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LETTER TO JMG

The use of audiotapes in consultations with women from high risk breast cancer families: a randomised trial

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Recall of medical information is notoriously poor. In methodologically rigorous studies of cancer patients' recall, our group found that patients recall about 25% of all the facts presented and just under half of the five to six facts nominated as particularly crucial by the doctor.¹ Studies on genetic counselling, on the other hand, generally show that genetic counselling appears to be effective in increasing knowledge of the mode of inheritance.² However, risk figures are generally poorly recalled, suggesting that there may be potential for improving the effectiveness of information giving.³

Several sources of poor patient understanding have been identified, including poor communication techniques and lack of time in the consultation,⁴ patient anxiety,^{4,5} and patient denial.⁶ Thus, interventions designed to improve patient understanding need to compensate for anxiety and time constraints by providing a mechanism for flexible information review, to be sensitive to patients' varying information needs, and to be economical in time and costs. An audiotape of the consultation appears to satisfy these criteria.

A recent review of published reports on audiotaping in the oncology consultation concluded that providing audiotapes to patients is beneficial.⁷ It can allow for review of the information presented, serve as a stimulus for future discussion, facilitate family communication about the illness, and can be a clinically effective intervention as it is inexpensive and easily incorporated into clinical practice.

Studies have examined the effect of audiotapes on patients' psychological well being, information recall, and satisfaction. Results for psychological well being have been conflicting. Studies have ranged from showing a significant reduction in anxiety,⁸ to no reduction,¹ to showing a detrimental effect.⁹ Differences in findings may be partly explained by the heterogeneity of samples studied. For example, studies included patients with advanced carcinomas,⁸ both newly and previously diagnosed patients,⁹ and patients with both local and metastatic disease.¹

Studies examining the effect of providing patients with audiotapes on information recall have also produced mixed results. Tattersall *et al*¹⁰ compared the effects of an audiotape of the consultation with an individualised summary letter. While patients preferred audiotapes to letters, patient recall was not differentially affected.¹⁰ A randomised controlled trial conducted by Dunn *et al*,¹ comparing a consultation audiotape, to a general cancer information tape, or no tape, showed no difference in recall between patients receiving the consultation tape and those receiving no tape, although patients in the general tape group recalled significantly less.¹ However, several studies^{8,9} found the tape group able to recall significantly more information.

In their review, McClement *et al*⁷ concluded that satisfaction bias among patients, the validity of instruments measuring satisfaction, and the social and cultural context that impacts on patients' expectations of their physicians combine to confound studies on the effectiveness of audiotapes on patient satisfaction.

Only one study to date has assessed the efficacy of audiotape provision in women attending a familial cancer clinic.¹¹ Watson *et al*¹¹ randomly assigned 115 women with a family history of breast cancer to receive or not to receive an audiotape of their genetic counselling consultation. The results showed that provision of the audiotape significantly reduced cancer worries but did not influence the accuracy of perceived risk.¹¹

As taping can only reflect the style of counselling initially provided, and as this is likely to vary across cultures and between individual counsellors, it is important to replicate this study in another country with a different population. In addition, Watson *et al*¹¹ included only unaffected women in their

Key points

- In this randomised controlled trial in women from high risk breast cancer families, a strategy to assist women to understand and cope better with their situation was assessed. A total of 109 unaffected and 84 affected women who attended any one of 10 familial cancer clinics were randomly assigned to receive or not to receive an audiotape of their initial genetic counselling consultation. They completed self-report questionnaires two weeks before and three weeks after that initial consultation.
- Fifty one percent of the women randomised to receive the tape listened to it at least once. Unaffected women randomised to receive an audiotape were significantly less likely to be accurate in their risk perception at follow up ($p=0.05$) than unaffected women randomised not to receive the audiotape. However, a risk figure or category was given in only 52% of the audiotaped consultations with unaffected women. Only 39% of affected women were given a risk figure of the chances of getting a second breast cancer.
- The tape had no effect on risk accuracy when the analysis included only women who were inaccurate at baseline. There was a trend for women who received an audiotape to have improved scores on depression at follow up ($p=0.06$), but no association was found with other patient outcomes. When the analysis was repeated including in the intervention arm only women who had listened to the tape, those receiving the intervention had a significantly larger reduction in anxiety ($p=0.02$) and a greater reduction in depression ($p=0.01$).
- The provision of an audiotape and listening to it after the genetic counselling session had a beneficial effect in reducing women's anxiety and depression but did not improve their ability to process information concerning their breast cancer risk.

