Breast cancer worry is a specific concern, fear, anxiety, or worry about developing breast cancer in the future (Consedine et al., 2004). It is associated with adherence to breast cancer screening, breast self-examination (Brain et al., 1999; Hay et al., 2006), and *BCRA1/2* testing for breast cancer (Lerman et al., 1995), so understanding the predictors of breast cancer worry is an important focus of concern.

General distress is one factor that may influence cancer worry. For example, women with breast cancer who report general distress also experience greater cancer-related distress, anxiety, or fear of the future (Lam et al., 2012). Despite this, general distress has not been examined for its influence on cancer-related worry in healthy women.

Previous studies have documented a positive relationship between family history and cancer worry, and related outcomes such as cancer-related distress (Bennett et al., 2010; Patenaude, 2013). Having a family history of breast cancer may also lead to greater perceived risk of developing the disease. Risk perceptions are subjective, reasoned estimates of the likelihood of a threatening event taking place (Weinstein, 1999). *Absolute* risk is the subjective evaluation of risk of developing breast cancer, and *comparative* risk is the subjective evaluation of risk compared to others of similar age and characteristics (Lipkus et al., 2005). Only comparative risk perceptions predicted higher levels of worry in healthy women in a study by Lipkus et al. (2005). While it seems plausible to

suggest that the heightened awareness of risk in women with a family history could determine this worry, risk perceptions are associated with worry in healthy women with no family history (Gurmankin Levy et al., 2006), and in women with affected relatives (Hopwood et al., 2001). Risk perceptions may be important in predicting breast cancer worry in all women in the general population, but the research is limited by measurement issues (Bottorff et al., 2004). There is no gold standard to assess risk perceptions (French and Marteau, 2008), so they are measured in a variety of ways, such as numerical, verbal and ratio scales. This makes comparisons across studies difficult and leads to varying levels of reported risk. For example, in a meta-analytic review in breast cancer (Katapodi et al., 2004) numerical risk measures produced overestimations, whereas verbal measures produced optimistic bias. The impact of this measurement issue needs to be addressed, and comparison of measures within the same sample would be of benefit.

The Self-Regulatory Model of Illness Behaviour (SRM; Leventhal et al., 1980) may provide a framework to understand breast cancer worry in healthy women. It describes how illness perceptions are characterised by five dimensions; identity, consequences, cure / control, timeline, and causes. These are associated with psychological functioning and distress across a wide variety of illnesses (Hagger and Orbell, 2003), including breast cancer (McCorry et al., 2013). The beliefs that healthy women hold as to the

consequences and curability of breast cancer can impact upon cancer-specific worry (Buick and Petrie, 2002). For example, lower perceived control and more severe consequences were linked to more breast cancer-related distress in healthy women (Rees et al., 2004).

Risk perceptions are similar to illness perceptions, in that personal beliefs of risk of illness can be developed from assessing health status, health habits, and family history of illness (Cameron, 2008). Risk judgements are constructed from likelihood and severity estimates. Researchers agree that risk perceptions are distinct constructs, but it has been suggested that the basic components of risk judgements are built upon illness perceptions (Cameron, 1997; Marteau and Weinman, 2006). Despite this, little is known of the relationship between illness and risk perceptions as studies rarely measure these variables together.

One of the few studies to do so was conducted by Rees and colleagues (2004) who assessed 117 women at increased risk of developing breast cancer, (based on family history of the disease) and 100 healthy women with average risk of developing the disease. Healthy women with an average risk of developing breast cancer reported less cancer-specific distress, different causal beliefs, more illness coherence, higher identity, and less severe consequences than women with increased risk. The assertion of the SRM that illness and risk perceptions may be more than simply independent predictors of worry could imply that risk perceptions mediate

the relationship between illness perceptions and breast cancer worry, but as no research to date has examined both risk and illness perceptions as predictors of cancer-related worry, this relationship has not been assessed.

The aim of the current study, therefore, is to assess factors that predict breast cancer worry in healthy women from the community. Variables such as family history, anxiety, and risk and illness perceptions have all been assessed separately, but the current study examines their combined influence on breast cancer worry. Specifically, it is hypothesised that having a family history of breast cancer, higher levels of state anxiety, higher risk perceptions, and more negative illness perceptions predict greater breast cancer worry. Due to the lack of research on the relationship between risk and illness perceptions, and the implication of the SRM that variables such as risk perceptions may mediate the influence of illness perceptions on breast cancer worry (Cameron, 1997; 2003), the present study also examines the potential mediating role of risk perceptions on the relationship between illness perceptions and breast cancer worry.

