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## Clinicians' Practice and Perception of Disclosure Model for Breaking Bad News to Breast Cancer Patients

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## ABSTRACT

**Background:** Physicians' beliefs about disclosure manner and their ethical attitude for telling the truth is an important issue in patient-physician interaction. The aim of this study was to examine clinicians' practice and perception of disclosure models for giving bad news to breast cancer patients.

**Methods:** Participants (n = 207, age 21–61 years, mean work experience = 4.03 ± 6 years) working in different medical centers in Tehran, Iran, were recruited by purposive sampling method. They completed clinicians' attitude and practice of Breaking Bad News (BBN) scales. Psychometric properties (reliability and validity) of these scales were approved.

**Results:** Clinicians' practice differed significantly by their perception of disclosure model for giving bad news. Furthermore, difference in clinicians' practice and perception of disclosure model for BBN was observed for age, gender, medical work experience in oncology setting, and receiving special training. Finally, clinicians' perception of disclosure model for BBN (Adj. R2 = 0.32), age (Adj. R2 = 0.17), gender (Adj. R2 = 0.11), and receiving special training for giving bad news (Adj. R2 = 0.09) positively predicted their practice of BBN.

**Conclusion:** Findings of the study point to the importance of the clinicians' perception of disclosure model for giving bad news and transcultural variables as factors affecting their practice. Therefore, it seems necessary to incorporate special BBN trainings and protocols culturally adapted to the Iranian society in educational curricula of medical specialties and medical ethics in breast cancer setting.

**Introduction**

The recent Greek *New Code of Medical Ethics and Deontology* declared that according to the principle of patients' autonomy, physicians should provide the patients with the appropriate information about their health status.<sup>1</sup> Based on the International

Code of Medical Ethics, physicians must respect patient's right to select different methods of treatment and inform patients about their decisions.<sup>2</sup>

Informing patients about the diagnosis of a serious health-threatening disease or failure in treatment is called a clinically bad news.<sup>3,4</sup> In other words, "bad news" is any information that negatively impacts one's expectations for the future.<sup>5</sup> Breaking bad news (BBN) has been studied widely in oncology setting.<sup>6-8</sup> Disclosing the diagnosis of cancer or its prognosis is a stressful task for doctors.<sup>9</sup> Oncologists may have to break bad news to patients with an average of 20000 times over the course of their career.<sup>10</sup>

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Breast cancer is the most prevalent cancer among women worldwide.<sup>11</sup> Disclosure of breast cancer to the patients is of utmost importance and affects all aspects of the patients' life as well as their decisions on different types of treatment.<sup>3</sup> It can also affect the patient's hope and trust in surgeon's expertise, and have a considerable effect on the communication with the surgeon and the other physicians in the team.<sup>12</sup> A scientific, stepwise disclosure method has a positive effect on patients' quality of life, reducing patient's stress and maintaining hope,<sup>13</sup> increasing satisfaction with and confidence in the health care team,<sup>14, 15</sup> and improving patient cooperation in treatment process.<sup>16</sup> Hence, clinicians' attitude toward and practice of BBN is an essential part of patient care in breast cancer.

Clinicians have different attitudes toward disclosure of bad news. A model suggested by the World Health Organization (WHO) distinguishes three disclosure models regarding clinician-patient communication and decision-making style:<sup>17</sup> full disclosure, where the physician tells all the truth to the patients, and clinical decision-making is considered the patient's responsibility; non-disclosure, where the physician has a dominant role, and the patient will be dependent on the clinicians' decision-making and play a passive role; and individual disclosure, where delivering of information will be done based on the patients' preference.<sup>18</sup>

