Positive change with Ménière's disease

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Abstract

Objective: The aims of this study were twofold: to determine in what way people with a non-fatal chronic illness experience positive change after the onset of their illness, and to determine whether comparing with other people with Ménière's disease influenced perceiving this change.

Design: Using a longitudinal method, questionnaires were administered at baseline and at ten month follow-up.

Method: At both time-points 301 people with Ménière's disease completed the Posttraumatic Growth Inventory and at baseline they also completed questionnaires measuring, demographic variables, disease severity, psychological variables (self-esteem, perceived control, and optimism), and social comparison variables.

Results: People with Ménière's disease in this study perceived positive change. Greater positive change was perceived on the domain of 'appreciation of life,' followed by 'relating to others,' 'personal strength,' 'new possibilities,' and 'spiritual change'. In addition, more change was perceived at follow-up than at baseline. Social comparison was associated with perceiving change at both time points.

Conclusions: People with Ménière's disease do perceive positive change. Perceiving change is an on-going process for people with Ménière's disease as they perceived more change over time. Social comparison was related to the perception of change, in particular, to the perception of growth in personal strength.

Introduction

Posttraumatic growth, experienced after a sudden, life-changing occurrence such as a health crisis, is positive change which is perceived to have occurred as a result of the crisis. Previous research has focused on situations such as accidents resulting in acquired brain injury (McGrath & Linley, 2006), acquired disability (Konrad, 2006), and life experiences, such as, bombings (Val & Linley, 2006). Positive change has also been found to occur in a variety of illnesses such as, breast cancer (Andrykowski et al., 1996; Bellizzi & Blank, 2006; Urcuyo, Boyers, Carver, & Antoni, 2005; Cordova, Cunningham, Carlson, & Andrykowski, 2001; Sears, Stanton, & Danoff-Burg, 2003; Schulz & Mohamed, 2004; Taylor, Lichtman, & Wood, 1984; Petrie, Buick, Weinman, & Booth, 1999), HIV and AIDs (Siegel & Schrimshaw, 2000), SARS (Cheng et al., 2006), and multiple sclerosis (de Ridder, Schreurs, & Bensing, 2000). Change occurs in a number of ways, which are often classified in terms of changes in the value people hold of themselves, of others, or the world, which may be referred to as posttraumatic growth, benefit finding, or positive change.

After a negative event, such as the onset of an illness, people may experience a number of negative life changes including, loss of function (Brazier et al., 1992; Garratt et al., 1993), loss of independence (Sidell, 1997), loss of control, and lowered self-esteem (Taylor, 1983). Then begins a long process of adjustment to their changed circumstances (Carver and Scheier, 1990; Taylor, 1983). Taylor's (1983) Cognitive Adaptation Theory (CAT) and the Organismic Valuing Theory (OVT) (Joseph & Linley, 2005a) propose a positive role for perceiving change in the adjustment process. The CAT proposes positive change to form part of 'finding meaning', one of the three adaptation processes

which are proposed to occur after a crisis. The OVT posits that this perceived change is a growth in psychological well-being (as opposed to more general subjective well-being) and involves reconstructing the self through a process of accommodation and assimilation. Support for this role in adjustment comes from observations of the levels of perceived positive change in those experiencing distress in comparison with those not in distress. For example, people with cancer have been shown to perceive more change than a 'healthy' population (Andrykowski, Brady, & Hunt, 1993). However, interestingly, the 'healthy' population in this study also perceived change, which suggests that perceiving change may be a process which occurs naturally over time anyway, but to a larger extent after a crisis.

Examples of the ways in which people perceive change are, finding more appreciation of life, becoming more spiritual than before, appreciating the love and kindness of others, becoming psychologically stronger than before, and finding new opportunities in life that hadn't been seen before (Tedeschi & Calhoun, 1996). One study which looked at people with HIV/AIDS (Siegel & Schrimshaw, 2000) also found positive change to have occurred in 'motivation to make health related changes,' and 'changes in the meaning of life.' In another study, which compared two illness populations (myocardial infarction and breast cancer), myocardial infarction patients reported more positive change than cancer patients on the domain of 'a health lifestyle change,' followed by 'a greater appreciation of life' and 'improved close relationships' (Petrie et al., 1999). However, the breast cancer group reported the most change on the domain of 'an improved close relationship,' followed by 'a greater appreciation of life,' and 'a change in personal priorities'.