Method

Participants

The sample comprised 948 women (M = 29.93 years, SD = 11.74) from the Republic of Ireland. Women included were 18 years of age or over, without a previous diagnosis of breast cancer, and able to read and write

English. The majority of respondents were Anglo-Saxon in their cultural background (*n* = 933; 98.40%). Women were single (*n* = 522; 55.00%), married (*n* = 232; 24.50%), living with a partner (*n* = 161; 17.10%), divorced (*n* = 24; 2.50%), or widowed (*n* = 9; 0.90%). Women were employed (*n* = 539; 56.80%), in third level education (*n* = 346; 36.50%), working in the home (*n* = 26; 2.80%), retired (*n* = 13; 1.40%), or unemployed (*n* = 24; 2.50%). Many women reported no family history of breast cancer (*n* = 524; 55.30%), were unaware of their family history (*n* = 43; 4.50%), or had one relative (*n* = 304; 32.10%), or more than one relative diagnosed (*n* = 77; 8.10%).

Measures

Family history of breast cancer was measured by asking participants to indicate whether any female relatives had ever been diagnosed with breast cancer. Participants were also asked to indicate how often they perform breast self-examination, ranging from 0 (*never*) to 5 (*more than once a month*). Mammography screening was assessed by asking participants to indicate whether they have ever had a mammogram.

The Spielberger State-Trait Anxiety Scale (STAI; Spielberger et al., 1970) was used to measure state and trait anxiety. Participants indicated their agreement to 20 statements from 1 to 4. Items are summed to give a total trait and total state anxiety score, ranging from 20 to 80. The STAI has

demonstrated reliability across a number of studies (Barnes et al., 2002). In the current study, internal consistency for both subscales was α = .93.

Absolute risk perceptions were assessed using four questions adapted from Gurmankin Levy and colleagues (Gurmankin Levy et al., 2006). Numerical risk perceptions was assessed by asking participants to rate the likelihood of developing breast cancer in one's lifetime, and also in the next five years, from 0 (*you definitely will not be diagnosed with breast cancer*) to 100 (*you definitely will be diagnosed with breast cancer*). Verbal risk estimates were also measured (how would you rate the chance of developing breast cancer; from *very low to very high*). Participants were also asked to rate how vulnerable they felt to getting breast cancer at some point in their lifetime from 1 (*not at all*) to 7 (*extremely*).

Comparative risk perceptions were measured using one item asking women to rate their perceived chance of developing breast cancer in comparison to that of the average woman from 1 (*much lower) to 5 (much higher*).

The Revised Illness Perception Questionnaire (IPQ-R; Moss-Morris et al., 2002), modified for a healthy population assessed illness perceptions. Respondents rated their agreement with statements about breast cancer. Items are rated from 1 to 5 except for those in the identity dimension; respondents indicate from a list of symptoms, whether they believe they are symptoms of breast cancer (yes/no). The questionnaire yields a total of nine

subscales: timeline (acute/chronic), cyclical timeline, consequences, identity, personal control, treatment control, emotional representations, and illness coherence. Acceptable internal reliabilities for the subscales have been reported (Hagger and Orbell, 2003). Internal consistency ranged from .47 to .90 in this study.

Breast cancer worry was assessed by four questions adapted from previous research (Cameron and Diefenbach, 2001; Consedine et al., 2004; Lipkus et al., 2005). Participants were asked to rate how fearful, worried, concerned, and anxious they were of getting breast cancer in their lifetime, from 1 to 5, and a mean worry score was calculated. Higher scores indicate greater breast cancer worry. Internal consistency for the current study was $\alpha = .94$.

Procedure

The study received approval from the Institutional Research Ethics Committee. Information about the study, along with contact details of the researcher, was sent to various organizations via email and websites. Participants completed the questionnaires anonymously. Participants who were interested were invited to complete the survey using a password protected survey link online. Participants who did not want to participate online could contact the researcher for a paper copy of the survey and

consent form. A modified online consent form was used for those who completed the study online.