Prior studies showed that physicians' tendency to each disclosure model is under the influence of the following factors: institutional norms, previous specific training for BBN, preference of patients' families<sup>19</sup>, patients' and clinicians' characteristics, time considerations,<sup>20</sup> organizational considerations, and clinicians' work experience.<sup>9, 21</sup> Cultural and social norms are important factors influencing clinicians' attitudes toward BBN, eg clinicians' inclination to family-centered decision-making style in non-Western nations,<sup>22, 23</sup> vs. the higher tendency toward patients' autonomy in Western countries.<sup>24, 25</sup> Thus, telling the truth is not a simple task; instead, it is a dynamic process that concerns not only the disclosure of the truth to patients, but also communication between clinician and the patients as well as their families according to social norms.<sup>26</sup>

BBN is a complex practice which requires a variety of skills such as communication, understanding, and empathy.<sup>27</sup> From this point of view, some studies offer various models and protocols that guide clinicians on how to disclose bad news to their patients.<sup>6, 28, 29</sup> One of the most important guidelines is SPIKES, which is designed in six phases. In this acronym "S" stands for *setting up* the interview, "P" assessing the patient's *perception*; "I" obtaining the patient's *invitation*, "K" giving *knowledge* and information to the patient, "E" addressing the patient's *emotions* with

empathic responses, and "S" *strategy* and *summary*.<sup>6</sup> ABCDE is another guideline for BBN five steps of which are as follows: Advance preparation, Build a therapeutic environment/relationship, Communi-cate well, Deal with the patient and family reactions, and Encourage and validate emotions.<sup>30</sup>

Previous studies usually highlighted that "giving bad news" includes several steps: (a) the pre-delivery phase including preparation of the appropriate space and time, paying attention to patient's cultural background, considering patient's needs, assessing what patients know, and the amount of information he needs to know; (b) the delivery phase, which is dedicated to providing the patients with all necessary information and clarifying any misunderstanding; and (c) the post-delivery phase consisting of patient follow-up. This stage includes responding to any patient question, giving emotional support and providing empathy, addressing the next step, and closing the session.<sup>31-33</sup>

The existing literature on the physicians' perception and practice of BBN shows a global trend toward full disclosure of bad news to cancer patients.<sup>12,34-39</sup>

However, as stated above, there are many other parameters affecting the truth-telling and physicians' perception of disclosure method for BBN. The physicians' personal characteristics are among the most important factors in this regard.<sup>1</sup> In this context, attitude and belief will be among the best predictors for the future behavior when they are easy to recall and stable over time.<sup>40</sup> Henderson *et al.* indicated that knowledge was not significantly related to nursing practice and that attitude moderated the relation between knowledge and practice; so attitudes and beliefs have direct effects on nursing practice.<sup>41</sup> Beach *et al.* showed that physician's attitude has an impact on healthcare quality and communication with patients.<sup>42</sup> One study suggested that the physicians' attitudes toward BBN might affect their behavior,<sup>43</sup> although it has not been examined despite its implications. Apparently, another element that affects disclosure manner is a transcultural factor. Locatelli *et al.* observed that Italian physicians' age and gender influenced telling bad news to the older cancer patients and managing emotional reactions.<sup>44</sup> Special BBN training is another element that impacts physicians' disclosure manner.<sup>45-47</sup> Therefore, it is essential to consider beliefs and transcultural factors in analyzing physicians' BBN approaches.

Considering the high prevalence of breast cancer in all countries,<sup>11</sup> including Iran,<sup>48</sup> there are insufficient studies on the clinicians' attitudes toward, perception, and practice of disclosing bad news to breast cancer patients. The purpose of this study was to assess Iranian clinicians' perception and



practice of telling bad news to breast cancer patients according to disclosure models. Besides, the influence of transcultural factors on the physicians' perception and practice of disclosing bad news to breast cancer patients were evaluated.

### Methods

A cross-sectional design was used to examine physicians' practice of delivering bad news to breast cancer patients based on the perception of disclosure models (full-disclosure, non-disclosure, and individual disclosure) and two protocols for BBN, like SPIKES and ABCDE.

