

# Study on consumer perception regarding the label declaration of allergens by E-commerce food operators

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**Abstract—** Adverse reaction to food is a serious nutritional problem which was earlier reflected upon only by industrialized nations but it is fast catching up with the developing nations. The diverse and unique food culture of India, has acquired its own portfolio of food allergens too. At present, there is no effective medical treatment except avoidance of allergenic foods. E-commerce food services including delivery services and online grocery portal are booming tremendously popularity due to changing lifestyle. In the lockdown period of 2020 due to COVID-19 pandemic, pre-packaged foods demand has seen the contribution of e-commerce sales uptick. However, customers with allergies and dietary restrictions oftentimes feel 'disheartened' from ordering takeaway food. Therefore, we conducted an online survey to gain consumer insights over various domains related to food delivery, including food ingredients, allergens, labeling, preferences and to estimate the awareness and occurrence of food related adverse reaction and food allergies in a digital population of India. However, generating precise adverse food reaction prevalence information is somewhat difficult. Throughout this report, most of the graphs represent the aggregated results of all 505 respondents, where out of total, 71 (14%) reported a certain food allergy (FA)/ food intolerance (FI) and 37 (7%) were classified as having a probable FA/ FI. The report also estimated that 15% respondents have one FA and 7% have two and multiple food allergies (FAs). Milk allergy was the most common reported FA. Food allergen labeling is a significant tool to reduce risk of exposure and prevent anaphylaxis for consumers with FAs. Hence, the new regulations must prescribe the provision for labeling of food allergens. It also allows to use of standardized precautionary and safety symbols not on only packaged products but also on the online food service portals. What's in food must be on the screen.

**Index Terms—** Food allergy, E-commerce food services, food intolerance, regulation, consumer preference

## Introduction

Food is necessary element of life; yet, food can also be poison for some. During the last decade, food allergies have attracted considerable attention from the food industries and FSSAI. India's government has been planning to boost the food packaging and food processing industry. Therefore, it is relevant to know about food causing allergic reactions as now it becomes a part of the food safety issues.

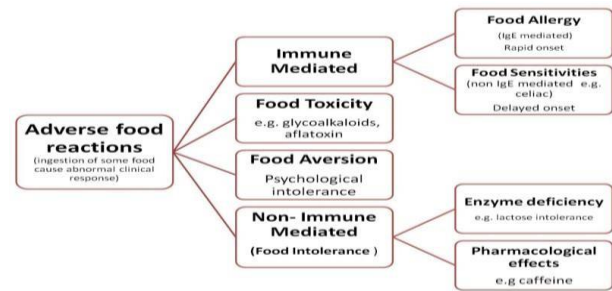


Figure 1.1. Type of adverse food reactions

An adverse food reaction is any abnormal reaction resulting from the ingestion of certain foods. They are basically categorized on the basis of different biological pathways including Immune mediated and non-immune mediated (figure 1.1). The immune mediated are further divided into immediate hypersensitivity reactions involving IgE i.e. FA and delayed hypersensitivity reactions termed as non IgE reactions i.e. food sensitivities.<sup>1,2,3</sup> FA happens when antigen (allergen in food) is recognized as foreign by body and produces IgE antibodies to check the action. Allergic reaction included wheezing, diarrhea, coughing, urticaria, swelling of lips, rashes, vomiting, etc. occurs within minutes or hours of consumption. Whereas, food sensitivity occur when circulating white blood cells (lymphocytes or granulocytes) react to a food or chemical and release pro-inflammatory chemicals known as “mediators” into the bloodstream, which cause symptoms throughout the body. These reactions are usually dose-dependent and take more than one to two hours after consuming the food. An example would be a wheat sensitivity that causes abdominal pain, diarrhea, and brain fog the day after eating a moderate amount of wheat.<sup>4</sup> The non-immune mediated includes food intolerance that can occur either due to lack of digestive enzymes required for digestion of certain foods e.g. lactose intolerance or due to pharmacological effects of chemicals like caffeine, histamine, etc.<sup>2</sup> Acute food toxin is also a part of adverse food reaction involved bacterial contamination or aflatoxins.

Food induced anaphylaxis is a critical public health issues that influences about 8% of children and 3-10% of adults worldwide.<sup>4</sup> FA has reached close to epidemic in the developed country and presently represents the main cause of anaphylaxis found in US emergency province.