Statistical analyses

Data were analysed using SPSS for windows (Version 21). Principal Components Analysis was conducted on the causal subscale of the IPQ-R (Moss-Morris et al., 2002). Correlational analyses were conducted to examine variables that relate to breast cancer worry. A hierarchical multiple regression was conducted to test the hypothesis that having a family history of breast cancer, higher levels of state anxiety, higher risk perceptions, and more negative illness perceptions predict greater breast cancer worry. To test the mediator hypothesis that the relationship between illness perceptions and breast cancer worry exists because women perceived themselves to be more at risk of developing the disease, a series of multiple regressions were conducted using Baron and Kenny's method for testing mediation (Baron and Kenny, 1986).

Results

Participant characteristics and descriptive statistics

In total, 831 women completed the study online, and 117 completed paper versions of the study. Due to the anonymous nature of the study, participation rate could not be calculated. Details of the study were sent to

various organizations and websites, so it is not possible to calculate how many people saw details of the study, compared to those who took part. Examination of skewness and kurtosis revealed that all variables were normally distributed, except for age (skew value = 1.00, SE = 0.09), which was positively skewed. A logarithmic transformation was conducted and reduced the skew value (0.51). Means and standard deviations reported are from the original data (Table 1).

Moderate to high levels of breast cancer worry was reported by 12.10% of women, with a mean score of 2.83 (*SD* = 1.00). Approximately 31% of women reported never performing breast self-examination, and only 13% of women reported having a mammogram.

It is recommended that factor analysis be conducted on the causal subscale of the IPQ-R (Moss-Morris et al., 2002), so principal components analysis was conducted. It produced four components; psychological causes (e.g. stress or worry) behavioural and environmental causes (e.g. smoking), external components (e.g. germ or virus), and medical causes (e.g. ageing, hormones). The eigenvalues were 3.70, 2.18, 1.79 and 1.72, respectively. The Kaiser-Meyer-Olin (KMO) value was .85, and Bartlett's Test of Sphericity was significant (χ^2 = 4418.67, *df* = 153, $p < .001$), explaining 52.14% of the variance.

Insert Table 1 here

Correlation analyses

Demographic variables (age, marital status, employment status, ethnicity) were assessed for their associations with breast cancer worry using correlation analyses (data not shown). Only age (r = -.13, p < .001) was correlated with breast cancer worry. Breast cancer worry was negatively correlated with personal control (r = -.11, p < .001), and treatment control (r = -.12, p < .001; see online supplementary material for correlation table). It was positively correlated with all other variables, with the exceptions of illness coherence, and psychological, and medical causes, which were not significant. Breast cancer worry was positively correlated with all risk perception measures, except for ratio risk. All correlations were small to moderate (r = .08 to .55). Correlations were also conducted to examine the inter-correlations between risk and illness perceptions. Comparative, numerical, and verbal absolute risk perceptions were positively correlated with chronic timeline, consequences, and emotional representations. Absolute risk perceptions were negatively correlated with personal and treatment control. All of the risk perception measures were positively correlated with one another, except for ratio measurement.

Predictors of breast cancer worry

A hierarchical multiple regression was conducted to test the hypothesis that family history, anxiety, risk perceptions, and illness

perceptions predict breast cancer worry. The variables were entered in blocks, so that each block of variables could be examined for their additional contribution to the variance, and were chosen based on an examination of results from the correlation analyses. Age was entered in the first step, along with family history, which has been shown in previous research to influence breast cancer worry. State and trait anxiety were entered into the second step to examine the role of general anxiety. Risk perceptions are considered important in the development of perceptions of illness (Cameron, 1997) so were entered in the third step. Illness perceptions were included in the final step. Correlations between predictor variables ranged from r = .08 to r = .52, whilst the VIF scores ranged from 1.08 to 3.23 (tolerance scores ranged from 0.31 to 0.93), indicating that multicollinearity was not present in this study.