The sample of the present study included 207 Iranian clinicians (surgeons, hematology-oncology, radiologists, radiation oncologists, nurses, and midwives) working in medical centers of Tehran, particularly at wards treating breast cancer patients. They were recruited via purposive sampling. The sample size was calculated according to previous studies that showed the percentage of physicians who informed patients about their cancer diagnosis was about 45%,<sup>49, 50</sup> a confidence level of 95%, and margin of error of %0.675<sup>51</sup> (15% prevalence). From December 2015 until March 2016, all eligible participants were informed about the aim of the study, and those who were willing to participate were included. They had full cooperation in the survey and completed the questionnaire.

#### *Ethical approval*

The study was approved by the Research Ethics Committee of Tehran University of Medical Sciences.

#### *Measurement tools*

##### *Attitude Toward Breaking Bad News scale*

Physicians' perception of disclosure model for BBN was measured by using the Attitude Toward Breaking Bad News scale developed by Borjalilu and colleagues<sup>52</sup> according to WHO disclosure model. The scale comprises three factors with 12 items rated on 5-point Likert-type scale ranging from 1 (completely agree) to 5 (completely disagree). The "full disclosure" factor consists of 5 items (Cronbach's alpha = 0.746), the "non-disclosure" factor 5 items (alpha = 0.834), and the "individualized disclosure" 2 items (alpha = 0.795).

##### *Physicians' Practice of Breaking Bad News*

Physicians' practice was assessed using the practice of BBN scale. The instrument was developed based on SPIKES and ABCDE models of BBN.<sup>52</sup> It comprises 20 items divided into 6 subscales including Preparation (4 items), Setting of the interaction (3 items), Communication (4 items), Using the word "cancer" (2 items), Patient's right to know (2 items), and Closing the interview and summarizing (5 items). Items were rated on a 5-point

Likert-type scale ranging from 1 (never) to 5 (always). The subscales were shown to have acceptable internal consistency (Preparation:  $\alpha = 0.765$ , Setting of the interaction:  $\alpha = 0.63$ , Communication:  $\alpha = 0.65$ , Using the word "cancer":  $\alpha = 0.793$ , Patient's right to know:  $\alpha = 0.759$ , and Closing the interview and summarizing:  $\alpha = 0.7$ ).

Data regarding physicians' demographic and career characteristics were collected, which included the following: age, gender, specialty, medical work experience in the oncology setting, job title, frequency of giving bad news within the past three months, minimum and maximum time (minutes) spent on disclosing bad news to patients, the need for special BBN training, and the need for guidelines on how to deliver bad news.

#### *Statistical analysis*

We used Statistical Package for Social Sciences (SPSS) version 22 for data analysis. Descriptive statistics (mean, standard deviation, minimum, and maximum) were used to describe variables, and independent *t* test was performed to compare the physicians' perception and practice of BBN between genders. For comparison of physicians' BBN practice based on their perceptions of BBN models and transcultural factors (age, work experience, and receiving special BBN training), the one-way analysis of variance (ANOVA) along with the Tukey post hoc test was used. Finally, linear regression model was used to examine the association of physicians' practice with their perception of BBN and transcultural factors. Cronbach's  $\alpha$  was calculated to assess the reliability of physician's attitude and practice scales for BBN to breast cancer patients. Level of statistical significance was set at 0.05.

### Results

A total of 207 participants completed the questionnaires. There were 119 females (57%) and 88 males (43%) clinicians (age:  $38.1 \pm 9.1$  years, range: 21–61) practicing in different fields (surgery: 52 (25%), radiation oncology: 38 (18.5%), nursing: 42 (20%), hematology-oncology: 31 (15%), radiology: 30 (14.5%), and midwifery: 14 (7%).

Of 207 participants, 123 (59.56%) worked in educational hospitals (faculty members = 51 (24.5%), clinical fellowship members = 19 (9.1%), specialists = 14 (6.7%), and residents = 39 (18.8%)), and 84 (40.44%) were employed in general hospitals. The average work experience of physicians in the field of oncology was  $4.03 \pm 6$  years.