It has arouse hospitalization rate continuously year on year especially in children as it has been increased up to 3.5 fold.<sup>5,6,7</sup> However, the fact is that it is fast catching up with India also, with an estimated 25% of the population currently having at least one allergic condition according to data of 2010.<sup>8</sup> Indeed, progressively embracing a Western lifestyle, are noticing thriving rates of allergic disease across age groups, especially the young. With a population of well over a billion, FA/ FI could turn into a huge issue in India. Some estimates suggest up to 3% of Indians may allergy have FAs, the dominant part being under 40 years of age. Food hypersensitivity results in roughly 30,000 emergency treatments and 100 to 200 deaths per year in the nation. Up to 3 million Indians may have peanut allergy alone.<sup>8</sup> The mortality rate for anaphylaxis disorder in India is approximately 1-3 percent of the overall population.<sup>9</sup>

Diversification and unique culture of India has acquired its own portfolio of food allergens too. Although more than 160 foods can cause allergic reactions in people with FAs, the law identifies the eight as the most common allergenic foods. These foods account for 90 percent of food allergic reactions and are the food sources from which many other ingredients are derived (such as whey from milk).<sup>10</sup> The Codex Alimentarius (CA), Food and Drug Administration (FDA) and Food Standards and Safety Authority of India (FSSAI) have recognized [eight common allergenic foods](#) as milk, fish, eggs, tree nuts (which include walnuts), Crustacean, peanuts, soyabean, Cereals containing gluten (i.e., wheat, rye, barley, oats, spelt or their

hybridized strains) and Sulphite in concentrations of 10mg/kg or more<sup>11,12</sup> (fig 1.2).

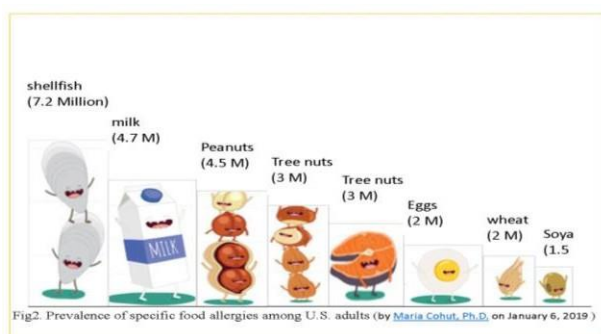


Fig.2. Prevalence of specific food allergies among U.S. adults (by Maria Cohut, Ph.D, on January 6, 2019)

Professor Mahesh PA, Director at Allergy Asthma Associates in Mysore, India, conducted research that unveiled many others – with brinjal, cucumber, lady's finger (okra) and papaya among the most common foods causing clinical symptoms in population samples from Mysore City and from Bangalore.<sup>8</sup> Complementary surveys were done in other states of India like Madhya Pradesh, Bangalore, Delhi, and Kolkata. Those surveys gain further data related to prevalence of food allergy. Those surveys depicted the predominance of various fruits and vegetable such as brinjal, papaya, cucumbers, pomegranate, lady fingers, bananas, tomato and mango besides those eighty common FAs. The studies also revealed FA is extensive among consumers of age group below fifteen.<sup>13</sup> In the era of globalization; despite an absence of information, many researchers believe that food allergies are on the rise as consumers are adopting imported, exotic products and western diets e.g. kiwi allergic individuals.<sup>33</sup>

The prevalence of FA/ FI reactions occurring, mostly in restaurants depending consumers.<sup>14</sup> The way of food manufacturing or processing might be one of the reasons for increasing allergenicity that has been found from various countries such as in the UK, Australia and USA where dry/ roasted peanuts are prevalent of FA. On the other side, some parts of Africa and China have a low rate of peanut allergies even with consumption of the same amount of peanuts because they have been frying/ boiling of peanuts processing.<sup>12</sup> Others factors like introduction of new protein into foods during genetic manipulation, genetic and environmental factors (the hygiene hypothesis means urban children are more susceptible than rural children), lifestyle and eating behaviors for instance novel food processing technologies such as food irradiation or misuse of microwaves etc could also lead to these FA problems.<sup>15</sup> Publicity of symptoms associated with food have also been

reported to be associated with FAs psychosomatically.<sup>16</sup>

Diagnosing FAs can be as convoluted and costly as the medical condition itself. A very small amount of protein/ allergen might trigger different symptoms in different individuals affecting different systems in the body.<sup>17</sup> Even the individual may not always experience the same symptoms during every reaction. Food allergic reactions can affect the skin, gut, respiratory tract, and/or cardiovascular system. Moreover, individuals may develop food allergies at different ages.<sup>18</sup>

According to Food Allergy Research & Education (FARE), a treatment for peanut allergy was approved in January 2020 by the U.S.FDA, but this treatment is not appropriate for every peanut allergy patient and is approved only for patients from age 4 through ages 17. There are no approved treatments for other FAs. The only measure or solution to prevent from this serious public health consequences would be avoidance of food allergens strictly and early management and detection of adverse food reactions.<sup>11,19,20</sup>