sample, while a large proportion of those attending family cancer clinics have previously been diagnosed with cancer. Furthermore, no previous audiotaping study has explored whether coping style influences how beneficial a tape is perceived. The current study aimed to assess the provision of an audiotape of the genetic counselling consultation in a large sample of both unaffected and affected women attending a familial cancer clinic using validated measures of psychological outcome. We hypothesised that women in the intervention group would (1) be more accurate in their risk perception, (2) be more satisfied overall and more satisfied with the information they received, (3) be less anxious and depressed and have less intrusive or avoidant thoughts about breast cancer, (4) have higher knowledge, and (5) have more of their expectations met. In addition, (6) it was hypothesised that women who were "monitors" and received a copy of the audiotape would be more satisfied, have increased knowledge, and more accurate risk perception than "blunters" who received the audiotape.

METHODS

Participants

Consecutive women attending any one of 10 familial cancer clinics in four Australian states (New South Wales, Victoria, South Australia, and Queensland) were invited to participate in the study. Quota sampling was used to ensure that the sample consisted of equal numbers of affected and unaffected women. Women were considered ineligible for participation if they were unable to give informed consent, that is, if they were younger than 18 years or showed evidence of a severe mental illness. Women with limited literacy in English were also excluded because data collection was based on self-administered questionnaire.

Sample size

A sample size of 160 for the randomised trial was considered sufficient to detect group mean differences of 0.4 of a standard deviation (that is small to medium effect size) on the psychological and patient satisfaction measures with a power of 80%. When comparing proportions, it would be possible to detect differences of approximately 20% or more between intervention and control groups at 0.05 level of significance with 80% power.

Procedure

Staff at each of the participating familial cancer clinics invited women to participate in the study when they telephoned to make their appointment. Women were subsequently telephoned by the central research staff and given further information about the study. Questionnaires, consent forms, and reply paid envelopes were mailed to consenting women by the coordinating research centre approximately two weeks before their clinic appointment. Women were asked to return the completed baseline questionnaire and the consent form before attending the familial cancer clinic. A follow up questionnaire was mailed three weeks after counselling.

The consultations were audiotaped and women were randomised immediately after their consultations to receive or not to receive the audiotape. Randomisation allocation was predetermined by the coordination centre using sealed envelopes to ensure the familial cancer clinic staff would be blind to the randomisation. Randomisation was done within clinics to help balance potential provider variability across intervention and control groups. Ethical approval from 10 different ethics committees responsible for each of the participating clinics was sought and obtained before data collection.

Measures

Demographic characteristics

Age, educational level, occupation, marital status, medical or allied health training, number of biological children, and

number of first and second degree relatives who had developed breast or ovarian cancer were assessed at baseline.

Expectations

Women were asked to (1) indicate on a five point scale ranging from "not at all important" to "very important" their response to seven possible reasons for attending a genetic clinic and (2) similarly rate nine possible information topics that they might want covered at their first appointment. This scale was developed specifically for this study and included items suggested by expert opinion, previous publications, and structured telephone interviews with at risk women. After the consultation, women were asked to rate on a five point scale ranging from "not at all" to "a lot" the degree to which they perceived they had been informed about particular information items and whether other expectations were met in a "Yes/No" format. A total score for the number of expectations met was calculated by summing those items for which a "yes" was given and those indicating that at least some information had been given.

Breast Cancer Knowledge Scale

This eight item true-false measure assesses knowledge about breast cancer genetics, yielding a total score of 0-8. The scale is a revised version of a scale originally developed by Lerman *et al*¹² and has previously been found to have moderate internal consistency with Cronbach's alpha of 0.59.

Psychological measures

Impact of Events Scale

This 15 item validated scale measures intrusion and avoidance responses in relation to a specific stressor.¹³ In the current study, the particular stressor was concern about being at risk of developing breast cancer for unaffected women and concern about developing a second cancer for affected women. In a previous validation study of women with a family history of breast cancer, the intrusion and the avoidance subscales have been found to be highly consistent with Cronbach's coefficient alphas of 0.84 and 0.91, respectively, and a test-retest reliability of $r=0.80$.¹⁴

Hospital Anxiety and Depression Scale

This 14 item scale has been found to be valid and reliable in detecting depression and anxiety in hospital medical out-patient clinics. It consists of two subscales of seven items assessing the level of anxiety and depression.¹⁵ Scores range from 0 to 42. Questions have four response options, yielding scores ranging from 0-21 for each subscale. A score of higher than 10 on either subscale is an indication of clinical anxiety or depression, and scores from 8-10 on either subscale are indicative of "borderline" anxiety and depression.

