservation parenting than mothers with MS and well mothers ($F[3,503]=18.14, p<0.01$). There were no differences between four groups on encouraging more mature behaviors in the child, setting boundaries around mother's daily behaviors and seeking social relationship.

Differences between mothers with chronic illnesses in pain variables and duration of illness

Analyses of pain severity, disability and duration of illness between mothers with MS, LBP and RA are reported in table 4.

Table 4. Difference in pain variables between groups of patients.

variable	Total (SD)	M	MS M (SD)	LBP M (SD)	RA M (SD)	F
severity of pain	50.61 (21.86)	45.82 (20.86)	51.55 ^a (19.19)	54.58 ^b (24.89)	5.25*	
pain related disability duration	10.36 (5.84)	9.98 ^a (6.53)	9.73 (5.08)	11.46 ^b (5.82)	3.22**	
	3.80 (4.57)	5.61 (4.51)	4.35 (4.40)	5.20 (4.95)	1.81	

* $P < 0.006$, ** $P < 0.04$

^{a,b} Represent means that were significantly different with each other

As it is demonstrated in table 4, mothers with RA had significantly higher levels of pain severity than mothers with LBP ($F[3,377]=5.25, p<0.006$) and mothers with RA had significantly higher levels of pain disability than mothers with MS ($F[3,377]=3.22, p<0.04$). There was no significant difference between three groups in duration of illness.

Relational coping strategies predict pain severity and pain-related disability.

Two hierarchical regressions were performed to predict severity of pain and pain-related disability.

Table 5. Correlation of all variables in mothers with chronic illnesses

variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.seeking relationship	1	-0.12**	0.0	-0.06	-0.07	0.05	0.13*	0.10	-0.07	0.05	0.13*	0.10*	0.08	0.02
2.quality time		1	0.0	0.04	-0.04	-0.09*	-0.08	0.09	-0.01	-0.04	-0.00	-0.07	-	-
3.encourage behavior			1	0.23**	0.11**	0.15**	0.13**	-	0.16**	0.08	0.34**	0.05	0.23**	0.32**
4.rest				1	0.16**	0.007	0.14**	0.06	-	0.01	0.11**	0.00	0.26**	0.25**
5.setting boundaries					1	0.17**	0.13**	-	0.04	0.16**	0.08	0.01	0.18**	0.11**
6.distraction						1	0.14**	0.06	0.23**	0.05	0.01	-0.05	0.11**	0.24**
7.self-preservation							1	0.06	0.14**	-0.01	-0.03	0.14**	0.33**	0.29**
8.physical/mental practice								1	0.05	0.09*	-0.03	0.06	-	-0.01
9.duration									1	0.14**	0.18**	0.06	0.32**	0.37**
10.number of children										1	0.21**	0.37**	0.15**	0.18**
11.age of child											1	0.38**	0.05	0.10*
12.age of mother												1	-0.01	-0.02
13.disability													1	0.69**
14.pain severity														1

* $p < 0.05$, ** $p < 0.01$

Table 6: regression predicting pain disability with demographic variables and relational coping strategies

variable	step 1		step 2		step 3	
	B(SE)	β	B(SE)	β	B(SE)	β
constant	4.92 (0.52)		1.51 (0.60)		1.94 (0.63)	
number of children	0.59 (0.23)	0.10	0.52 (0.21)	0.09**	0.48 (0.21)	0.08**
duration	0.46(0.06)	0.31*	0.39(0.05)	0.26*	0.34(0.05)	0.23*
rest and taking drugs			2.71 (0.54)	0.19*	2.35 (0.54)	0.17*
setting boundaries			1.07 (0.54)	0.07**	1.09 (0.54)	0.08**
self preservation parenting			3.53 (0.56)	0.24*	3.49 (0.55)	0.22*

encouraging mature behavior		1.05 (0.52)	0.07*	1.06 (0.55)	0.07**
distraction				1.00 (0.54)	0.07
quality one-on-one time				-3.05 (0.84)	-0.14*
ΔR²	0.11	0.15		0.03	