Fifty-eight percent of participants had disclosed bad news to less than 5 breast cancer patients within the past three months. The minimum and maximum amount of time participants would spend on giving bad news to patients was 5 and 15 minutes. The results showed that only 24 of the clinicians (11.5%)

**Table 1.** Characteristics of participants (N = 207)

Variables		N(%)
Gender	Male	88 (43%)
	Female	119 (57%)
Age	< 30	60 (29%)
	30–50	127 (60%)
	> 50	20 (11%)
Specialty	Hematology-oncology	31 (15%)
	Surgery	52 (25%)
	Radiology	30 (14.5%)
	Radiation oncology	38 (18.5%)
	Nursing	42 (20%)
	Midwifery	14 (7%)
Medical work experience in the oncology setting	< 10	81 (39%)
	10–20	24 (11%)
	> 20	6 (3%)
Job title	Faculty member	51 (24.5%)
	Clinical fellow	19 (9.56%)
	Specialist	14 (6.7%)
	Resident	39 (18.8%)
	Private health sector	84 (40.44%)
Number of bad news delivered within the past 3 months	< 5	121 (58%)
	5–10	37 (18%)
	> 10	43 (21%)
	No response	6 (3%)
Minimum time spent on giving badnews		Median = 5 min
Maximum time spent on giving bad news		Median = 15 min
Breaking bad news training	Yes	24 (11.5%)
	No	99 (48%)
	Somewhat	84 (40.5%)
Need for guidelines on delivering bad news tailored to Iranian sociocultural context	Yes	169 (82%)
	No	38 (18%)
Preferred occasion for breaking bad news	Upon confirmation of diagnosis	120 (58%)
	During treatment	24 (12%)
	After treatment	23 (11%)
	Upon patient's asking	40 (19%)

had received special training on BBN, and a large proportion of participants (82%, n = 169) expressed a need for appropriate guideline for delivering bad news to breast cancer patients according to the Iranian sociocultural context. Fifty-eight percent of participants preferred to deliver the bad news of cancer to patients when a definitive diagnosis was made (Table 1).

#### *Physicians' practice and perception of disclosure model for BBN*

The mean scores for disclosure models were 21± 2 (full disclosure), 6± 1 (individual disclosure), and 15± 4 (non-disclosure). Descriptive analysis of the study variables is shown separately for physicians' practice and three disclosure models in Table 2.

#### *Difference in clinicians' practice by their perception of disclosure model for BBN*

For the comparison of groups, we checked the assumptions (normality and homogeneity) of one-way ANOVA and independent t tests. The results

indicated that the assumption was met. Afterwards, one-way ANOVA was done to compare the clinicians' practice of BBN to breast cancer patients by their perception of disclosure models (full disclosure, non-disclosure and individual disclosure) (Table 3).

As revealed by ANOVA analysis, there was a significant difference in total mean scores of clinicians' practice for the three perception of BBN disclosure models [F (4, 202)= 7.0391, P= 0.005]. Post hoc analysis showed that clinicians with a full disclosure attitude had significantly higher scores compared with clinicians with other two attitudes. In subscale comparisons, there was a significant effect of disclosure attitude on clinicians' using the word "cancer" [F (4, 202)= 9.745, P= 0.001]. Post hoc comparison showed that clinicians with a full disclosure attitude towards BBN tended to use the word "cancer" more frequently than those with other two attitudes. Also, there was a significant effect of disclosure attitude on "Patients' right to know" subscale for the three attitudes [F (4, 202) = 8.026,

**Table 2.** Descriptive analysis of variables

Variables		Mean	SD	Minimum	Maximum
Perception of Disclosure model	Full disclosure	21	2	13	25
	Non-disclosure	15	4	4	25
	Individual disclosure	6	1	2	10
Subscale and total scores for Practice	Preparation	16	3	4	20
	Setting of the interaction	11	2	3	15
	Communication	14	1	10	20
	Using the word "cancer"	7	2	2	10
	Patients' right to know	6	1	3	10
	Closing the interview and summarizing	20	3	5	25
	Total score for practice	76	87	48	97

