

Consumer Behavior Analysis in Various NDDS (New Drug Delivery System)

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Introduction

Novel Drug Delivery System. Novel Drug delivery System (NDDS) refers to the approaches, formulations, technologies, and systems for transporting a pharmaceutical compound in the body as needed to safely achieve its desired therapeutic effects.

It is a combination of advance techniques and new dosage forms which are far better than conventional dosage forms. Some advantages of novel drug delivery systems are: optimum dosing at the right time and right location, efficient use of expensive drugs, reduction in production cost, beneficial to patients, and improved comfort and standard of living.

Examples of NDDS- Examples of controlled release mechanisms like transdermal patches, oral extended release, and implantable devices are provided. Targeted systems discussed include liposomes, nanoparticles, and monoclonal antibodies.

Drugs have various routes through which they can be introduced into the body, they include but are not limited to the oral route of administration, buccal and sublingual routes of administration, nasal and ophthalmic, transdermal and subcutaneous, anal and transvaginal and intravesical. The components of the drug account for its physiochemical properties and are responsible for the changes it influences in the body system when taken.

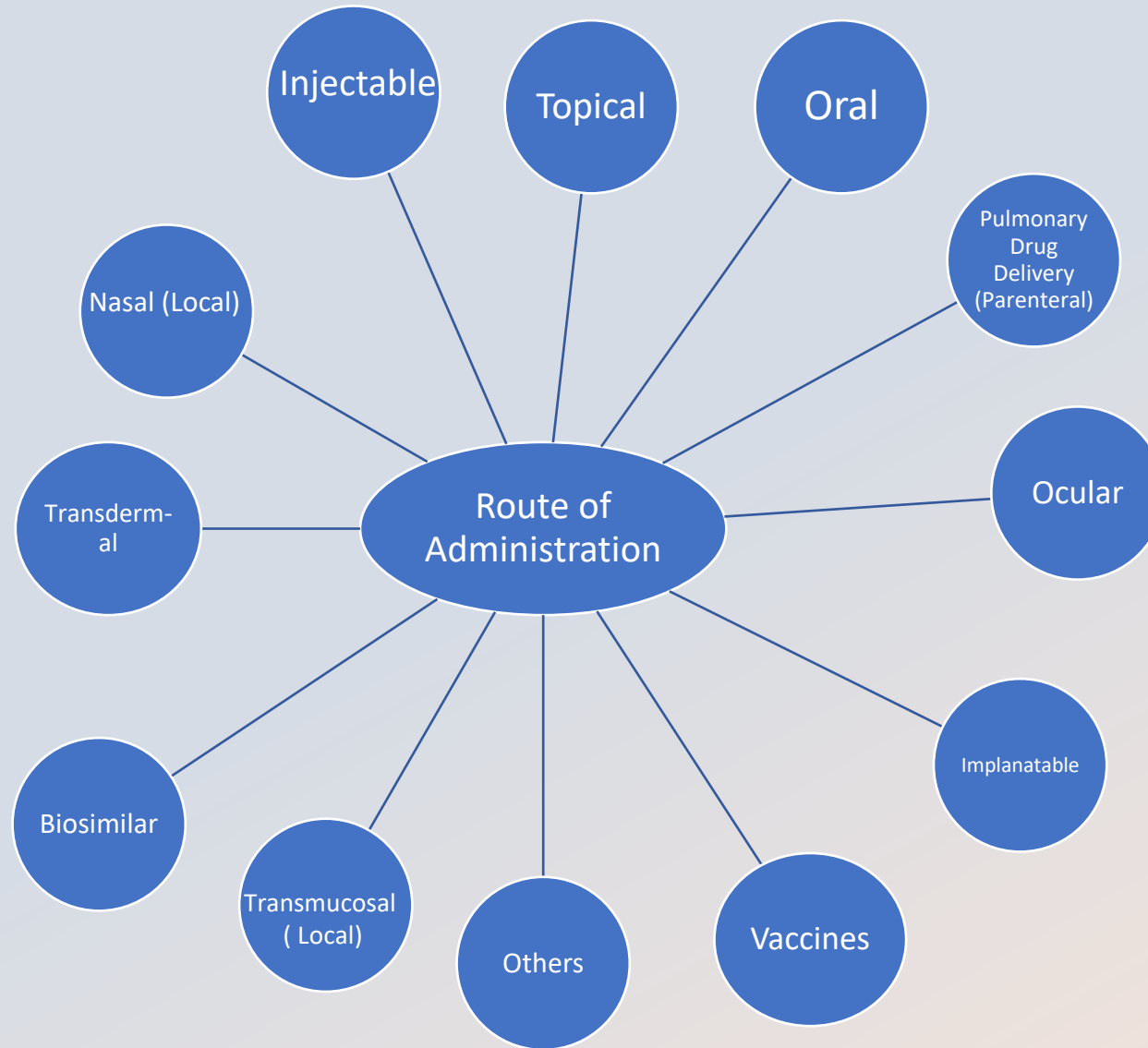
Advantages of NDDS-

- Decrease dosing frequency.
- Reduced rate of rise of drug concentration in blood.
- Sustained and consistent blood level within the therapeutic window.
- Enhanced bioavailability.
- To achieve targeted drug release.
- Reduced side effects.
- Improved patient compliance.