* $p < 0.001$, ** $p < 0.01$,

Table 7: regression predicting pain severity with demographic variables and relational coping strategies

variable	step 1		step 2		step 3	
	B(SE)	β	B(SE)	β	B(SE)	β
constant	22.70(3.87)		12.94(3.81)		15.11(3.76)	
number of children	3.05 (1.00)	0.12*	3.19(0.94)	0.13*	2.85(0.90)	0.11*
age of child	0.26(0.85)	0.01	-0.74(0.84)	-0.03	-0.52(0.81)	-0.02
duration	2.24(0.26)	0.35*	2.01(0.25)	0.31*	1.69(0.24)	0.26*
rest and taking drugs			12.14(2.41)	0.20*	9.63(2.25)	0.16*
setting boundaries			1.06(0.53)	0.07*	1.05(0.52)	0.07*
self preservation parenting			12.14(2.41)	0.20*	9.98(2.33)	0.16*
encouraging mature behavior			6.48(2.41)	0.15*	6.98(2.40)	0.11**
distraction					7.39(2.27)	0.12*
quality one-on-one time					-21.16(3.48)	-0.22*
ΔR²	0.15		0.13		0.06	

* $p < 0.001$, ** $p < 0.004$

Tables 6 and 7 summarize the results of hierarchical regression analyses examining the relationship between relational coping strategies and pain-related disability and pain severity after controlling for any possible confounding factors. Before running these regressions Pearson correlations were calculated between pain-related disability, severity of pain, relational coping strategies and possible confounding variables including age of mother, age of child, number of children and duration of illness which are indicated in table 5. In each regression, all variables found to be significantly correlated with criterion variables were entered in regression equations. As can be seen in Tables 6 and 7, the block of control variables significantly predicted pain severity ($F(2, 377)=31.48, p < 0.001, R^2=0.15$) and pain related disability ($F=34.20, p < 0.001, R^2=0.11$). Of these, duration of illness showed strong and significant associations with pain-related disability ($\beta=0.31, p=0.001$) and pain severity ($\beta=0.35, p=0.001$) but number of children was only associated with pain severity ($\beta=0.12, p=0.001$).

The second step of the model added relational coping strategies with the theme of fear-avoidance of pain (i.e., rest and taking drugs, setting boundaries around daily activities, self-preservation parenting, encouraging the child for mature behavior). With addition of these variables, significant amount of variance of pain severity ($F(6,373)= 27.88, p < 0.001, R^2=0.28, \Delta R^2=0.13$) and pain-related disability ($F(6,373)=30.91, p < 0.001, R^2=0.26, \Delta R^2=0.15$) were predicted. All relational coping strategies in step II had significant and negative relationship with criterion variables.

The third step of the model added relational coping strategies with the theme of acceptance and confrontation (i.e., distraction of pain, quality one-on-one time). The model significantly predicted variance of pain severity ($F(6,373)=30.91, p < 0.001, R^2=0.34, \Delta R^2=0.06$) and pain-related disability ($F(6,373)=30.91, p < 0.001, R^2=0.29, \Delta R^2=0.03$). Of these relational coping strategies, quality one-on-one time showed significant associations with pain severity ($\beta=-0.22, p=0.001$) and pain-related disability ($\beta=-0.14, p < 0.01$) but distraction of pain was only associated with pain severity ($\beta=0.12, p < 0.001$).

IV. DISCUSSION

In present research, women's adaptation to chronic illnesses was examined in the context of parent-child relationship. Maternal coping strategies have been identified using the relational theory of coping. This theory is based on the importance of relationship in women's coping strategies and identifies three general ways that individuals develop to meet their own needs and those involved in the relationship. These ways are consisted of (a) mutuality (b) relationship beliefs and expectations and (c) relationship-focused coping strategies. In order to examine relational coping strategies, mothers were interviewed to identify their daily used relational copings while parenting in pain. Four groups of mothers including well mothers, mothers

with MS, mothers with RA and mothers with LBP were surveyed. A total of 2086 responses were extracted from interviews and majority of mothers generated three to five responses. Responses were classified in seven super ordinate categories in three general ways of coping including mutuality (i.e., encouraging more mature behavior in the child), developing beliefs and expectations about relationship (i.e., rest and taking drugs, physical and mental practice, setting boundaries around daily behavior, distraction from pain) and relationship-focused coping (i.e., positive interaction with children, seeking social relationship, self preservation parenting). Furthermore some coping strategies including rest and taking drugs, setting boundaries, self preservation parenting and encouraging mature behavior were labeled as relational coping strategies with the theme of fear-avoidance and some other coping strategies including seeking social relationship, physical and mental practice, quality one-on-one time, and distraction of pain were considered as relational coping strategies with the theme of acceptance and confrontation with pain. Participants also responded to questionnaires of VAS and PDQ in order to examine severity of pain and pain-related disability.