These studies show positive change to be perceived differently for different illness populations which indicates that perceiving positive change is likely to be illness dependent. However, what is not understood is which characteristics determine the change which is perceived, meaning that we cannot predict how different illnesses might lead to different responses. Chronic illnesses with other characteristics may bring about a different sort of change. According to the Organismic Valuing Theory (OVT) (Joseph & Linley, 2005a), more growth occurs when the trauma experienced brings about a need for a greater change in the self. It is therefore possible that some illness experiences create a greater need for change than others, and therefore result in different levels of perceived positive change.

Ménière's disease (MD), which is associated with chronic vertigo, hearing loss, tinnitus and pressure or fullness in the ears, is a non-fatal illness and is associated with long-term, negative, physical symptoms such as severe dizziness and vomiting, and psychological effects such as anxiety and distress (Cohen, Ewell, & Jenkins, 1995). The symptoms are intermittent, lending an unpredictable nature to its management, and result in a loss of control over balance, disorientation, and an interruption of day-to-day tasks and activities (Yardley, 1994; Yardley, Dibb, & Osborne, 2003). A study, which looked at answers to an open-ended question on positive change in Ménière's disease showed change to have occurred on the domains of interpersonal relationships, lifestyle and general health, and personal development (Stephens, Kentaka, Varpa, & Pyykko, 2007). Although the results of this study indicate that people with Ménière's disease perceived change it was not possible to tell the extent to which this change occurred and what might influence this change. As there is currently a limited understanding in this area, one of

the main aims of this study was to determine the extent to which people with non-fatal long-term illnesses, such as Ménière's disease, may perceive positive changes.

Factors thought to influence the degree of positive change perceived were also included in this study. Social comparison, where we compare with others (targets), has been shown to have a positive effect on benefit finding in a study with cancer patients (Schulz & Mohamed, 2004), indicating that social comparison may influence the way change is perceived. Research has also shown that social comparison does not always lead to positive affect (Buunk, Collins, Taylor, VanYperen, & Dakof, 1990; Dibb & Yardley, 2006b) and it is possible that this may influence the extent to which positive change is perceived. Social comparison may be influencing the participants of this study as all were members of a self- help group and socially compared with each other by means of their self-help group magazine (Dibb & Yardley, 2006a), mainly by reading the 'letters to the editor' section which contained life stories of living with Ménière's disease. Other predictors such as, optimism, perceived control, and self-esteem may lead to a more positive outlook and influence perceived change (Taylor, 1983), and so were measured as part of the study.

The specific aims of this study were to determine:

The extent to which people with MD perceive positive change

What predicted perceiving positive change, specifically, whether social comparison played a role

Method

Participants and procedure

After receiving ethical approval, 1000 people with Ménière's disease (all members of a national self-help group, the Ménière's Society) were recruited (measured as part of a larger study (Dibb & Yardley, 2006b) so assessments were taken 10 months apart) and sent a questionnaire pack at baseline and ten month follow-up. Three hundred and seventy people responded at Time1 and 301 at Time 2.

Measures

Demographic information was measured in order to control for any confounding variables, they included '*age*,' '*gender*,' *'length of membership of the self-help group,'* '*time since diagnosis,'* and '*time since first symptom*.' To determine the effects of the disease on perceiving change disease severity was measured using four separate scales to assess the four key symptoms of Ménière's disease (as there is no single Ménière's disease severity scale). The experience of *'tinnitus'* and a feeling of '*fullness in the ear'* were measured using Stahle's (1978) staging procedure for Ménière's disease. Both are single items that measure the frequency and severity of the symptom, both with a range of 0 - 6. '*Vertigo'* severity was measured using the vertigo subscale of the Vertigo Symptom Scale (VSS) (Yardley, Masson, Verschuur, Haacke, & Luxon, 1992) which consists of 19 items, scored on a 5-point Likert scale, that measure the frequency and number of vertigo-related symptoms. It is validated and has a high alpha of .94. '*Hearing loss'* was measured using a subscale of the hearing disability and handicap scale used in an MRC National Study of Hearing which has been shown to be reliable and has

been validated against objective data, and had an alpha of .83 in this study (Lutman, Brown, & Coles, 1987). It consists of five items, with a total score range of 0 – 30.