Monitoring-Blunting Style Scale

This eight item, validated scale measures individual differences in coping styles in threatening situations. The scale asks participants to imagine four stress provoking scenarios of a largely uncontrollable nature. Each scenario is followed by eight statements representing different attention strategies for dealing with the event, that is "monitoring" (sensitising, vigilance) versus "blunting" (avoidance). A final score is obtained by subtracting the total blunters score from the total monitors score as blunting is seen to be the opposite of monitoring.

Risk perception

Women were asked to indicate their perceived approximate lifetime risk of breast cancer (that is, to age 80) by choosing between seven response options ranging from 1% to 100%. A decision was made to code women's risk accuracy within categories, as risk estimates vary widely and often only a risk

category (for example, high, medium, or low) is given in the genetic counselling session. Participants' numerical estimate of life time risk was converted to a category according to the figures given in the Australian National Health and Medical Research Council Guidelines, for example, a potentially high risk category 25% to 80%, a medium risk category 12% to 25%, and a low risk category 9% to 12%.¹⁶

Objective risk was determined by the figure given by the clinical geneticist/genetic counsellor in the consultation or the post-consultation summary letter. Participants' responses were deemed accurate if their risk estimate fitted within the risk category given by the clinical geneticist or genetic counsellor. If women were inaccurate it was determined whether they had underestimated or overestimated their risk of breast cancer.

Satisfaction with the genetic counselling session

Satisfaction was measured using a modified version of the 12 item short form of the 36 item "Satisfaction with Genetic Counselling Scale", developed by Shiloh *et al.*¹⁷ This shorter version of the scale is highly correlated with the full scale ($r=0.90$) and has good reliability (Cronbach $\alpha=0.78$). Items cover the following five aspects of satisfaction: (1) satisfaction with affective elements of the consultation, for example, did he/she listen to you, show enough dedication, and understand what was bothering you; (2) satisfaction with the instrumental elements, for example, did the geneticist explain your situation clearly, did he/she reassure you, and can the counselling you received help you cope better; (3) satisfaction with the procedural elements, for example, did the waiting time for an appointment bother you; (4) satisfaction with the information content; and (5) women's overall satisfaction. Women also responded to a series of open ended questions about what they liked about the consultation.

Satisfaction with audiotape

Women randomised to receive the audiotape answered seven additional questions specifically addressing satisfaction with the tape. These questions were based on a previous study and had been validated in a cancer population.¹ Women were asked how often they listened to the audiotape, if they gave the tape to anyone else to listen to, and, if so, to whom. They were then asked to indicate on a five point Likert Scale how useful the tape was in (1) increasing their understanding of cancer genetics; (2) increasing their understanding of their personal risk; (3) decreasing their anxiety about breast cancer; (4) assisting in family communication about the family history of breast cancer; (5) helping the family understand breast cancer genetics; (6) helping to reach a decision about how to manage their genetic risk; and (7) helping to reach a decision about having a genetic test. Finally, women were asked in an open ended question to list other ways in which the audiotape was helpful or unhelpful.

Timing of assessment

All measures were included at baseline and follow up, except demographics, expectations, and coping style (measured only at baseline) and satisfaction (measured only at follow up).

Statistical analyses

Descriptive statistics were used to describe the sample in terms of sociodemographic, family history, and psychological variables. Exploration of possible bias in the randomised groups, and in those who were and were not lost to follow up, was undertaken by comparing demographic, family history, and psychological characteristics across groups using Mann-Whitney U tests, *t* tests, and chi-squares as appropriate. Change scores were calculated for psychological measures and knowledge by subtracting follow up from baseline scores and these were used in subsequent analyses. Univariate analyses

(Mann-Whitney U tests, *t* tests, and chi-squares as appropriate) were used on an "intention to treat" basis to compare the groups on outcomes such as accuracy of risk perception, satisfaction, and change in knowledge and psychological outcomes. Intention to treat analyses, the gold standard in randomised trials, minimise bias introduced by differential loss to follow up between groups and different reasons for dropping out between groups. The possibility of an interaction between coping style and tape allocation was explored by linear and logistic regression including an interaction term.

RESULTS

Participants

Of the 244 women who met eligibility criteria, 195 women were randomised to evaluate the impact of an audiotape. One hundred and sixty women completed both the baseline and follow up questionnaire (82% retention rate, fig 1). Eighty-two of these women received the tape and 78 did not. Table 1 shows the comparison of sociodemographic, family history, and psychological variables between intervention and control groups at baseline.