Catering industries are booming tremendously as they offer a wide variety of food products based on consumer preferences. A catering outlet may vary from Quick service restaurants (QSRs) to cafes to fine dining restaurants. Thus, the food offered is prepared food that can vary from regional street foods to multi-continental cuisines. Nowadays, eating out is common even it become a necessity of today's lifestyle as so many working professional were working away from home. The people are also venture out of their homes more often to savor delicacies. This poses extra responsibilities on the food businesses to ensure safe and wholesome food to their consumers. It is estimated that about 23 to 30 Cr people are eating either a meal or a snack from some outside kitchen daily. The catering industry possess various challenge related to ensuring safe food.<sup>21</sup>

The business of delivering and ordering food online is rapidly growing due to changing lifestyles. E-commerce food services include delivery services like Swiggy, Zomato and online grocery stores such as Big Basket, Grofers, etc. Recently, online food delivery industry is growing exponentially not only in metros but in the Trier 2 and 3 cities as well.<sup>22</sup> Over all food delivery Applications (App) aggregator, 75-80%

of market have been shared by Swiggy and Zomato and claim to be in some 500 cities each.<sup>23</sup> These two companies started positively, with the combined monthly orders crossing the [50 million mark](#) and the revenues for the two going up as well. Swiggy is comfortably the platform with a higher number of daily orders with over [1.5 million daily orders, to Zomato's 1.2 million](#).<sup>22</sup> Swiggy has also opened more than 1,000 cloud kitchens of its own, renting out readymade cooking zones to restaurants that only order online (fig 1.3).<sup>23</sup>

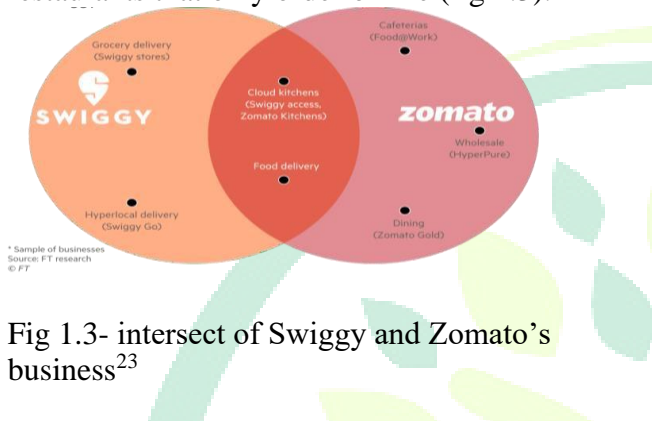


Fig 1.3- intersect of Swiggy and Zomato's business<sup>23</sup>

In the lockdown period of 2020, fast-moving consumer goods (FMCG) sales have been increases 42 percent from the contribution of e-commerce.<sup>24</sup> FMCG companies have partnered with different last-mile delivery Apps such as Swiggy, Zomato, Dunzo, Grofers, Bigbasket, etc. to improve the availability of their products. Companies expect the current COVID-19 crisis to prompt an uptick in e-commerce sales as people become loath to stepping out. Ready-to-cook meals, a surprise entrant in the high selling food items amid COVID19 pandemic and lockdown, is likely to have benefited branded labels more with people taking extra precaution about health and hygiene.<sup>14</sup> Home delivery and online ordering helped them to reach their customers.<sup>15</sup>

E-commerce Food Delivering Services (FDS) are intended to bring the best of restaurants from our area right at our fingertips. FDS tries to target urban foodies who like to taste variation in food at the comfort of their homes by their app-based technology giving filters on price range, cuisine types, even have reviews, rating option. It is aiming to save the time of going to the restaurant and then ordering food.

These online platforms are complying with FSSAI to operate widely and provide service in the country. Only licensed and registered restaurants are under these Apps. There are Mandatory licenses for the FDS industry such as Shop Act

License, Health Trade License, FSSAI License, etc The food license makes all online food aggregator apps safe and secure.<sup>27</sup> The FSSAI has already been auditing food-delivery apps to assure compliance with the safety and hygiene aspects. So far, these e-commerce industries operate only as a channel between the consumers and restaurants, picking up orders and delivering them<sup>28</sup>. Hence, it is clear that millions of consumers are direct in link with these food aggregators However, customers with allergies and dietary restrictions frequently feel 'discouraged' from ordering takeaway food.

Earlier there was no law regarding food allergy. The FDA passed the [Food Allergen Labeling and Consumer Protection Act \(FALCPA\) of 2004](#). FALCPA aims to improve food labeling information for the millions of consumers who suffer from food allergies. The law applies to all foods whose labeling is regulated by FDA, both domestic and imported.<sup>29</sup> In India, there is no food allergens guidelines for "non-prepackaged, prepackaged for direct sale foods (PPDS) and E-commerce FDS even there is no mandatory guideline for allergens in pre-packaged products according to Part II of Schedule 4 of Food Safety & Standards (Licensing & Registration of Food Businesses) Regulation, 2011 and Food Safety And Standards (Packaging And Labelling) Regulations, 2011.<sup>30</sup> Moreover, at the 44th Session of the Codex Committee on Food Labeling, discussed on Internet Sales / E-Commerce and concluded that the internet sale of non-pre-packaged food (i.e. loose foods) could follow the same guidelines for mandatory labeling information as for non-retail containers, and could, therefore, consider the provision of information by means other than the label.<sup>31</sup>