'Self-esteem' was measured with Rosenberg's (1965) scale, consisting of ten items measured on a four-point Likert scale. It is a widely used scale with a high alpha of .90 in this study. '*Optimism'* was measured using the revised Life-Orientation Test (Carver & Scheier, 1990) for which the alpha was .86, and '*perceived control'* was measured with the 'control over illness' subscale of the Illness Representation Questionnaire – Revised (Moss-Morris et al., 2001) which had an alpha of .87, both consisting of six items scored on a 5-point Likert scale.

The effect of comparing with other people with Ménière's disease was measured using the Identification/Contrast scale (Van der Zee, Buunk, Sanderman, Botke, & Van den Bergh, 2000). This is a twelve item scale consisting of four subscales; '*positive upward comparison*' (feeling hopeful that you too could be as well-off as the person with whom you are comparing), '*negative upward comparison*' (feeling depressed that you are not as well-off as the person with whom you are comparing), '*positive downward comparison*' (feeling lucky that you are not doing as badly as the person with whom you are comparing), '*negative downward comparison*' (feeling depressed and anxious that you may become the same as the worse-off person with whom you are comparing), all rated on a 5-point Likert scale (the alphas for the subscales ranged between .84 and .95). A subscale (four items scored on a 5-point Likert scale) measuring '*social comparison for information*' (comparing with others to gain information but without experiencing affect) (Dibb & Yardley, 2006a) was included with this measure (alpha = .74). A single item (measured on a three-point Likert scale) which measured the degree to which the '*letters*

to the editor' were read was also included. These letters contained stories about the experiences of living with MD and was a means by which the participants socially compared (Dibb & Yardley, 2006a).

Finally, perceived positive change was measured using the Posttraumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996). This 21 item questionnaire is widely used and measures change on 5 domains: '*appreciation of life'* (the individual shows more appreciation of being alive), '*relating to others'* (the individual feels they can relate to others better than before), '*personal strength'* (the individual feels they have grown stronger as a person), the individual perceives '*new possibilities'* to be available to them which they had not seen before, '*spiritual growth'* (the individual is aware that they have become more spiritual). All subscales are scored 0 – 5, where a high score indicates more perceived change. Alpha scores for the subscales ranged from .79 to .88 in this study.

Analysis

All scales were checked for normality and two subscales of the PTGI ('*spiritual growth*' and '*new possibilities*') and '*vertigo'* were transformed using the square root transformation to eliminate a skew in the distribution. Hierarchical multiple regression analyses were conducted at baseline to assess the cross-sectional data, and, again, at follow-up to assess Time 1 predictors of positive change at Time 2. Time 1 PTGI was entered in Block 1 (for the longitudinal analysis only). Demographic variables, disease severity variables and psychological variables were entered in the next Block, while all the social comparison variables were entered in the final Block. Stepwise variable selection was used within each block.

Results

Sample characteristics

The sample consisted of 182 (60.7%) women and 118 (39.3%) men (one participant declined to identify their gender). The average age was 58.1 years (SD = 12.25, range = 21- 86). The participants had been members of the self-help group for an average of 4.98 years (SD = 3.94), with a mean of 13.04 years (SD = 10.22) since their first symptom and 9.35 years (SD = 8.01) since they were diagnosed with MD. Descriptive statistics for disease severity, self-esteem, optimism, perceived control and social comparison are presented in Table 1.

[Table 1 about here]

Positive change perceived by people with Ménière's disease

Results showed that this group perceived positive change since the onset of their illness. Table 2 shows that at Time 1 this group were perceiving the most positive change on the domain of '*appreciation of life*' followed by '*relating to others,*' '*personal strength,'* and '*new possibilities.*' The least change was perceived to have occurred with regard to '*spiritual growth.*' This pattern was replicated at Time 2 with four domains showing an increase from Time 1 to Time 2 and '*relating to others*' showing a decrease from Time 1 to Time 2. In all five cases these differences reached significance.

[Table 2 about here]

Predictors of perceived positive change

Table 3 shows the cross-sectional regression equations calculated for each of the five PTGI subscales.