**Table 3.** Difference in clinicians' practice by perception of disclosure model for BBN

Practice	Disclosure model for breaking bad news			F	Sig.
	Full disclosure Mean (SD)	Non-disclosure Mean (SD)	Individual disclosure Mean (SD)		
Preparation	18 (2)	15 (3)	16 (2)	4.35	0.09
Setting of the interaction	13 (1)	10 (2)	14 (2)	7	0.087
Communication	16 (1)	14 (1)	15 (1)	7.06	0.325
Using the "cancer" word	9 (1)	7 (2)	7 (1)	9.74	0.001
Patient's right to know	7 (2)	6 (1)	7 (1)	8.02	0.002
Closing the interview and Summarizing	22 (2)	20.03 (3)	21 (3)	6.12	0.531
Total score of practice	87 (6)	75 (9)	83 (7)	7.03	0.005

$P=0.002$ ]. Post hoc analysis revealed that clinicians with the full disclosure attitude scored significantly higher than those with other two attitudes, implying that they respected the patients' right to be informed about their medical conditions more than did their colleagues with other two attitudes. Finally, there was no significant difference in the mean scores for preparation [ $F(4, 202)=4.356, P=0.09$ ], setting the interaction [ $F(4, 202)=7, P=0.087$ ], communication [ $F(4, 202)=7.065, P=0.325$ ], and closing the interview and summarizing [ $F(4, 202)=6.128, P=0.531$ ] for the three disclosure attitudes.

#### *Differences in clinicians' perception of disclosure model for BBN and practice by age*

The comparison of the mean scores for the different disclosure models by age demonstrated a significant effect of age on non-disclosure attitude [ $F(3, 203)=3.26, P=0.002$ ]. Post hoc analysis showed that clinicians under 30 years of age had significantly higher scores ( $13.01 \pm 4.14$ ) on non-disclosure attitude compared with other age groups. Similarly, a significant effect of age was observed for the clinicians' practice scores [ $F(3, 203)=8.71, P=0.001$ ]. Post hoc analysis indicated that the mean score for practice of BBN in 30–50-year age group was significantly higher ( $79 \pm 7.41$ ) than that of other age groups.

#### *The effect of clinicians' gender on their perception of disclosure model for BBN and practice*

The results of this study showed significant gender difference in the scores for non-disclosure attitude ( $t=2.169, P=0.03$ ). Female clinicians had

higher mean score for the non-disclosure attitude compared with the males ( $15 \pm 4.1$ ). Also, there was a significant gender difference in the total mean score for the clinicians' practice ( $t=2.11, P=0.036$ ), with females having higher mean score compared with males ( $79.1 \pm 6.1$ )

#### *Differences in clinicians' perception of disclosure model for BBN and practice by work experience*

There was a significant effect of job experience on perception of disclosure models for non-disclosure [ $F(3, 203)=2.045, P=0.001$ ] and individual disclosure attitudes [ $F(3, 203)=1.12, P=0.027$ ]. Post hoc analyses indicated that the mean score for non-disclosure attitude was significantly higher in the group with under 10 years of work experience ( $14 \pm 3$ ) compared with that of other two groups, and the mean score for individual disclosure for the group with 10–20 years of work experience ( $6.41 \pm 0.1$ ) was significantly higher than those for the other groups. Finally, there was no significant difference in the total mean score for the clinicians' practice of BBN for the three work experience groups.

#### *Differences in clinicians' perception of disclosure model for BBN and BBN practice by receiving special training*

There was a significant difference in full-disclosure attitude scores by "receiving special BBN training" [ $F(3, 203)=2.09, P=0.001$ ]. Post hoc analysis indicated that the mean score for full-disclosure attitude was significantly higher for the group who had received training ( $22 \pm 2.1$ ) compared with the other two groups. Receiving BBN training



also had significant effect on non-disclosure attitude [F (3, 203)= 1.01, P= 0.001]. Post hoc analysis indicated that the mean score for non-disclosure was significantly higher for the group with training (15± 3.04) compared with the other two groups. The scores for individual disclosure attitude were also significantly different for different BBN training groups [F (3, 203)= 0.89, P= 0.001], with the mean score for individual-disclosure attitude for the group with BBN training being significantly higher (6.05± 1.25) than that for the other groups. Finally, there was a significant difference in the total mean scores for clinicians' BBN practice by special BBN training [F (3, 203)= 2.028, P= 0.001], and post hoc analysis indicated that the mean overall BBN practice score for the group with BBN training (81± 7.1) was significantly higher than that for the groups who had not received any training or had received little training.