Recently, the UK Government introduces new law that food businesses can provide mandatory allergen information for [PPDS](#) food by any means they choose, like orally by members of staff or written upfront on the menu board. As of 1 October 2021, this will implement. This changed happen because of Natasha Ednan-Laperouse who died due to an allergic reaction after consuming sesame seeds present in a baguette.<sup>32</sup> The evolving lifestyle pattern and eating habits of Indians have been popularized online food delivery, especially in urban areas. In India, most of the adverse food reactions are not to be life-threatening yet, the most common symptoms, according to Professor Mahesh's work, insight to be a headache, itching,

skin rashes, joint pain and vomiting (fig 1.4). The worry is this situation will worsen, with anaphylaxis increasing. Further, a single dose of medication that is injected into the thigh during an anaphylactic emergency is rarely available. The best ways to manage condition are to avoid allergens that trigger allergic reactions.<sup>20</sup>



(a)



(b)



(c)

**Figure 1.4: Respondents suffering from food allergens by intake of (a) moog dal, chana dal, orange and egg (b) nuts (peanuts and almonds) (c) dairy and wheat containing products**

The FSSAI's new Labeling and Display regulations, 2019 drafted notification related to food labeling that would supersede the Food Safety and Standards (Packaging and Labelling) Regulations, 2011. The draft was clearly explained that food allergen labeling is a significant element to prevent anaphylaxis and decrease the risk of exposure for consumers with FA. Hence, the new regulations recommended the Provision for labeling of food allergen and permit the utilization

of safety symbols and standardized precautionary. *However, the draft did not mention the basic mandatory labeling of all prepackaged foods with allergens information.* In this way, societal pressure, as opposed to national rules, would drive food companies to label their at least pre-packaged foods in the most informative and exact manner, to enable citizens to know more about the composition of food products, so that they can make informed choices.

We can see the ingredients and allergens in packaged food on the shelf. But is it important for online food delivery also? To know this we conducted an online survey and the objective is to gain consumer insights over various domains related to food delivery, including food ingredients, allergens, labeling and preferences. It was also intended to estimate the awareness and occurrences of food-related adverse reactions and FAs in the digital population of India. The digital population of India is one of the reasons for the tremendous growth of e-commerce food enterprises. In the lockdown period due to Covid 19 pandemic, an online survey is a golden opt of collection data from any corner of India within a short time due to the advancement of the online social platforms (e.g. Instagram, Facebook, LinkedIn, WhatsApp) and Electronic mail. Additionally, we have included quotes and general commentary from survey respondents in the report to better capture the consumer's voice directly.

## Methods

The online survey questionnaires was created on Google form and shared to online social websites. The questions included respondent's gender, age, occupation, location, online food order preferences and knowledge of adverse food reactions, presence of any FA, rating of the following factors like safety and hygiene, ingredient and allergens information on the basis of their preferences and any allergic symptoms faced after intake of online food products ever. The survey was conducted among digital population of India that went over a period of 15 days, in month of May, 2020. The online Google form was shared through online social platform (e.g., instagram Facebook, linkedIn, WhatsApp and twitter) and electronic mail.

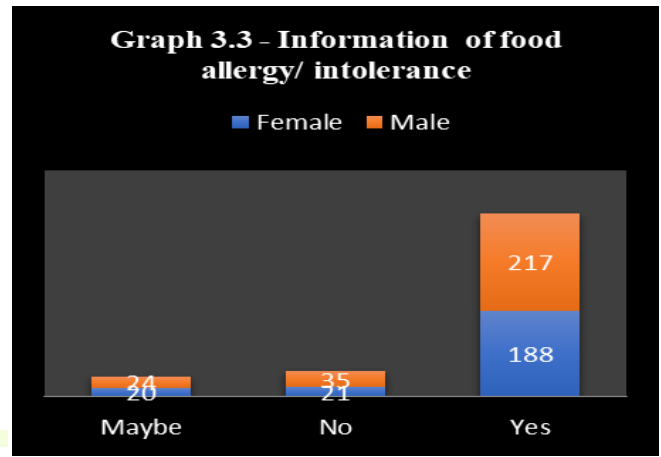
## 2.1 Statistical Analysis

The analysis of data and graphical presentations were done using the Microsoft Excel 2007, from the available spreadsheet of Google response page. The descriptive statistics variables are summarized as percentages.