The overall model was significant, accounting for 44% of the variance in breast cancer worry ($F_{(21,748)}$ = 29.38, p < .001, R^2 = .45, $Adj\ R^2$ = .44). Age and family history explained 4% of the variance in breast cancer worry ($F_{change\ (2,767)}$ = 15.93, p < .001, $Adj\ R^2_{\ change}$ = .04), although the beta weights were not significant. Anxiety accounted for 7% of the variance ($F_{change\ (2,765)}$ = 33.31, p < .001, $Adj\ R^2_{\ change}$ = .07), with higher levels of state anxiety (β = .12, p = .006) predicting greater worry. Risk perceptions accounted for 18% of the variance ($F_{change\ (5,760)}$ = 38.03, p < .001, $Adj\ R^2_{\ change}$ = .18). Women holding higher numerical risk perceptions (β = .14, p =

.001), and higher verbal risk estimates (β = .12, p = .009) reported greater worry. Illness perceptions explained a further 15% of the variance ($F_{change\ (12,748)}$ = 18.03, p < .001, $Adj\ R^2_{\ change}$ = .15). Holding more chronic timeline beliefs (β = .07, p = .023), a strong sense or understanding of breast cancer (β = .11, p < .001), and more negative emotional representations (β = .43, p < .001) predicted greater worry.

To examine further the relationship between levels of numerical risk perceptions and breast cancer worry, a one-way ANOVA was conducted. Women were identified based on their numerical absolute risk perceptions scores as low (< 40%, risk) average (41-59%), or high risk (> 60%), based on review of the mean and median. The overall model was significant ($F_{(2,\ 916)}$ = 92.19, p < .001). Women reported greater worry if they reported their risk as 60% or over (M = 3.59, SD = 0.84), followed by those who reported their risk as 41-59% (M = 3.06, SD = 0.92). Women who reported their risk as less than 40% reported the lowest breast cancer worry (M = 2.49, SD = 0.92).

Insert Table 2 here

Mediation analyses

To test the hypothesis that the relationship between illness perceptions and breast cancer worry exists because women perceive

themselves to be more at risk of developing the disease, four multiple regressions were conducted (see Table 2). In this study, a mediation effect is demonstrated when (i) illness perceptions are related to risk perceptions; (ii) risk perceptions are related to breast cancer worry; (iii) risk perceptions are related to breast cancer worry; and (iv) the contribution of illness perceptions to breast cancer worry is reduced when controlling for risk perceptions. In each analysis, age and family history were controlled in the first step. Correlational analyses (see online supplementary material) identified the illness perception dimensions and measures of risk perceptions that correlated with each other and breast cancer worry. Numerical risk perceptions were correlated with chronic timeline, cyclical timeline, illness coherence and emotional representations, as well as breast cancer worry. These variables were therefore included in the regressions.

In the first regression, illness perceptions were regressed onto risk perceptions, explaining 12% of the variance. Only cyclical timeline, chronic timeline, illness coherence and emotional representations predicted risk perceptions. In the second regression, illness perceptions were regressed onto the dependent variable, breast cancer worry, and explained 33% of the variance. In the third regression, risk perceptions were regressed onto breast cancer worry and explained 19% of the variance. Illness perceptions and risk perceptions were regressed onto breast cancer worry. The total variance explained by risk and illness perceptions was 38%. The beta weights for

chronic timeline, illness coherence and emotional representations were reduced, although still significant, indicating that risk perceptions partially mediate the influence of these variables to breast cancer worry. In applying the Sobel test to assess the significance of intervening intervention effects (Sobel, 1982); the differences between the coefficients before and after adjustment for risk perceptions were significant (*p*s < .01), indicating partial mediation.

Discussion

This study examined factors that influence breast cancer worry in a community sample. Analyses were conducted to examine the influence of family history, state and trait anxiety, risk perceptions, and illness perceptions on breast cancer worry. The overall regression model was significant, explaining 44% of the variance. Specifically, it was found that younger women reported more worry. While the variance explained was small; this finding confirms previous research (Brain et al., 1999). Having a family history of breast cancer was also related to greater worry. This finding has been found previously (van Oostrom et al., 2007), indicating that women feel more worried about developing breast cancer in the future if they have affected family members. Family history should, therefore, continue to be accounted for in future research in this area.

Women who reported more state anxiety also reported higher breast cancer worry, but it only accounted for a small percentage of the variance, suggesting that worry is not simply due to a predisposition to general anxiety or negative mood. This is the first study to examine this relationship in a healthy sample, highlighting the importance of examining anxiety in studies that also measure worry and distress.