*Prediction of clinicians' practice from their perception of disclosure model for BBN and transcultural factors*

The regression model for prediction of clinicians' practice from their perception of disclosure model for BBN was significant [F (3, 203)= 17.11, P= 0.001] and was able to explain 32% of the variance in clinicians' practice. Also, the regression models for prediction of clinicians' practice from their age [F (3, 203)= 15.81, P= 0.001], gender [F (3, 203)= 4.45, P= 0.001], and receiving BBN training [F (3, 203)= 7.15, P= 0.001] were significant and explained 17%, 11%, 9% of the variance in clinicians' practice, respectively. However, medical experience in the field of oncology was not a significant predictor of clinicians' practice.

## Discussion

The aim of the study was to determine clinicians' perception of disclosure models and practice of delivering bad news to breast cancer patients in Iran and to explore differences in practice according to perception of disclosure models.

Our results showed that the majority of clinicians who participated in this study used full-disclosure and individual disclosure models for BBN. From the total mean scores for practice and their subscales, which mostly fall above the minimum scores, it seems that clinicians had acceptable practice for giving bad news to breast cancer patients. Previous studies support this finding.<sup>16, 53</sup> It seems that clinicians have a tendency toward full disclosure of the bad news to cancer patients in Iran, like Western countries.<sup>54</sup> We found that a large majority of clinicians (91%) believed that "most of the patients want to know the truth about their illness" or "disclosure of the diagnosis of breast cancer to patients is necessary" (87%). According to prior studies,<sup>16, 55</sup> most clinicians (90%) believed that

disclosure of bad news would enable patients to cooperate in the treatment process and decrease confusion and ambiguity for the patients and their families (81%). Regarding disclosure of breast cancer, clinicians reported that they spent a minimum of 5 minutes and a maximum of 15 minutes per case. It may be due to organization barriers<sup>1</sup> (lack of enough time and private place), engagement in different activities<sup>56</sup> (clinical education and research activities in the educational hospital), and/or individual barriers<sup>57</sup> (insufficient skills or knowledge and lacking a sense of responsibility). Thus, it is highly recommended that these potential barriers to delivering bad news to patients be explored through further research.

In our study, a significant difference was observed for clinicians' BBN practice by their perception of disclosure models for BBN (P= 0.001), and their perception of disclosure models explained 32% of the variance in their practice. Post hoc analysis showed that clinicians with attitude toward full disclosure reported better practice for BBN to breast cancer patients than clinicians with different disclosure models (P= 0.001). As mentioned, attitude directly affects health care practice, as shown in previous research.<sup>41</sup> It seems that attitude is the most effective element in the practice of the clinicians who participated in the study. Clinicians who preferred full disclosure model for BBN had better disclosure manners and made appropriate arrangements for this task. But other clinicians with tendency for non-disclosure and individual disclosure models had lower scores on the professional practice of BBN scale, probably due to their beliefs and attitudes. Regarding the relationship between attitude and behavior, research indicates that attitude accessibility (easy to recall) and stability (stable information) are the main factors affecting attitude retrieval and reconstruction.<sup>40</sup> Therefore, it is important to work on clinicians' attitude in medical schools and educational hospitals. Also, one of the significant differences in clinicians' practice was related to using the word "cancer" (P< 0.05). Post hoc analysis showed that clinicians with tendency toward full disclosure model used "cancer" more frequently than those with tendency for other models (P< 0.05). We also found that the majority of clinicians (77%) did not agree that the use of the word "cancer" would lead to panic in patients, which is consistent with the protocols for BBN.<sup>40</sup> This finding is similar to the reports on the physicians' practice in countries like Australia<sup>58</sup> and Canada<sup>59</sup> where truth disclosure is an established routine. However, in Asia and the Middle East, physicians, patients and their families usually try to avoid using the word "cancer," because in these cultures "cancer" is equivalent to death or incurable illnesses; therefore it produces such negative emotions as fear, stress, and helplessness in cancer patients.<sup>60-62</sup> Hence,