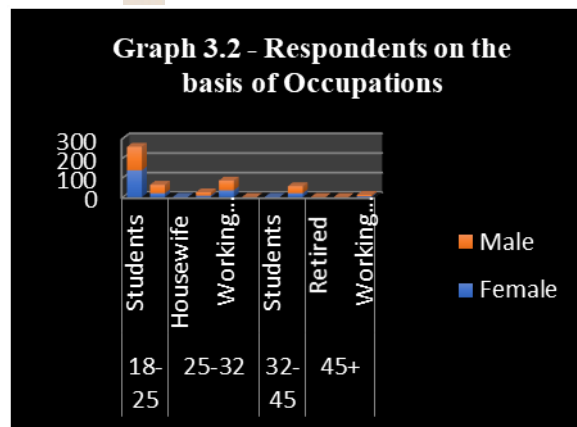
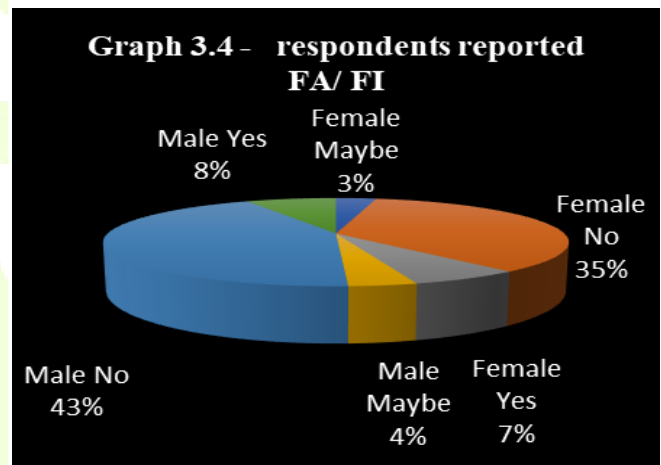
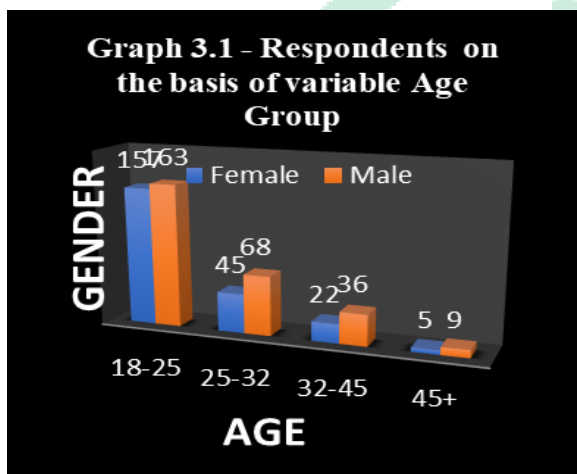
**Results**

**3.1 Participation Rate**

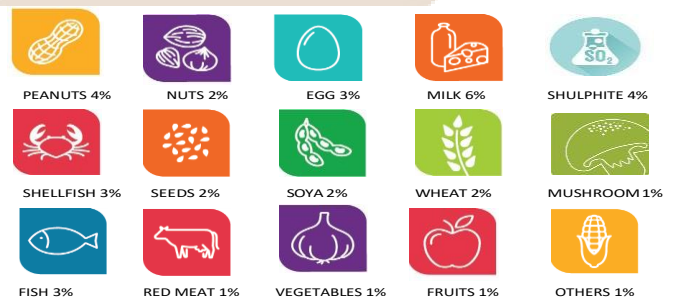
Out of the 505 questionnaires, 272 (55%) were males and 229 (45%) were females. The maximum respondents had come from students (graph 3.2) age group of 18-25 years (graph 3.1).



Out of the 505 respondents, a total of 71 (14%) reported a FA/FI (perceived) and 37 (7%) were classified as having probable FA/FI as shown on graph 3.4.



The occurrence of adverse food reactions or perceived FA/ FI due to different foods is shown in fig 3.1.



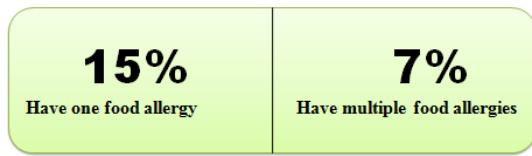
**3.2 Occurrence reports**

Of the 505 respondents, 405 (80%) respondents were known about FA/ FI or adverse food reaction is shown on graph 3.3.

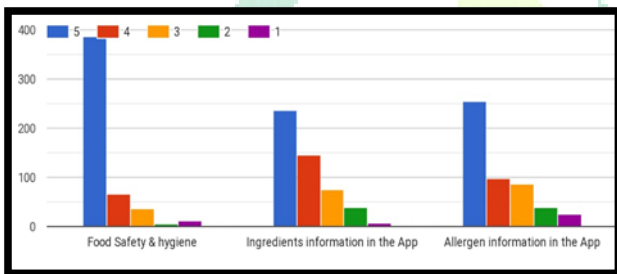
Fig. 3.1 Type food allergies and intolerance reported by respondents\

Milk allergy was the most common reported food allergy. The report also estimated that 15%

respondents have one food allergy and 7% have two and multiple food allergy.



