



## Survey to Determine what is Important to a Variety of Consumers in Different Countries, and who is Paying the Bill for a Disaster Diet

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### Abstract

Individuals evaluated six different parameters of a diet. Two surveys were conducted. The first involved individuals who had not received prior humanitarian aid and would have to pay for it. The second involved individuals who had received prior, free humanitarian aid. In the first survey, both nutrition and cost were found to be the most important factors. In the second survey, nutrition was found to be the most important factor however cost was the least important factor since it was free.

**Keywords:** Food Parameters; Survey; Diet Preferences; Medical Personnel; Patients; General Population

### Introduction and Objectives

The best way to find out what consumers think is to ask them. Survey information data can make the difference between smart decisions and misguided, inefficient ones. The objective of these surveys was to evaluate the desirability of product nutrition, palatability, texture, tenderness, flavor and cost by individuals from three areas (India, Tibet and outback Australia). Individuals who had not received humanitarian aid were compared to individuals who had experienced a disaster and had received humanitarian aid. The first survey sampled medical personnel, patients and general population. The second survey concentrated on medical personnel

and a few patients. Two evaluations (ranking and rating) were utilized to compare the two scoring systems and to test the individuals' understanding of the two evaluation procedures (translators were available).

### Materials and Methods

Experimental design is shown in figure 1. Informed consent and confidentiality was maintained.

### Survey 1 (Consumers had to pay for the diet)

Results from the surveys for 'Rating' are shown in figure 2 and for 'Rank' in figure 3.