future research is necessary to determine the preference of Iranian women with breast cancer and their families regarding the use of the term “cancer,” or other words such as “tumor” or “mass,” when the diagnosis is disclosed to them.

Our results showed a significant difference in clinicians’ practice of respecting “patients’ right to know” ( $P < 0.05$ ). Post hoc analysis showed that physicians with tendency for full disclosure model believed that patients had the right to be informed about their medical conditions and breast cancer ( $P < 0.05$ ). Respecting patients’ right to be informed of their conditions, which is asserted in medical ethics, has also been observed in previous studies.<sup>63, 64</sup> However, research has demonstrated that in some Asian countries, such as China and Japan,<sup>23,65, 66</sup> as well as some European countries, for example Spain and Italy,<sup>61</sup> the patients’ families tend to ask clinicians to refrain from disclosing the truth about diagnosis or prognosis to patients. Accordingly, it is necessary to develop an appropriate strategy according to breast cancer patients’ right to know and their families’ preferences for disclosure of bad news.

In this study, we observed a significant difference between clinicians’ perception of disclosure model and practice of BBN by age and medical experience in oncology setting ( $P < 0.05$ ). Post hoc analyses showed that younger clinicians preferred to use non-disclosure model for delivering bad news ( $P < 0.005$ ). Locatelli *et al.*<sup>44</sup> and Baile<sup>21</sup> also reported similar findings. It may be because they lack the skills to deal with the difficult situation of telling the truth and they cannot manage the process of BBN. We also found that the majority of older clinicians (30–50 year age group) with 10–20 years of work experience preferred individual disclosure model and that their practice of giving bad news was better than those of the younger ones ( $P < 0.005$ ). There are several explanations for this finding. Studies have shown that some breast cancer patients do not want to hear everything from the surgeons and would prefer information that gave them hope and maintained a personal clinical relationship with the surgeon.<sup>12</sup> Azu showed that breast cancer patients in the United States believed that physicians were supposed to know about the appropriate amount of information that should be delivered to each patient.<sup>67</sup> Also, Lobb *et al.* reported that half of the women preferred hearing positive information, e.g. chance of cure.<sup>68</sup> For Iranian women with breast cancer, creating hope and building trust are the preferences for clinicians’ manner of disclosure.<sup>69</sup> Against this background, other studies indicated that women undergoing screening mammography wanted truthful results of imaging from radiologists<sup>70, 71</sup> and agreed that the radiologist should communicate the results directly to them.<sup>72</sup> As the evidence is not conclusive toward one specific approach, it may be reasonable that physicians with longer work experience in cancer

treatment practice the individual disclosure model for giving bad news. It is likely that they would be aware of the patients’ needs and socio-demographic status due to their extensive experience and would select the appropriate information and frame it to be disclosed to their patients. In our survey, middle-aged clinicians with enough work experience and appropriate skills reported better practice of BBN. Moreover, regression analysis showed that age explained 17% of the variance in clinicians’ practice, but work experience (in years) did not prove to be a significant predictor; so clinicians’ age is an important factors in their practice of BBN.