Further analysis was rating of some important factors while ordering food online and reported on the basis of respondents preferences included food safety & hygiene, ingredients information and allergens information in the App. The report estimated that maximum rating was towards food safety and hygiene of food followed by allergen and ingredients information is shown in fig 3.2.



Respondents also approved that they would order more if online food delivery portal have ingredients and allergens information is shown on graph 3.8,

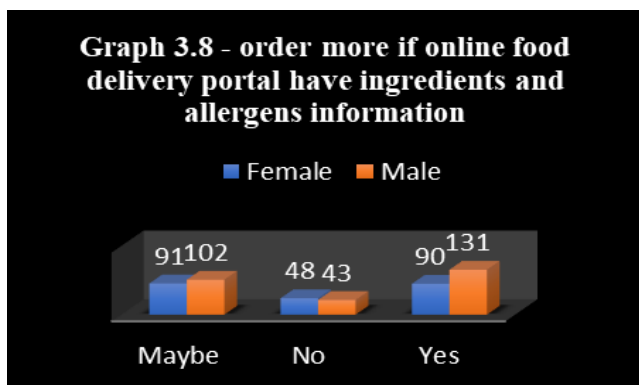
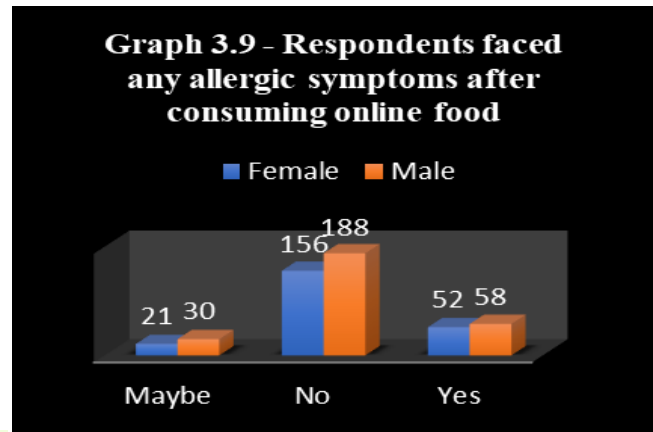
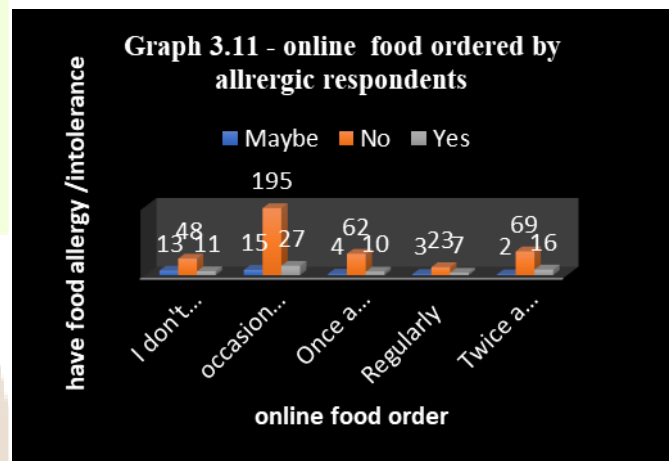


Fig. 3.2 Respondents preferences while ordering food online.

We estimated through survey that both allergic respondents and non allergic respondents faced some adverse food reactions it could be food allergic symptoms or normal symptoms as shown in graph 3.9 and 3.10.



The report has been clarified that allergic respondents order online food very less is shown in graph 3.11.



**Suggestions**

The rising food allergy among the population is alarming and calls for action. Role of food regulatory body i.e. FSSAI and food industries to manage the food processing in such a fashion that can mitigate the food allergens. The significant point is the complete commitment of those top management. This can certainly help in the reduction of the incidence of allergies by the consumption of products because they would