Results demonstrated that mothers with chronic illness reported more rest and taking drugs than well mothers. It was expected because mothers with chronic illness face a lot of parenting problems in their daily life (Barlow et al, 1999; Evans, Shipton, Keenan, 2005). Therefore they need to retrieve their energy and reduce their pain with more self-care strategies. This finding is also consistent with third hypothesis of present research that predicts lower utilization of relational coping strategies with the theme of fear-avoidance among well mothers.

Consistent with second research hypothesis, results demonstrated that well mothers were also more likely to engage their children in activities and spend quality one-on-one time than mothers with chronic illnesses. Consistent with this finding Kop et al (1995) found that mothers with LBP and chronic headache are not active in leisure activities. One explanation might be related to illness challenges and more parenting difficulties that chronically ill mothers experience.

All patient mothers reported more distraction than well mothers. This finding can be explained with more unchangeable conditions that chronic ill mothers experience because distraction as an emotion-focused coping is more frequently used in conditions that are estimated as unchangeable (Folkman, Lazarus 1985). Therefore, mothers with chronic illness utilize emotion-focused coping more than well mothers because they face more difficult and unchangeable conditions than well mothers. This finding was not expected in research hypothesis but it is not in contrast with them.

Mothers with LBP were more engaged in self-preservation parenting than mothers with MS and well mothers. Utilizing self-preservation parenting as a coping strategy in patients with arthritis problems have been pointed out in previous research (Foster et al 1999; Katz, Pasch, Wong 2003). As it was mentioned earlier in first hypothesis of present research, results demonstrated that mothers with RA and LBP mostly utilized this coping. This finding can be explained with characteristics of low back pain, because patients with LBP mostly suffer mechanical problems like muscle stiffness and disc herniation (Jackson, Simpson, 2006), whereas mothers with MS mostly suffer physiologic problems like demyelination or irregular asymmetric movement patterns (Henze, 2005). Therefore alternative ways of lifting, bathing and feeding a child can be more effective for mothers with LBP.

Findings demonstrated that mothers with RA had significantly higher levels of pain severity than mothers with LBP. Furthermore, mothers with RA had significantly higher levels of pain-related disability than mothers with MS. Results also demonstrated that relational coping strategies with the theme of fear-avoidance of pain significantly and positively predicted severity of pain and pain-related disability in mothers with chronic illnesses. (i.e., rest and taking drugs, setting boundaries, self-preservation parenting and encouraging mature behavior in the child). On the other hand, two relational coping strategies with the theme of confrontation and acceptance significantly and negatively predicted severity of pain in mothers with chronic illness (i.e., quality one-on-one time, distraction) and only one of them called quality one-on-one time with children could significantly and negatively predict pain-related disability in mothers with chronic illnesses. It seems that relational coping strategies with the theme of confrontation were relatively weak as two of them (i.e., seeking social relationship and physical and mental practice) were excluded from regressions due to insignificant relationship with criterion variables and among two others, one of them couldn't predict pain-related disability (distraction).

As it was hypothesized, mothers with chronic illness who utilize relational coping strategies with the theme of fear-avoidance of pain are more likely to have higher levels of pain severity and pain-related

disability. This model postulates two opposing responses to chronic pain: confrontation and avoidance. Individuals, who fear pain, avoid and escape daily activities that are expected to produce pain and results in functional disability. As avoidance occurs in anticipation of pain rather than facing with pain, patients don't get sufficient feedback to correct their wrongful expectations and their avoidance behavior persists (Vlaeyen, Linton, 2001). Longstanding avoidance has detrimental consequences on musculoskeletal and cardiovascular systems leading to what is called "disuse syndrome" (Bortz 1984).

Present research studied chronically ill mothers and their coping strategies in response to pain while parenting young children. Findings provided evidence that mothers suffering MS, RA and LBP utilize different relational coping strategies in terms of the domain that each illness can impact in daily life. Present research also demonstrated that relational coping strategies with the theme of fear-avoidance of pain are associated with severity of pain and pain-related disability. These findings could help health professionals to advise coping strategies that are more suitable to each group of patients.

However, these findings should be interpreted in light of some limitations. First, we collected the data based on patients' report and it can be more helpful to apply a naturalistic observation that would increase reliability of results. Second, a larger sample could help to find small but important effects. The interview applied in this research can be developed into a structured and more specific measure of relational coping strategies to further explain mother-child interactions when mother suffers chronically an illness.

Disclosure

Here by, we would like to declare that there is no conflict of interests between the authors.

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