The demographic variable '*age'* was positively associated with *'spiritual growth,'*

showing older age to be associated with perceiving more spiritual growth. '*Time since diagnosis'* predicted *'personal strength.'* Disease status, in particular '*vertigo,*' was associated with all five of the posttraumatic growth variables. Psychological variables significant at Time 1 included '*perceived control*' as a primary predictor for *'relating to others,'* '*personal strength*,' and '*new possibilities*,' and '*optimism*' predicted *'appreciation of life.*'

Cross-sectionally, social comparison was associated with positive change; a positive relationship existed between '*positive upward comparison*' on all five of the PTGI subscales. The final model for *'personal strength'* explained 10.8% of the variance ($F(4,305) = 9.25$, $p = .000$), and the final model for *'spirituality'* accounted for 45% of the variance ($F(3, 103) = 8.71$, $p = .000$). A further social comparison variable, '*negative upward comparison,*' was also positively associated with three PTGI subscales: *'appreciation of life'* (the final model explained 13.6% of the variance ($F(4,305) = 11.98$, $p = .000$), '*relating to others'* (the final model explained 14.2% of the variance ($F(4,305) = 12.67$, $p = .000$), and *'new possibilities'* (the total variance accounted for was 13.7% ($F(4,305) = 12.11$, $p = .000$).

[Table 3 about here]

The longitudinal regression equations (Table 4) show the three PTGI variables which had primary predictors of perceiving positive change, there were no long-term predictors for *'spiritual growth'* and *'relating to others'*. Increased *'Fullness of the ear'* was associated with a greater perception of positive change leading to a greater *'appreciation of life'* (the final model explaining 42.2% of the variance ($F(2, 253) = 92.46$, $p = .000$), a greater perception of *'personal strength,'* and the perception of *'new*

possibilities.' 'New possibilities' was also predicted by *'time since first symptom,'* the final model explaining 42.6% of the variance (F(3, 252) = 62.22, p = .000). *'Perceived control'* and social comparison had a positive effect on *'personal strength.' 'Social comparison for information,'* where people compared with each other to gain information, was associated with a greater perception of change in one's own personal strength. Another social comparison variable, *'downward positive comparison,'* was also influencing *'personal strength.'* This relationship was negative where positive affect after downward comparison was associated with reduced perception of personal growth over time. Forty nine percent (49.3%) of the variance was explained by the final model (F(5, 249) = 48.50, p = .000) for *'personal strength.'*

[Table 4 about here]

Discussion

This study aimed to answer two questions about perceived positive change after the onset of an illness; to what extent do people with non-fatal illnesses, such as Ménière's disease, perceive positive change, and what role social comparison plays in perceiving change.

The results show that this group perceived positive change over the duration of this study and that there were differences in the degree of change perceived over time. These changes were apparent from the perceived differences between Time 1 and Time 2, Looking at where change occurred, people with Ménière's disease found they appreciated life more, as do people in two breast cancer studies (Cordova et al., 2001; Sears et al., 2003), and two 'healthy' populations (Cordova et al., 2001; Joseph, Linley, & Harris, 2005b), however, this is different to the change perceived in another study with both

cancer (Andrykowski et al., 1993; Petrie et al., 1999) and MI (Petrie et al., 1999). In another cancer sample, the second most amount of change was in satisfaction with religion (Andrykowski et al., 1996), the Ménière's sample in this study found the least amount of change in this domain.

Regarding the extent of change perceived, the Ménière's sample reported less positive change than students, with and without trauma, all who were asked to report perceived change within the last year (Tedeschi & Calhoun, 1996). The Ménière's sample also reported less perceived change when compared with people who had undergone bone marrow transplant, who rated positive change since their cancer and its treatment (Widows, Jacobsen, Booth-Jones, & Fields, 2005), and when compared with people with breast cancer (Cordova et al., 2001; Sears et al., 2003).

One reason for this may be that as Ménière's disease is chronic and progressive (Yardley, 1994), the crisis is never really over, which may delay the adjustment period thereby delaying the perception of positive change. People managing this illness may be unable to find positive change when faced with unpleasant symptoms, the experience of the sometimes unbearable symptoms of Ménière's disease may hinder the perception of change in some way. Significantly more change was also perceived at the end of the study than at the beginning for four domains indicating that they continued to perceive change whilst managing their unpredictable illness. As we perceive more change during times of uncertainty and when stress is high (Tedeschi & Calhoun, 1996), these results may indicate that the stressful event has not passed but is ongoing for this group.

Disease severity did influence the perception of positive change. Both vertigo and a feeling of fullness in the ear were having a positive effect on the degree of positive

change perceived, vertigo at the cross-sectional time point and fullness in the ear at follow-up, showing more change was perceived when the illness was active. In particular, disease symptoms were important to perceiving more appreciation of life, awareness of one's own personal strength, and being aware of new possibilities available to them.