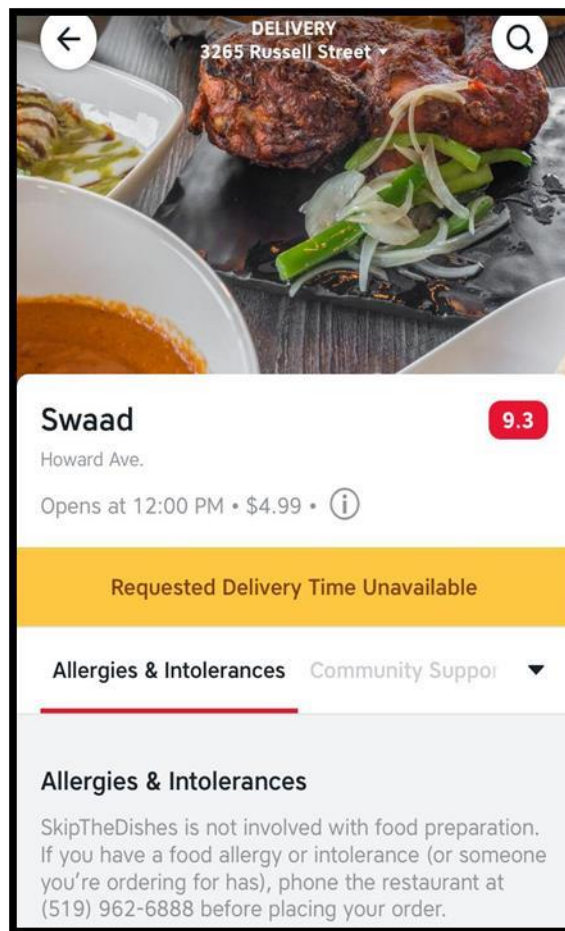
formulate policies which will help them to implement in their plants, restaurants and cloud kitchens. So there are following ways like well documented allergen policies; accurate, transparent and clean label should be present. What's in food must be on the screen means on the online food App. It should be mandatory for prepackaged products at least as reading label is the key factor to gain control over the allergy; and there should be no scope for ambiguity on the labels because that can prove to be lethal for those who will consume that product. Hence, this require educating both public and health professionals about food allergy epidemic; operational strategies to eliminate cross contamination such as implementation of food safety management system (FSMS); training and awareness of employees is very important. Last but not the least, an effective consumer communication will be a pivot point as it is a requirement for e-commerce, non-prepackaged and PPDS, because for businesses with direct engagement with their consumers, such as restaurants or cafe they can easily provide information on allergenic ingredients through oral or written forms to concerned consumers.<sup>34</sup> Muñoz-Furlong clarified, that at the point when somebody has a FA, the entire family will in general follow that restricted diet, and change their purchasing decisions.<sup>33</sup>

#### 4.1 Suggestions for online food aggregators-

Customers with allergies and dietary restrictions oftentimes feel 'disheartened' from ordering takeaway food. Hence, these online food aggregators can make their cloud kitchens along with other interesting food outlets to opt-in for "allergy-friendly" program like "Uber Eats" that will also commit to training their staff on how to effectively handle allergies requests and which be featured when orders are affirmed on the application.<sup>35</sup>

A small change in an app would save the life of customers as FA impacts quality of life and it might also increase their marketing for food allergic concern customers. They can provide the website link or the contact number of the registered restaurants so that a concerned person can verify the ingredient before placing an order such as in "Skip The Dishes" a Canadian online food delivery company did as shown in fig 3.3. If a restaurant is unable to serve a specific dish to a customer, they will be informed straight away and provided the

choice to order another item off the menu that is suitable for them.



In reference to these suggestions I have also mailed the Swiggy, Zomato and FSSAI; where I have got a positive response from Swiggy is shown in fig 3.4. Zomato and FSSAI couldn't mail us due to some network issues.





Fig. 3.4 Positive respond from Swiggy regarding this suggestion

Recently, guidelines for non-packaged/loose sweets seller issued by FSSAI that sweets at the outlet should display the “date of manufacturing” and “best before date”. According to us, they should also display ingredients or allergens. Yet, it would be practically difficult for ready to eat foods but it can be mandatory for online purchased pre-packaged food.

The labeling laws although require disclosure of all the important allergens but however the law doesn't regulate advisory labeling which means sometimes that read “contains” or “may contain”, studies have shown is increasingly being ignored by food allergic consumers.

The insight of ingredients and allergens might help in reduction of food wastage and better to create healthy India because due to covid 19 pandemic people are more concerned about their health and might be attracted to immunity-boosting food and ingredients. This may help restaurants to standardize/ personalize recipes according to dietary requirements and preferences as it enable consumers and businesses to make informed choice. It would boost more confidence among the public in general towards the different online delivery services in post COVID time and protect consumer health.

Easy to diagnose specific food allergen as Health professionals may help their patients in identifying the food proteins to which patients are allergic e.g some Chinese food contains black soya sauces (full of food allergens) and small amount of such food may hurt the allergic patients.