Risk perceptions influenced breast cancer worry. Women with higher absolute risk estimates measured numerically and verbally, reported greater worry, akin to Hopwood and colleagues (2001). This was also

evident in the one-way ANOVA, where women who reported higher risk perceptions also reported greater worry. It is interesting to note that only absolute risk perceptions were predictive of worry in the regression. Previous research has argued that comparative risk (compared to average woman), rather than absolute risk, predicts cancer worry (Lipkus et al., 2005). It may be that these estimates utilise different information; such that absolute risk is associated with negative affect and perceptions of control, whilst comparative risk is related to positive mood (Helweg-Larsen and Shepperd, 2001). Further research is needed to reveal the predictive influence of these different types of risk estimates. This study included women from the community. In previous studies, women who were 'at-risk' were sampled (Katapodi et al., 2004), wherein women who are attending genetic testing or have a known higher risk of developing cancer were included. Weinstein (1988; 1999) has suggested that there is a temporal component to risk estimates; women who are recruited at hospital settings are more aware of their risk, which is reflected in their estimates, whereas the perceived risk in women from the community who have a family history may be minimised. Although family history can influence breast cancer worry, perceived risk of developing the disease was more predictive of worry. The greater the perceived risk, the more worry reported. It is, therefore, important to not limit the focus of research to high-risk groups that have been identified based on their family history, without also

measuring perceived risk of developing the disease. Although there is no standard measurement of risk perceptions, this is the first study to include such a variety of risk measures, and provides a unique insight into how different risk perception measures relate to an outcome and it highlights an important limitation in the methodology used in existing risk research.

Only one previous study has examined illness and risk perceptions simultaneously in healthy women (Rees et al., 2004). Specifically, it showed that women with average risk of developing cancer and with a strong illness identity reported more cancer-related distress. In this study, illness coherence, chronic timeline, and emotional representations predicted greater worry. That is, women are more worried if they believe they have a greater understanding of breast cancer, believe it to be a chronic disease, and hold more negative emotional representations. The findings are supportive of the importance of illness perceptions in determining psychological outcomes (Hagger and Orbell, 2003). The different dimensions found to be predictive in the current study in comparison to Rees et al. (2004) are of note. Their sample was older, and they were receiving counselling for genetic testing for *BCRA1/2* mutations. In addition, in the Rees study, analyses were conducted on the two groups separately; risk and illness perceptions were assessed in women with increased or average risk. The current study included healthy women in the community, with varying levels of perceived risk.

The SRM was constructed initially to explain a person's response to a health threat; but was utilised in this study to examine how illness perceptions relate to perceptions of risk and subsequent worry. Risk perceptions partially mediated the relationship between chronic timeline, illness coherence, emotional representations, and breast cancer worry. Women who found breast cancer to be more negative emotionally, considered it to be a chronic condition, and believed they had a greater understanding of breast cancer reported greater worry only when they also perceived greater risk. So although women may hold negative perceptions of breast cancer, it will not lead to increased worry, unless they also hold high perceptions of risk of developing the disease. While this mediation warrants confirmation and further exploration, the findings provide tentative support that risk and illness perceptions are associated with one another in relation to cancer worry. The Self-Regulatory model could perhaps be expanded to include measures of risk, which may help to increase the predictive value of the model in healthy populations.

Clinical implications and future research

The current study focused on the role of the SRM and risk perceptions in predicting breast cancer worry, but these variables may have implications for future health promotion campaigns aimed at increasing adherence to screening. Illness perceptions have been implicated as

predictors of mammography screening attendance in women in the community (Lostao et al., 2001), but very little research has explicitly measured risk perceptions for their influence on screening. In contrast to studies that have recruited women through screening programmes, most women in the current study had not engaged in screening or disease-detecting behaviours. Future research could usefully extend current findings by measuring the influence of worry, risk and illness perceptions, on adherence rates to screening and observable behaviours such as breast self-examination in healthy women. The SRM is a useful model, and its applicability to healthy populations is becoming more pertinent with the advent of screening programmes and genetic susceptibility testing for illnesses. Also of relevance is that illness perceptions are developed from a variety of sources, so they may be fully developed before individuals are diagnosed with an illness. Measurement of illness perceptions in at-risk as well as healthy populations may explain both an individuals' response to a diagnosis, as well as to the perceived risk of developing a disease.