There were no important differences (and no statistically significant differences between the groups) indicating that the randomisation had successfully equalised potential confounders between the groups.

Analysis of participation bias

We next compared those women who completed both the baseline and follow up questionnaires ($n=160$) and those lost to follow up ($n=20$). The groups were similar in all respects. Similar numbers of women were lost to follow up in the intervention ($n=13$) and control ($n=16$) groups.

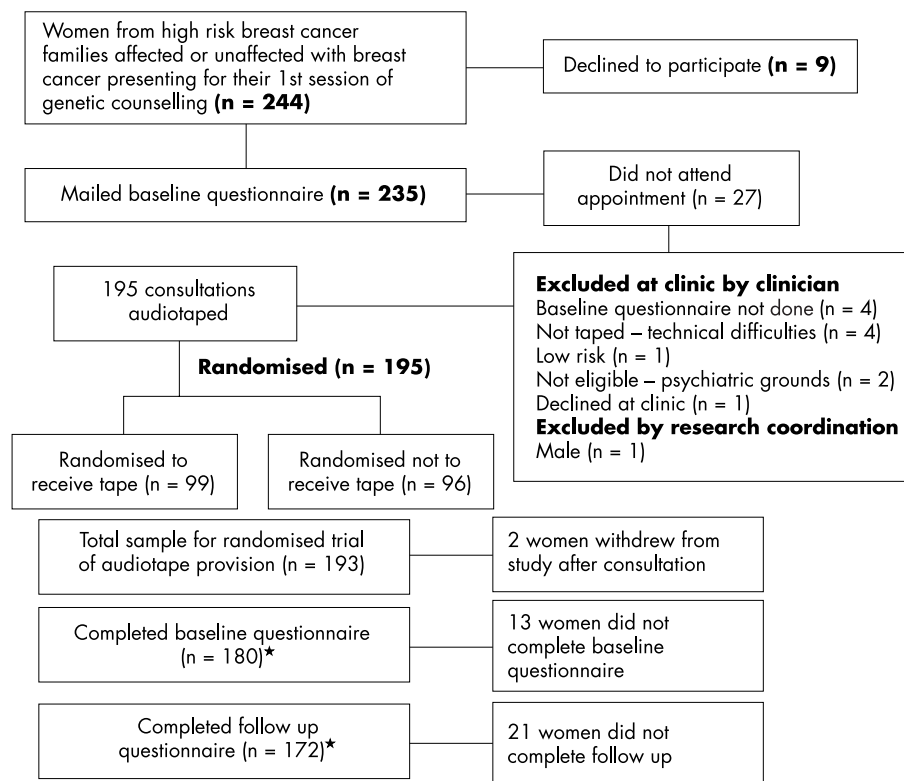
Use of the audiotape

Of the 98 women randomised to receive the audiotape of their consultation, 49% did not listen to it. Thirty-one percent reported that they listened to it once. Sixteen percent reported listening to it twice, 3% three times, and one woman reported that she had listened to it more than three times. Twenty women (20%) reported that they shared the audiotape of the consultation with another family member. Listening to the audiotape was not associated with coping style (monitoring or blunting). Women who chose not to listen to the tape primarily reported they had no use for the tape at present but foresaw that it would be of great benefit in the future either to themselves or to younger generations. Only one woman reported that she did not want to relive "the agony and emotional heartache" of the consultation.

Univariate analyses showed that affected women ($\chi^2=4.65$, $p=0.03$) and women with increased generalised anxiety at baseline ($Z=-2.51$, $p=0.01$) were significantly more likely to listen to the audiotape. There was a trend for women who were more depressed ($Z=-1.889$, $p=0.06$) and had lower breast cancer genetics knowledge ($Z=-1.819$, $p=0.07$) to listen to the audiotape.

The impact of receiving the audiotape on women's risk perception

Table 2 shows the differences on outcome variables for the intervention and control groups. We hypothesised that the intervention group would have increased accuracy. We were only able to analyse data for unaffected women as affected women were not routinely given a risk figure in either their consultation (39%) or post clinic letter (25%) for the chances of a second breast cancer occurring. Risk assessment figures or categories were not given to all unaffected women at the time of the consultation either. However, most clinic letters did contain a risk estimate, and were mailed out before completion of the follow up questionnaires; only five unaffected women who received a tape did not receive a risk



*Some women who completed the follow up questionnaire had not completed the baseline questionnaire.