Psychological resilience in the way of optimism had the expected strong effect on one of the perceived change variables which supports Tedeschi and Calhoun's (1996) study with students, however, self-esteem did not emerge as important at either time point. The perception of control over the illness, emerged as important at both time points, showing some support for Schulz and Mohammed's (2004) study with cancer patients where a related construct, self-efficacy (belief in one's own abilities), was found to be moderately associated with benefit finding. Regaining control after a crisis has been identified by the Cognitive Adaptation Theory (Taylor, 1983) as important to adjustment and in this study the perception of control was influencing feelings of personal strength over time; regaining control after a crisis may include proactive coping and an engagement with the environment which may explain why at the cross-sectional analysis the perception of control was also influencing the perception of new possibilities.

In answer to the question of whether social comparison influenced perceived positive change, it would appear that there exists a strong relationship cross-sectionally where socially comparing with others with MD was associated with increased positive change. Feeling hopeful after comparing with better-off others helped the perception of positive change in one's own life on all five domains at the cross-sectional analysis. Negatively interpreted social comparison also had a positive effect on the perception of

change; this may be due to the tendency to perceive more change during times of stress and uncertainty (Tedeschi & Calhoun, 1996), a state perhaps brought about by the negative interpretation. As we know that social comparison can result in negative affect (Buunk et al., 1999), the negative interpretation of the comparison may heighten the perception of stress and uncertainty, hence the perception of more positive change. Longitudinally, comparing with others in order to gain information was a primary predictor of perceiving changes in personal strength. This supports Schulz and Mohammed's (2004) study of cancer patients for whom social comparison positively influenced benefit finding. Positive affect after downward comparison was also influencing the perception of personal strength, however, this was a negative relationship. Those who felt lucky after comparing with worse-off others at Time 1 perceived less change in personal strength at follow-up. This may be because those who felt lucky eventually identified with the person who was worse-off (Buunk & Ybema, 1997) and, as this identification was in a downward direction, that is, the target had the illness more severely and/or was not coping as well, this may reduce the perception of change in personal strength.

The change that has occurred in this group shows a positive outlook, a need to interpret and give meaning to their new and unsettled situation. That people who have experienced adverse circumstances can perceive positive aspects of their situation supports adjustment theorists who say that we tend to interpret the world positively (Schwartz & Sprangers, 2000), give meaning (Taylor, 1983) and adjust to our situation (Sprangers & Schwartz, 1999).

This study is not without limitations. It was not possible to determine whether the

change measured in this study was solely due to the illness or whether it may have occurred naturally over time regardless of the illness. In addition, no control (non-illness) group was included in the study. The combination of these two points means it is not possible to determine whether the change measured in this study was a direct result of the illness. A study which compared cancer and a 'healthy' group and found both groups to perceive positive change (Andrykowski et al., 1993), although, this was a cross-sectional study so there was no record of perceived change over time. Furthermore, the lack of another illness group, specifically a fatal illness group, means it is not possible to compare the change perceived by those facing different challenges. Limitations of this study also include the self-selected nature of the sample, which means that the results are not representative of all those with MD and as contact between members of the self-help group was minimal no generalisations can be made to other self-help groups. Another point to consider is that, although self-esteem and optimism were measured it may have been beneficial to include a measure of mood.

Conclusion

People with non-fatal illnesses such as Ménière's disease do perceive positive change on similar domains as people with other types of illnesses. However, this group reported less change than has been reported in other groups. Perceived change increased over time which may be due to the experience of the disease as is suggested by the illness characteristics which were contributing to the perception of positive change at both time points. Social comparison was associated with the perception of more change both cross-sectionally and longitudinally, specifically with personal strength over time, showing social comparison to be important for more personal awareness than social relationships

and spirituality.

Table 1: Means (standard deviations) for predictor variables

Variable	Mean (SD)
Disease Severity	
-Vertigo	4.15 (2.04)
-Hearing Loss	13.38 (7.57)
-Tinnitus	3.82 (1.48)
-Fullness in the ear	3.18 (1.66)
Self-esteem	29.48 (5.03)
Optimism	13.79 (4.31)
Perceived control	18.69 (4.69)
Social comparison	
-Positive upward comparison	11.05 (2.14)
-Positive downward comparison	11.44 (2.23)
-Negative upward comparison	8.09 (2.53)
-Negative downward comparison	8.75 (2.82)
-Social comparison for information	15.15 (2.47)

Table 2: PTGI subscale means and standard deviations (untransformed data)