There are limitations to this study that need to be noted. It is a cross-sectional study and thus causal relationships cannot be inferred. Conducting prospective research will help clarify the factors that influence cancer worry and the directional relationship between risk and illness perceptions. The sample overall was quite young; very few women were aged 50 or more. While age was controlled for in the analyses, the results may not be

generalizable to older women. One further limitation is that although general anxiety was included, a broader range of mood was not assessed in the current study. Mood may influence participants' judgements and perceptions of risk in the future, so should be incorporated in future risk research.

Despite these limitations, the findings add to the literature given that the study is one of the few to measure both risk perceptions and illness perceptions in a healthy group. It is the only study to date that has examined risk perceptions as a potential mediator between illness perceptions and worry in breast cancer, and to have included a range of different measures of perceived risk. The interaction of risk and illness perceptions is a novel finding, and may provide a better understanding of how these constructs can be conceptualised. Moreover, as the study comprised a large number of community-based women, the findings can be generalised to the wider population.

The study highlights that breast cancer worry is not influenced by any one single factor, but a range of variables that can be considered in future studies that aim to reduce breast cancer worry, whilst also providing a framework that may promote screening behaviours.

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Table 1. *Descriptive Statistics of the Variables under Study*

Variable	*M*	*SD*	α	Range
Age	29.93	11.74	-	18-70
Mean cancer worry	2.83	1.00	.94	1-5
State anxiety	38.16	10.82	.93	20-80
Trait Anxiety	41.23	10.46	.93	20-78
Risk perceptions				
Lifetime numerical risk %	37.20	21.43	-	0-100
Five-year numerical risk %	18.89	19.72	-	0-100
Verbal estimate	2.61	0.93	-	1-5
Ratio risk	4.43	1.80	-	1-7
Comparative risk	2.83	0.80	-	1-5
Vulnerability estimate	3.75	1.31	-	1-7
Illness perceptions				
Identity	10.37	3.43	.81	0-17
Personal Control	20.99	3.66	.72	8-30
Treatment Control	18.80	2.61	.67	11-25
Consequences	23.23	3.13	.62	12-30
Chronic Timeline	18.82	3.25	.70	8-29
Cyclical Timeline	12.35	2.31	.67	4-20
Illness Coherence	16.03	4.30	.90	5-25
Emotional Representations	18.39	4.77	.87	6-30
Psychological Causes	16.93	4.85	.87	6-30
Behavioural Causes	13.61	2.90	.69	4-20
External Causes	7.46	2.06	.47	3-15
Medical Causes	19.96	2.75	.48	5-25

Table 2. *Series of Hierarchical Multiple Regressions Assessing the Mediating Role of Lifetime Numerical Risk Perceptions to the Relationship between Illness Perceptions and Breast Cancer Worry*

Step and variable	B	SE	β	R^2	*Adj* R^2	*Adj* R^2_{change}	F_{change}
Regression (i). Criterion: Risk perception							
1. Age	-23.12	4.64	-.18***	.10	.09	.09	41.81***
Family history	10.19	1.37	.24***				
2. Chronic timeline	1.13	0.24	.14***	.22	.21	.12	10.58***
Cyclical timeline	1.10	0.32	.12***				
Illness coherence	0.53	0.17	.11***				
Emotional representations	1.09	0.15	.25***				
Regression (ii). Criterion: Breast cancer worry							
1. Age	-0.60	0.19	-.10**	.04	.03	.03	14.89***
Family history	0.24	0.06	.12***				
2. Chronic timeline	0.04	0.01	.14***	.37	.36	.33	34.04***
Cyclical timeline	0.02	0.01	.04				
Illness coherence	0.03	0.01	.15***				
Emotional representations	0.11	0.01	.54***				
Regression (iii). Criterion: Breast cancer worry							
1. Age	-0.34	0.19	-.05	.05	.05	.05	23.31**
Family history	0.12	0.06	.06				
2. Risk perception	0.02	0.00	.46***	.24	.24	.19	223.73***
Regression (iv). Criterion: Breast cancer worry							
1. Age	-0.32	0.19	-.06	.04	.04	.04	15.93**
Family history	0.11	0.06	.06*				
2. Chronic timeline	0.03	0.01	.08**	.43	.42	.38	40.67***
Cyclical timeline	0.01	0.01	.01				
Illness coherence	0.03	0.01	.12***				
Emotional representations	0.10	0.01	.47***				
Risk perceptions	0.01	0.00	.28***				

*$p < .05$, **$p < .01$, ***$p < .001$