Figure 1 Overview of recruitment.

estimate in either the consultation or the letter. Nevertheless, the results of this analysis must be viewed with caution as the final number of unaffected women who received a risk estimate and an audiotape for which outcome data were available ($n=42$) may have been insufficient to detect a small effect size.

Contrary to the hypothesis, unaffected women who were randomised to receive an audiotape after their consultation ($n=48$) were significantly less likely to be accurate in their risk perception at follow up ($\chi^2=3.89$, $p=0.05$), compared to those who did not receive an audiotape ($n=44$). Fifty-six percent of unaffected women who received the tape were accurate at follow up compared to 76% who did not receive the tape. However, when only those women who were inaccurate at baseline were included in the analysis ($n=40$), the tape had no effect on the accuracy of their risk perception at follow up ($\chi^2=1.57$, $p=0.21$).

As only 52% of consultations with unaffected women included a risk figure or category, while almost all follow up letters included an estimate of risk, we analysed the impact of reading the follow up letter on risk perception. Univariate analysis showed a trend towards significance for those women who received a summary letter of their consultation, and said they read it, to have more accurate risk perception at follow up (56% versus 37%) ($\chi^2=3.166$, $p=0.07$).

Impact of receipt of audiotape on other outcome variables

Compared to women in the control group, women who were randomised to receive a copy of the audiotape after the consultation were no more satisfied with the consultation as a whole ($Z=-0.82$, $p=0.41$), nor with the information they received ($t_{152}=0.353$, $p=0.72$). They also did not have a greater sense of their expectations being met ($t_{138}=0.272$, $p=0.78$).

Table 1 Comparison of sociodemographic, family history, and psychological variables between intervention and control groups at baseline

	Receive tape (n=98)	Not receive tape (n=95)
Age	Mean 45 y	Mean 44 y
Disease status		
Unaffected	58%	55%
Affected	42%	45%
Family history		
Breast cancer only	75%	75%
Breast/ovarian cancer	24%	25%
Allied health training		
No	69%	68%
Yes	31%	31%
Education		
Below HSC	47%	50%
Above HSC	53%	49%
Occupation		
Non-professional	47%	40%
Professional	53%	60%
Total relatives diagnosed or died	Median 2	Median 2
Psychological measures		
Baseline anxiety score	Median 6.0	Median 7.0
Baseline depression score	Median 4.0	Median 5.0
Baseline intrusion	Median 12.0	Median 11.0
Baseline avoidance	Median 14.0	Median 14.0
Baseline knowledge	Median 6.0	Median 5.0
Miller's scale		
Monitors	55%	57%
Blunters	45%	43%
Risk perception		
Correct	53%	50%
Incorrect	46%	50%

Table 2 Mean change scores for outcome variables for intervention and control groups

	Intervention group (n=82)	Control group (n=78)
Risk estimate		
Correct	56%	76%
Incorrect	44%	24%
Overall satisfaction (median)	90	90
Satisfaction with information (mean)	0.8333	0.8537
Expectations met (mean)*	4.0154	4.0933
Change in knowledge (mean)	1.2568	1.5625
Change in anxiety (mean)	-0.7656	-0.3382
Change in depression (mean)	-2.1094	-1.2794
Change in intrusion (mean)	-0.9643	-1.0909
Change in avoidance (mean)	-1.2857	-1.8182

*Possible range in expectations met 0–12.

Similarly, receiving an audiotape did not increase women's knowledge of breast cancer genetics ($t_{1,92}=1.257$, $p=0.21$).

The majority of unaffected and affected women had normal scores on the Impact of Events Scale (intrusion and avoidance responses) before counselling. A small subgroup of unaffected (10%) and affected (19%) women showed significant stress responses. Almost one fifth of unaffected and affected women attending for genetic counselling were clinically anxious and 18% of unaffected women and 28% of affected women were "borderline" clinically anxious. Five percent (5%) of both unaffected and affected women were clinically depressed and 8% of unaffected and 16% of affected women were "borderline" clinically depressed. These results are not dissimilar to others reported for affected and unaffected women.^{18, 19} Compared to the normal population, levels of psychological morbidity were not notably high for unaffected women, but anxiety was certainly higher in affected women and if probable cases are included, rates of clinically significant depression were also higher.