#### Country

#### Respondent

#### Parameter

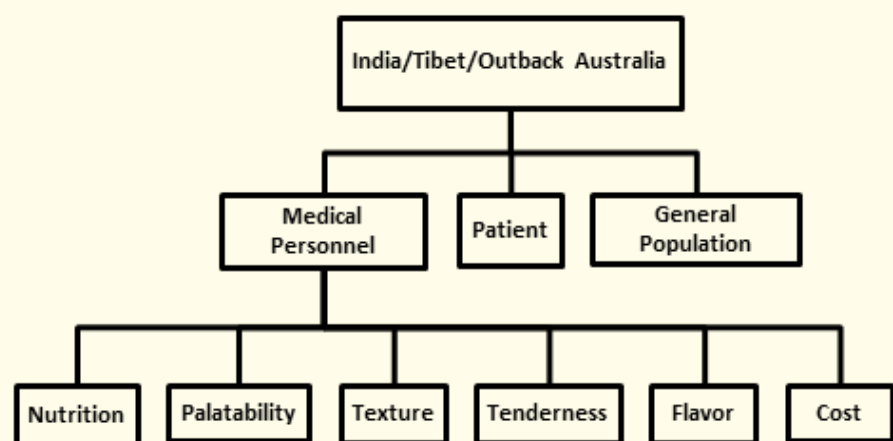
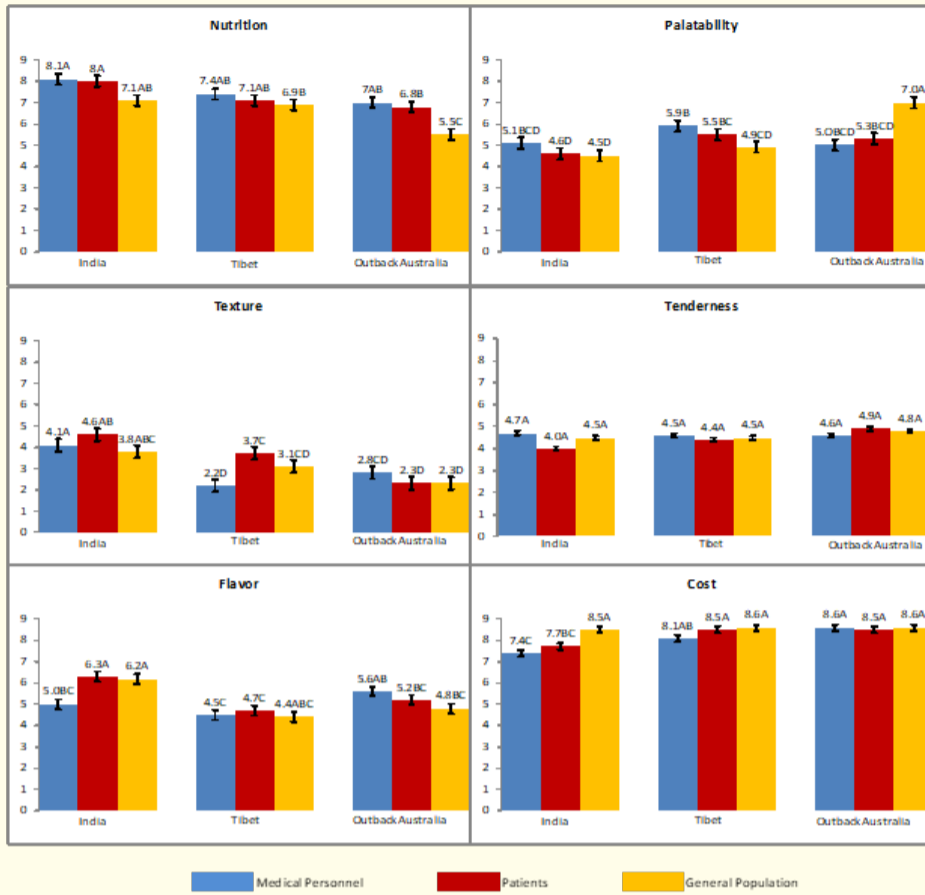
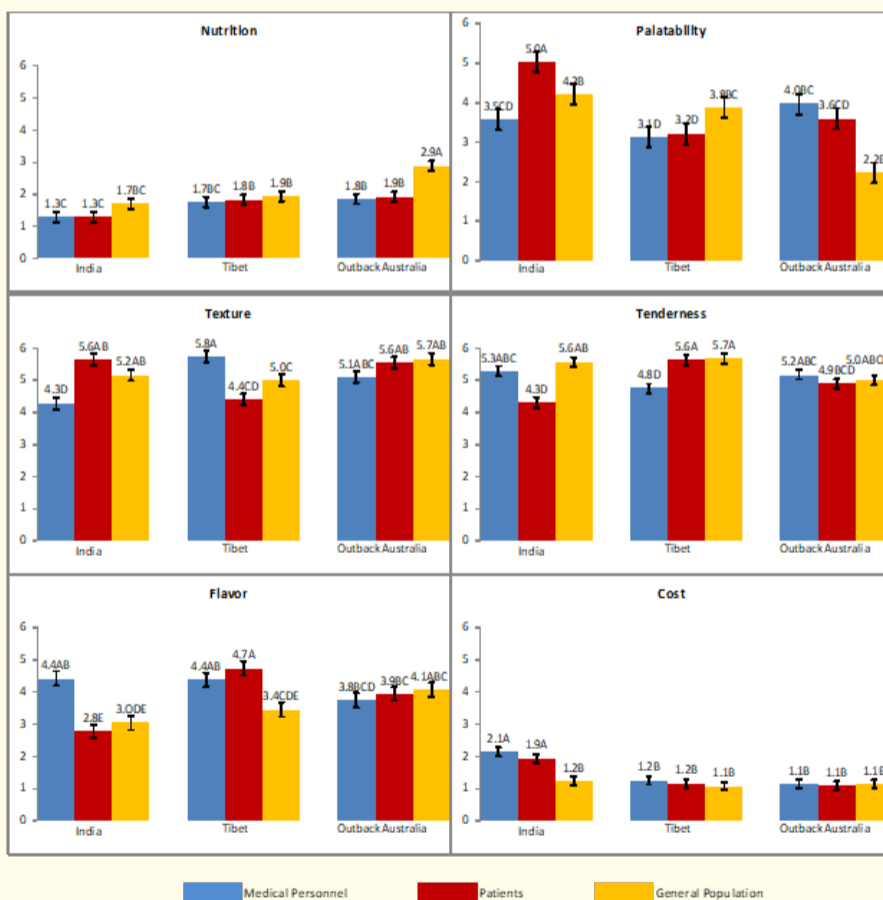


Figure 1: Flow Chart of Survey # 1. Information Collected - both Rank and Rating.