Subscale	Time 1 Mean (SD)	Time 2 Mean (SD)
Appreciation of Life	2.40 (1.44)	2.59***(1.40)
Relating to Others	2.01 (1.26)	1.92***(1.29)
Personal Strength	1.68 (1.29)	1.81***(1.31)
New Possibilities	1.23 (1.15)	1.43***(1.21)
Spiritual Growth	0.73 (1.25)	0.89**(1.34)

*** $p < .001$ and **$p < .01$ significantly different from Time 1

Table 3: Regression statistics for Time 1 (T1) predictors of perceived positive change

PTGI (T1) Subscale	Predictors	Standardised Beta	ΔR^2
Appreciation of Life T1			
Step 1	-Vertigo	0.19**	0.04**
Step 2	-Vertigo	0.23***	0.02**
	-Optimism	0.15**	
Step 3	-Vertigo	0.24***	0.40***
	-Optimism	0.10	
	- Positive upward comparison	0.21***	
Step 4	-Vertigo	0.21***	0.04***
	- Optimism	0.15*	
	-Positive upward comparison	0.23***	
	-Negative upward comparison	0.21***	
Relating to Others T1			
Step 1	-Vertigo	0.20***	0.04***
Step 2	-Vertigo	0.23***	0.02*
	-Perceived Control	0.13*	
Step 3	-Vertigo	0.24***	0.07***
	-Perceived Control	0.07	
	-Positive upward comparison	0.27***	
Step 4	-Vertigo	0.22***	0.02**

	-Perceived Control	0.11	
	-Positive upward comparison	0.28***	
	-Negative upward comparison	0.15**	
Personal Strength T1			
Step 1	-Perceived Control	0.20***	0.04***
Step 2	-Perceived Control	0.23***	0.02*
	-Vertigo	0.13*	
Step 3	-Perceived Control	0.24***	0.01*
	-Vertigo	0.15**	
	-Time since diagnosis	0.12*	
Step 4	-Perceived control	0.19***	0.04***
	-Vertigo	0.16**	
	-Time since diagnosis	0.13*	
	-Positive upward comparison	0.20***	
New Possibilities T1			
Step 1	-Perceived Control	0.22***	0.05***
Step 2	-Perceived Control	0.25***	0.05***
	-Vertigo	0.22***	
Step 3	-Perceived Control	0.21***	0.03***
	-Vertigo	0.23***	
	-Positive upward comparison	0.17**	
Step 4	-Perceived control	0.25***	0.02***
	-Vertigo	0.21***	

	-Positive upward comparison	0.18***	
	-Negative upward comparison	0.14*	
Spiritual Growth T1			
Step 1	-Age	0.31***	0.10***
Step 2	-Age	0.35***	0.04*
	-Vertigo	0.20*	
Step 3	-Age	0.33***	0.07**
	- Vertigo	0.22*	
	-Positive upward comparison	0.26**	

Note: *p<.05; **p<.01; ***p<.001.

Table 4: Regression statistics showing Time 1 (T1) predictors for perceived positive change at Time 2 (T2)

PTGI (T2) Subscale	Time 1 Predictors	Standardised Beta	ΔR^2
Appreciation of Life T2			
Step 1	-Appreciation of life T1	0.61***	0.38***
Step 2	-Appreciation of life T1	0.58***	0.05***
	-Fullness in the ear	0.21***	
Personal Strength T2			
Step 1	-Personal Strength T1	0.67***	0.44***
Step 2	-Personal Strength T1	0.64***	0.01*
	-Perceived Control	0.11*	
Step 3	-Personal Strength T1	0.63***	0.02*
	-Perceived Control	0.14**	
	-Fullness in the ear	0.13**	
Step 4	-Personal Strength T1	0.62***	0.01*
	-Perceived Control	0.14**	
	-Fullness in the ear	0.13**	
	-Social comparison for information	0.12*	
Step 5	-Personal strength T1	0.62***	0.01*
	-Perceived control	0.15**	
	-Fullness in the ear	0.12**	
	-Social comparison for information	0.14**	

	-Positive downward comparison	-0.10*	
New Possibilities T2			
Step 1	-New Possibilities T1	0.63***	0.40***
Step 2	-New Possibilities T1	0.62***	0.01*
	-Fullness in the ear	0.12*	
Step 3	-New Possibilities T1	0.62***	0.01*
	-Fullness in the ear	0.11*	
	-Time since first symptom	-0.10*	

Note: *p<.05; **p<.01; ***p<.001.

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