Change in general anxiety ($t_{1,30}=0.812$, $p=0.420$) and changed scores on the Impact of Events Scale (avoidance ($t_{1,20}=-0.680$, $p=0.49$) and intrusion ($t_{1,20}=-0.152$, $p=0.88$) were not affected by audiotape randomisation. However, there was a trend for women who received the audiotape to have significantly improved depression scores at follow up ($t_{1,30}=1.866$, $p=0.06$).

These analyses were repeated, including in the intervention group only those who reported actually listening to the tape ($n=45$) and the whole control group ($n=79$). It is acknowledged that this may have introduced bias, but it was felt to be useful in further investigating the impact of the tape. The results were similar, except that significant results were obtained for general anxiety and depression. That is, women randomised to receive the tape who listened to it, had a significantly larger reduction in anxiety (mean change score of -1.6944) compared to those who were randomised not to receive the tape (mean change score of -0.2923) ($t_{99}=2.255$, $p=0.02$). Continuing the trend, women randomised to receive the audiotape, who listened to it, had a significantly greater reduction in depression (mean change score of -2.6389) compared to those who were randomised not to receive the audiotape (mean change score of -1.2000) ($t_{99}=2.592$, $p=0.01$). Other outcomes were not significantly different between the groups including risk perception.

To test the hypothesis that the tape would have a differential effect on monitors and blunders we included an interaction term in regression analyses. On all outcomes the interaction term was not significant. Thus, the tape appeared to have had the same effect regardless of the woman's score on the monitoring/blunting measure. We wondered if larger numbers of monitors listened to the tape; however a cross tab analysis did not support this with 63% of monitors listening to the tape compared to 51% of blunders ($\chi^2_1=1.026$, $p=0.31$).

Satisfaction with audiotape

Of the women randomised to receive the tape and who listened to it, the majority found the audiotape helpful. The areas that the tape was perceived as either satisfactory, very or extremely helpful were in increasing women's understanding of breast cancer genetics (94%); assisting in family communication (92%); helping the family understand about breast cancer genetics (89%); decreasing women's anxiety about breast cancer (77%); helping women make a decision about having genetic testing (85%); and making a decision about managing their genetic risk (84%). Only 20% of women found the tape satisfactory, and 35% found it very or extremely helpful in terms of increasing their understanding of their personal risk.

Women were asked to list other ways in which they found the audiotape helpful. Only eighteen women provided additional responses. The main area identified was to "jog your memory" and to have the tape for future reference, for example, "ability to recall complex issues discussed". To be able to share the tape with relatives was also noted, for example, "tape is great idea for future for younger children who are too young now". One woman said the tape was "a reminder that there is someone to turn to", but one woman was not happy with the audiotape because "(I) didn't want to relive agony/emotional heartache".

DISCUSSION

One hundred and ninety-five women with a family history of breast cancer, both affected and unaffected, were randomly assigned to receive or not receive an audiotape of their genetic consultation. The results show that of the 98 women who received the audiotape, half of them listened to it, which is similar to the findings of Watson *et al*¹¹ in their study of audiotape provision in genetic counselling. This suggests that such interventions may be attractive to some but not to others. In particular, in this study, women who had had breast cancer, and those who were more anxious and depressed and had less knowledge of breast cancer genetics were more likely to listen to the audiotape. Thus, it appeared to be particularly helpful to vulnerable subjects and this might guide the clinician who had scarce resources in determining which women might benefit most from this intervention. The majority of participants reported high satisfaction with the tape and listed a number of ways they found it useful, such as to prompt recall, assist family communication (including future generations), and reinforce reassuring messages.

In oncology consultations, while most studies of audiotape provision in initial consultations have reported almost universal use, in a recent study by our group of audiotape provision in the setting of routine follow up, only 68% elected to take the tape home when offered the choice.²⁰ Refusers most commonly felt the tape would serve no useful purpose. Thus, in less intense clinical encounters, where patients are perhaps less overwhelmed by emotion, audiotapes may be valued by fewer patients. Interestingly, in the above oncology follow up study, almost all of those who elected to take the tape home also listened to it, suggesting that offering choice is an effective way to ensure that only those who will benefit receive the tape.¹¹ Similarly, Hack *et al*²¹ found that patients who chose to receive an audiotape of their primary adjuvant treatment consultation exhibited significantly greater information recall than those who received the tape without choice or those who did not have the tape.²¹

Written summaries of genetic counselling sessions have been found to be useful as a "memory aide", but also in assisting in the dissemination of information among family members.²² Similarly, audiotapes of consultations could be useful. However, while few women listened to their audiotape, even fewer shared it with family members. Perhaps there was material on the tape of a sensitive nature. It has been

suggested that when people are given the option of receiving an audiotape, they are also given the option of turning the tape off during particular sections of the consultation if they are concerned about sharing this information with other family members.¹¹