**Figure 2:** Bar graphs for 'Rating' (Higher values indicate more importance) indicating the main effects of each country (vertical lines indicate standard deviation). Letters indicate significance in each of the six parameters evaluated.



**Figure 3:** Bar graphs for 'Rank' (Lower values more important) indicating the main effects of each country (vertical lines indicate standard deviation). Letters indicate significance in each of the six parameters evaluated.

Statistics for Rank indicated that two way interactions (Country x Respondent) were significant. This interaction would suggest that the food product needs to be manufactured for each location. This is not practical since we cannot predict the location of disasters. A carefully formulated generic product could be useful for a variety of locations and cultural preferences.

In spite of the fact that the respondents on the rating questionnaire could repeat the scores, and on the rank survey they could not repeat the scores, the correlation between rating and rank for nutrition, palatability, texture, tenderness, flavor and cost were negative and highly significant in all cases. The negative correlation was a result of the reversal of desirability scales for each factor. The rank and rating factors showed essentially the same patterns. When overall rank and rating for all data were used (country, medical personnel, patients, and general population) the correlation was negative and highly significant ( $P < 0.01$ ) for all factors evaluated. This would suggest that the respondents understood the rank and rating systems.

When the data was evaluated by absorbing medical personnel, patients and general population in each country, the correlation between rank and rating was always negative (due to scale orientation) and usually highly significant.

It is evident that nutrition and cost are the most important factors in survey 1 (diet had to be purchased) in all situations. It would appear that as long as these two factors are satisfied for emergency use, of a generic product could be utilized at least for a short term solution.

The country evaluation indicates that India had the highest rating score on nutrition followed by Tibet and Outback Australia in that order. For rank cost data, the interaction graph is again a negative mirror image of the rating interaction graph. The general population scored the cost lower than the medical personnel and patients. The country evaluation of cost was similar to nutrition.

**Survey 2 (Diet was free for customizers)**

Statistics numbers in patient category) surveyed people that had received humanitarian food (Free F\for consumers)T) aid after a natural disaster to see if these recipients had a different opinion on which food factors were the most important using the same procedure as the previous analysis. A summary of results are illustrated in table 1.

Mean ± standard deviation	Medical personal (42 observations)		Patients (4 observations)	
	Rank	Rate	Rank	Rate
Nutrition	1.1 ± 0.5	5.8 ± 0.63	1.0 ± 0.0	6.0 ± 0.0
Palatability	3.7 ± 0.7	2.8 ± 2.4	3.6 ± 1,1	2.3 ± 2.2
Texture	4,7 ± 1.5	2.5 ± 1.9	4.7 ± 1.5	2.3 ± 1.8
Tenderness	5.2 ± 3.1	2.0 ± 2.0	5.2 ± 3.1	0.5 ± 2.1
Flavor	3.1 ± 1.3	5.7 ± 1.7	3.1 ± 1.3	4.7 ± 0.8
Cost	4.1 ± 1.8	1.0 ± 10	4.1 ± 1.8	0.0 ± 12.2

**Table 1:** Results of the second survey (No cost for Consumers).

For Rank low numbers are desirable, and in Rate high values are desirable. Nutrition remains the most important factor, but cost dropped from the top two factors and was considered to be to less important, as would be expected since they respondents were not paying for the diet. In the rate evaluation, the cost standard deviation is extremely large suggesting that not all observers agreed on the importance of cost. We are sure that suppliers would consider cost an important factor and higher the cost of production the less would be the supply. A benefit for the manufacturer supplying a free diet would be the favorable publicity that it generates.

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