The results of this study confirmed that clinicians’ gender affected their perception of disclosure model for BBN and practice for informing breast cancer patients, explaining 11% of the variance in the clinicians’ practice. In the disclosure model we observed a significant gender difference for non-disclosure model ( $P < 0.05$ ), with the females having higher mean score for the non-disclosure than the males. Further, there was a significant gender difference in the total mean score for the clinicians’ practice ( $P < 0.05$ ), and the female clinicians had better practice for giving bad news to breast cancer patients than males physicians. Our results are consistent with other studies about doctor-patient relationship. Compared with male physicians, female clinicians tend to spend more time with each patient, display better communication skills, and be more effective in triggering positive emotions in their patients.<sup>73</sup> They usually disclose more information to patients than their male counterparts do,<sup>74</sup> and their communication style is more commonly a patient-centered approach.<sup>75</sup> Furthermore, male clinicians tend to favor a direct manner of giving information to patients,<sup>76</sup> compared with indirect approaches preferred by female clinicians.<sup>77</sup> It is plausible that female clinicians are better able to avoid disclosure dilemma (attention to patients’ autonomy vs paternalism) or deal with negative emotions of breast cancer and lack of skills for managing this situation. For an in-depth description, we suggest that male and female physicians’ experiences regarding delivering bad news to breast cancer patients be explored in future studies.

The result of our survey showed that there was a significant difference in perception of disclosure models and practice of delivering bad news between clinicians who had received special BBN training and those who had not received training ( $P < 0.005$ ), and that receiving special training for BBN explained 9% of the variance the clinicians’ practice. Post hoc analysis showed that participants with special BBN training had higher mean scores for the full-disclosure and individual disclosure, and those who had not received training had higher mean scores for the non-disclosure ( $P < 0.005$ ). Physicians who had received special BBN training had better practice



than the group without any training ( $P < 0.005$ ). Novack *et al* reported that medical school and hospital training impact clinicians' attitude toward truth-telling in favor of full disclosure of cancer diagnosis to patients.<sup>78</sup> Prior research has indicated that communication skills training can improve clinicians' interviewing skills and affect their attitude.<sup>79</sup> Also, BBN training courses can improve communication skills,<sup>45, 46</sup> increase self-efficacy for giving bad news,<sup>80</sup> elicit appropriate levels of physiological arousal,<sup>81</sup> and promote competence for patient care. Results from our study reflect an essential role of BBN training. However, we observed a lack of sufficient training among the clinicians who participated in this study. Only 11.5% of the clinicians reported that they had received specific training in BBN, similar to other studies in this regard.<sup>35, 63, 82-84</sup> Therefore, the lack of training is one of the reasons that giving bad news to breast cancer patients is a difficult task for physicians.

It seems that lack of a context-based protocol for delivering bad news is a barrier to clinicians' practice. A considerable majority of the clinicians in our survey (82%) expressed the need for appropriate culturally-adjusted guideline regarding giving bad news to breast cancer patients in Iran. Therefore, it is necessary to design a BBN protocol compatible with Iranian breast cancer patients and their family member preference, considering both clinicians' attitude regarding disclosing bad news and the culture of Iranian society. For example, study shows that resorting to religious and spiritual sources can help some patients to better cope with their cancer situation, particularly in an Islamic country.<sup>85</sup> In that study, 86% of clinicians endorsed that after informing breast cancer patients, they reminded patient as they believed that everything was in the hands of God, and he is the healer. Hence, it seems necessary to develop a guideline for delivering bad news according to Iranian cultural context.

We have attempted to describe clinicians' preferences for and practice of BBN in breast cancer setting and discuss the main factors affecting this process. But our study has some limitations. First, generalization of the results must be done with caution due to the cross-sectional nature of the surveys. Second, the results of this study were produced by self-report measurement method. We recommend that future studies use observational method for assessing clinicians' practice.

Despite these limitations, our results highlighted some evidence that would be useful regarding its practical implication. It emphasized the need for special BBN training to change the clinicians' attitude toward truth disclosure and improve their BBN skills. Our survey indicated that physicians show interest in training courses; therefore, the training programs should be designed according to the needs of patients and physicians with respect to

Iranian socio-culture environment. Furthermore, developing a context-based protocol seems essential.

Moreover, the results of this study have implications for designing curriculum in medical education and ethics so that appropriate protocols according to Iranian culture based on clinicians' preferences and practice can be developed. To achieve this, however, we need to know about Iranian women's as well as their families' preferences.

### Conflict of Interest

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