**4.2 Suggestion for consumers**

Avoid triggers such as foods and medications that have caused an allergic reaction in the past. Ask detailed questions about ingredients when you are eating away from home. Also carefully examine ingredient labels. If you have a child who is allergic to certain foods, introduce one new food at a time in small amounts so you can recognize an allergic reaction.<sup>36</sup>

When consumers get into restaurants, they have choice to interrogate. That requires an effective conversation **because consumer have eaten something on one occasion and been OK, doesn't mean the dish will necessarily be safe next time.** Most severe reactions are actually triggered by ingredients rather than

cross-contamination, although busy takeaways/restaurants may not clean a wok between dishes or may not clean it well enough to avoid residual allergens. Although, food businesses aren't obliged by law to serve or to sell anything if they don't want to, so it's possible that they may say they're unable to provide any safe food. However, if they do agree to serve, then there are a number of different laws that they must abide by. In particular they must tell the truth and must not mislead. Ask about ingredients, how the food is prepared and whether cross contamination with concerned allergens is likely. Speak clearly, factually, politely and to keep calm is crucial.<sup>37</sup> According to [Consumer Protection Act](#), section 2(34), wherein a customer suffers a physical harm in the form of food allergy or other health problems because of the food ordered, the food aggregators could be held liable along with food manufactures. Section 2(5), Consumer Protection Act 2019 the Act provides for the establishment of the Central Consumer Protection Authority ("**Authority**"). The objective of the Authority is to protect consumer rights and interests by regulating instances relating to unfair trade practices, false or misleading advertisements and violations of consumer rights.<sup>38</sup>

There is no cure for food allergies. Strict avoidance of food allergens—and early recognition and management of allergic reactions to food—are important measures to prevent serious health consequences.<sup>39</sup>

<p>I may not be interested in all the ingredients. However, prefer if information is available for key ingredients, additives, allergens, sugar and salt.</p>	<p><b>Clean label ingredient should be used which surely attract more consumers.</b></p>	<p><b>Food allergen awareness is important as per consumer perspective!</b></p>
<p>Here in Canada .. in most of the food delivery apps they provide the website link or the contact number of the customer service department so that</p>	<p>There should be proper information about hygiene level, ingredients, whether that product have any allergen(eg. Gluten) in that or not, info about veg or non veg by logo etc</p>	<p>Allergen information may be specified for every online purchased food.</p>
<p>a person can verify the ingredients before placing an order... and this don't take much ... this thing should be every where in every food delivery app ... apps just need an update ... please take it seriously as people have died over here due to food allergies.</p>	<p>Once I ordered from Uber eats and got a housefly in lassli, they mailed to them, they just refunded money, no action on that restaurant</p>	<p>It would be good if displayed, if not the ingredients, at least allergen declaration must be there.</p>
	<p>It would be great but practically difficult for few online businesses like ready to eat etc to have allergen info</p>	<p>it is the responsibility of restaurants to disclose info on proprietary foods. Major ingredient &amp; allergen info should be given. Disclosing of all the ingredient information will lead to exploitation of small FBOs.</p>
		<p>If Online Food Delivery Portal mention allergen and ingredients information than it is best the information given by e commerce company from which any one can take the food items of their requirement.</p>

**Quotes and general commentary from survey respondents**

They should display the ingredients along with its concentration if possible ex. Had Gulab Jamin from Bhagat Tarachand today but i could only feel sugar and sugar ,well if they also display the % of sugar %/ of ingredients will be better to create healthy India !	Yes it is important to list the ingredients and allergens for online food delivery not only for people with allergies but also for those who love to order food online as it can help personalize recipe according to dietary requirements and preferences.
Ideally, food site should provide food information but on ground level it can't be easy to do.	Online food are not always safe. Because we don't know actual condition of particular cooking area of restaurant as well as hygienic practices of cook. Allergen information is more important
I rarely ordered online food because of irrelevant information and due to current CoVID atmosphere	Once I encountered an allergen issue while ordering online.i order for roasted chana in snacks and I got roasted chana mixed with peanut's.if such situations could have been with someone allergic to peanuts than he/she could have worse life threatening situation also.so i would highly recommended for mentioning allergens on foods which we order online.
I think online food delivery is beneficial for some people. People who cannot cook by themselves. It is very beneficial service for them.	

## Conclusion

Food can either be medicine or poison for someone. Food allergy is a serious nutritional problem which is developing in India also. At present, there is no effective medical treatment. The labels are a good source of consumer education and assist them to choose right food and food ingredients. Surprisingly, even though such epidemiological information probably won't be adequate to change the policy, it is sufficient to persuade industry to make a move. However, the big hope for such allergic patients is hypoallergenic foods and a major breakthrough in this field is expected with advances in genetic engineering. Because of lack of data in adverse food reaction or FA in India it is quite difficult to evaluate the Genetically modified food allergenicity. Now it has become a necessity to gather accurate data on FA/ FI and anaphylaxis in harmonized manner, in order to eventually minimize risk and improve management . The labeling regulation related to food ingredient and allergens on loose packaged and online food delivery portal won't be proactive without an understanding of the genuine degree of FA. The food business operators and FSSAI may be increasingly responsive to this expanding influence because this is parallel to food safety and sanitation.

The limitations of the study include its small sample size, only digital population included; noticeable gender bias, with a male to female ratio of 11:9; and the lack of confirmatory food allergy tests.

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