Only just over half the women who received and listened to the tape perceived it as helpful in increasing their understanding of personal risk. This perception was supported by our findings, as contrary to our hypothesis that unaffected women randomised to receive an audiotape would be more accurate, they were actually less likely to be accurate in their risk perception at follow up. Fifty-six percent of unaffected women who received the tape were accurate at follow up compared to 76% who did not receive it. However, the audiotape had no effect on accuracy when the analysis was restricted to women who were inaccurate at baseline. Perhaps the finding in the whole sample is a statistical aberration; it is certainly hard to explain otherwise. Alternatively, restricting the sample to those inaccurate at baseline (n=40) may have resulted in insufficient power. Watson *et al*¹¹ also found that audiotape provision did not increase risk accuracy in a genetic counselling population.

It should be noted that a risk figure was given in only 52% of the audiotaped consultations with unaffected women. While most unaffected women did receive a figure in their follow up letter and thus we were able to calculate their objective risk, provision of the audiotape would not have helped those women whose consultations had not provided a specific risk category or figure. This interpretation is supported by the fact that in women who received a post consultation summary letter there was a strong trend towards improved accuracy of recall. This finding raises an issue often neglected in studies of audiotape provision, that is, that replication of communication will only ever be as useful as the original discussion. However, this consideration does not affect the results of our study other than to restrict power, because the proportion of women receiving risk estimates is the same in each group owing to the randomised design.

It was only possible to analyse data for unaffected women as affected women were not routinely given a risk figure (in either their consultation or follow up letter) for the chances of a second breast cancer occurring. Therefore, whether they were inaccurate or accurate in their risk perception, or if the audiotape affected their risk accuracy, could not be assessed.

While Watson *et al*¹¹ found an audiotape of the genetic counselling session did not impact on risk accuracy, they did find that the audiotape significantly reduced cancer worries. The current study found a trend for women who received the tape to have significantly improved scores on depression at follow up but not reduced intrusive worries about cancer. When the analysis was repeated, including in the intervention arm only those women who listened to the tape, the results showed significant reduction in anxiety and a significant reduction in depression. Thus, the tape did appear to have a positive impact on psychological outcomes in those who chose to listen to the tape, although this result could reflect bias in excluding those who did not listen to the tape and may have been more psychologically distressed. Watson *et al*¹¹ suggested that some women require regular reassurance and may use the tape for this purpose. Perhaps hearing this discussion again on the audiotape with the reinforcement of the supportive and counselling behaviours of the consultants was a positive effect on women's anxiety.

This study found that coping style (monitoring versus blunting) did not influence the likelihood that women would listen to the tape, nor their responses to the tape. These were surprising findings, as previous studies have reported a greater preference for and benefit from additional information in women with a monitoring coping style. Women who attended for genetic counselling in this study tended to be of higher education and professional status than the general popula-

tion, and there were more monitors than there were blunters. Therefore, there may have been insufficient variability on this measure to allow differences to be observed. Another possibility is that the material on the tape was not sufficiently threatening to provoke a "coping response" in these women.

In conclusion, our findings suggest that the provision of an audiotape after the genetic counselling session may have a beneficial effect in reducing anxiety and depression, although further studies are required to confirm this finding. In our sample, provision of the tape appeared to have a detrimental effect on women's ability to process information concerning their breast cancer risk. While hearing the same words twice may not improve recall without additional opportunities to clarify misconceptions, there is no apparent reason why it should worsen the situation. A more likely explanation is that these results were a chance finding and stronger conclusions require replication. As a cost effective, non-time consuming intervention, audiotaping merits consideration for routine inclusion into clinical practice, perhaps supplemented by other strategies (for example, summary letters, tailored information) to target risk perception. It is suggested that women be given a choice about receiving the audiotape to ensure that only those who will benefit will receive it and also to address the issue of the disclosure of confidential information as highlighted by previous authors.¹¹

In addition, audiotaping has other uses apart from providing patients with a record of their consultation. For example, it can allow auditing of clinical practice, provide an objective benchmark for patient recall, and provide the basis for research into the influence of clinician knowledge or patient outcomes.

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REFERENCES

- 1 **Dunn S**, Butow PH, Tattersall MHN, Jones QJ, Sheldon JS, Taylor JJ, Sumich MD. General information tapes inhibit recall of the cancer consultation. *J Clin Oncol* 1993;**11**:2279-85.
- 2 **Clarke A**, Parsons E, Williams A. Outcomes and process in genetic counselling. *Clin Genet* 1996;**50**:462-9.
- 3 **Evans DGR**, Blair V, Greenhalgh R, Hopwood P, Howell A. The impact of genetic counselling on risk perception in women with a family history of breast cancer. *Br J Cancer* 1994;**70**:934-8.

- 4 **Ley P.** *Communicating with patients: improving communication satisfaction and compliance.* London: Croom Helm, 1988.
- 5 **Ley P,** Spelman MS. Communications in an outpatient setting. *Br J Soc Clin Psychol* 1965;**4**:144-16.
- 6 **Cassileth BR,** Zupkis RV, Sutton-Smith K, March V. Information and participation preferences among cancer patients. *Ann Intern Med* 1980;**92**:832-6.
- 7 **McClement SE,** Hack TF. Audio-taping the oncology treatment consultation: a literature review. *Pt Educ Counsel* 1999;**36**:229-38.
- 8 **North N,** Cornbleet MA, Knowles G, Leonard RCF. Information giving in oncology: a preliminary study of tape-recorder use. *Br J Clin Psychol* 1992;**31**:357-9.
- 9 **McHugh P,** Lewis S, Ford S. The efficacy of audio-tapes in promoting psychological well-being in cancer patients: a randomised controlled trial. *Br J Cancer* 1993;**71**:388-92.
- 10 **Tattersall MHN,** Butow PN, Griffin A, Dunn SM. The take home message: patients prefer consultation audiotapes to summary letters. *J Clin Oncol* 1994;**12**:1305-11.
- 11 **Watson M,** Duvivier V, Wade Walsh M, Ashley S, Davidson J, Papaikononou M, Murday V, Sacks N, Eeles R. Family history of breast cancer: what do women understand and recall about their genetic risk? *J Med Genet* 1998;**35**:731-8.
- 12 **Lerman C,** Narod S, Schulman K, Hughes C, Gomez-Caminero A, Bonney G, Gold K, Trock B, Main D, Lynch J, Fulmore C, Snyder C, Lemon SJ, Conway T, Tonin P, Lenoir G, Lynch H. BRCA1 testing in families with hereditary breast-ovarian cancer. *JAMA* 1996;**275**:1885-92.
- 13 **Horowitz MJ,** Wilner N, Alvarez W. Impact of Event Scale: a measure of subjective stress. *Psychosom Med* 1979;**41**:209-18.
- 14 **Thewes B,** Meiser B, Hickie I. Validation of the Impact of Events Scale in women at increased risk of developing hereditary breast cancer. *Psycho-Oncol* 2001;**10**:459-68.
- 15 **Zigmond AS,** Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatr Scand* 1983;**67**:361-70.
- 16 **NH & MRC.** *Familial aspects of cancer: a guide to clinical practice.* Canberra: National Health and Medical Research Centre, 1999.
- 17 **Shiloh S,** Avdor O, Goodman RM. Satisfaction with genetic counselling: dimensions and measurement. *Am J Med Genet* 1990;**37**:522-9.
- 18 **Maguire P,** Tait A, Brooke M. Effect of counselling on the psychiatric morbidity associated with mastectomy. *Br Med J* 1980;**281**:1454-6.
- 19 **Meiser B,** Butow PN, Schienden M, Gattas M, Gaff C, Harrop K, Bankier A, Young M, Tucker K. Psychological adjustment of women at increased risk of developing hereditary breast cancer. *Psychol Health Med* 2000;**5**:377-88.
- 20 **Knox R,** Butow PN, Devine R, Tattersall M. Audio-tapes in oncology consultations: only the first? *Ann Oncol* (in press).
- 21 **Hack TF,** Pickles T, Bulz B. Providing audio tapes of primary adjuvant treatment consultations to cancer patients: a multicentre randomised trial. *Clin Oncol Soc of Aust Ann Scien Mtg,* Adelaide, Australia, 2000.
- 22 **Hallowell N,** Murton F. The value of written summaries of genetic consultations. *Pt Educ Counsel* 1998;**35**:27-34.

Correction

In the June issue of the journal (*J Med Genet* 2002;**39**:434-9) in the paper by Weise *et al*, there was an error in one of the authors' name and affiliation. S Gabriele should have been G Senger, Practice of Medical Genetics and Gynecology, Regensburg, Germany.