Disadvantages of NDDS-

- Rapid clearance of targeted systems.
- Immune reactions against intravenous administered carrier systems.
- Insufficient localization of targeted systems into tumour cells.
- Diffusion and redistribution of released drugs.

Route of Administration



Objective of The Study

To assess the challenges include in Novel Drug Delivery System and to process reduced dosage adjustments, stability issues and delayed drug action.

To identify and categorize different types of Novel Drug Delivery Systems (NDDS) available in the market.

To study the factors influencing consumer preferences and acceptance of NDDS, including convenience, efficacy, safety, and cost.

To evaluate the role of healthcare professionals in influencing consumer choices and adoption of NDDS.

To recommend strategies for the healthcare providers on how to improve consumer acceptance and uptake of NDDS.

Methodology Adopted

- ❑ Data were collected from various healthcare professionals like cardiologists, diabetologists and consultant physicians by collecting responses to survey questionnaires.
- ❑ Literature review, Journals
- ❑ Primary data collection- Google forms
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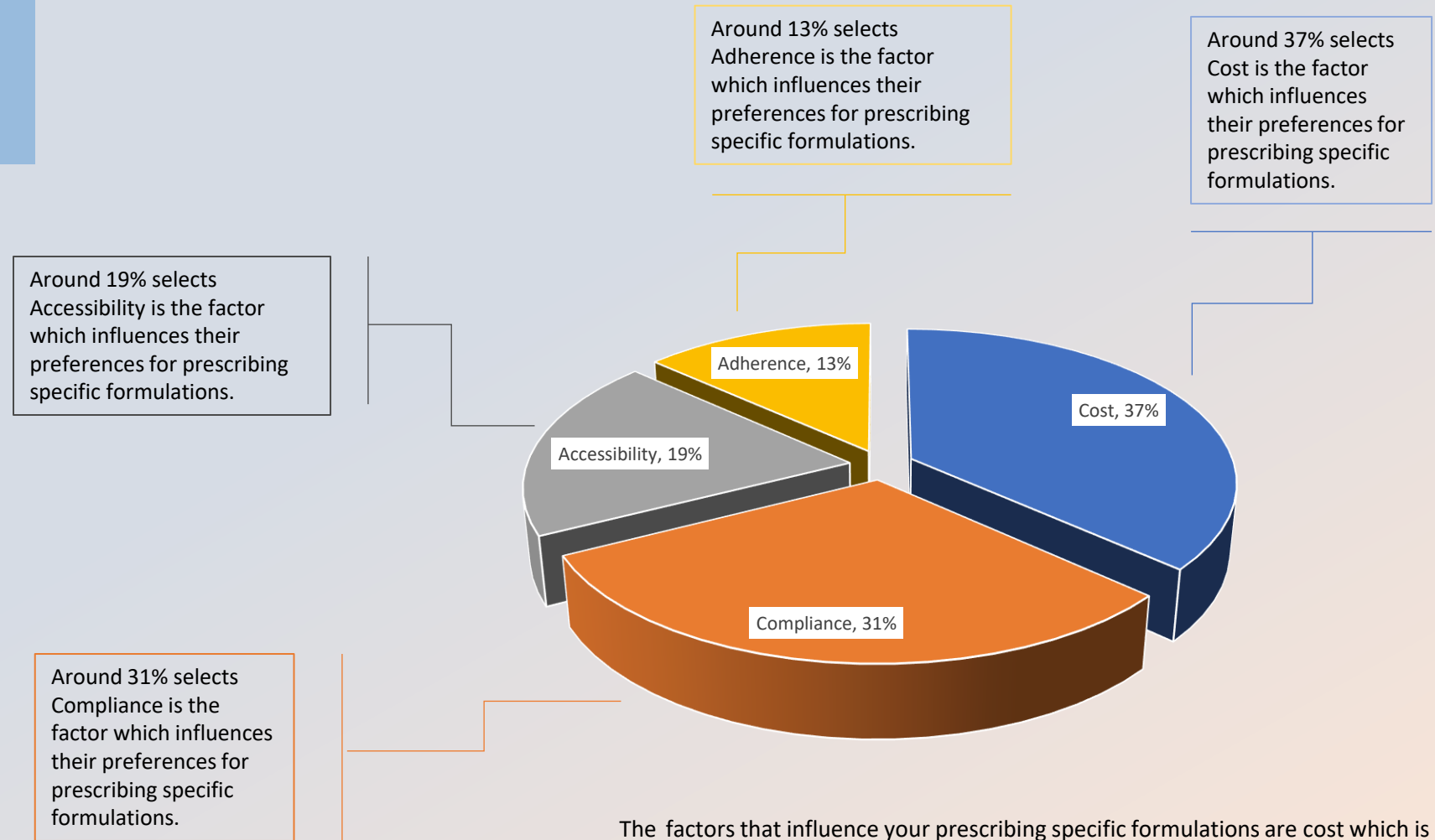
Results

51 healthcare professionals have participated in this survey, from which 89% were M.D. Medicine, and rest are Cardiologists, Endo, ENT. Any survey with at least one completed question was deemed an effort. Every survey attempt was taken into account during analysis. The physicians were exclusively from Ahmedabad.

Survey Responses

Q1. Rate the factors that influences your preferences for prescribing specific formulation?

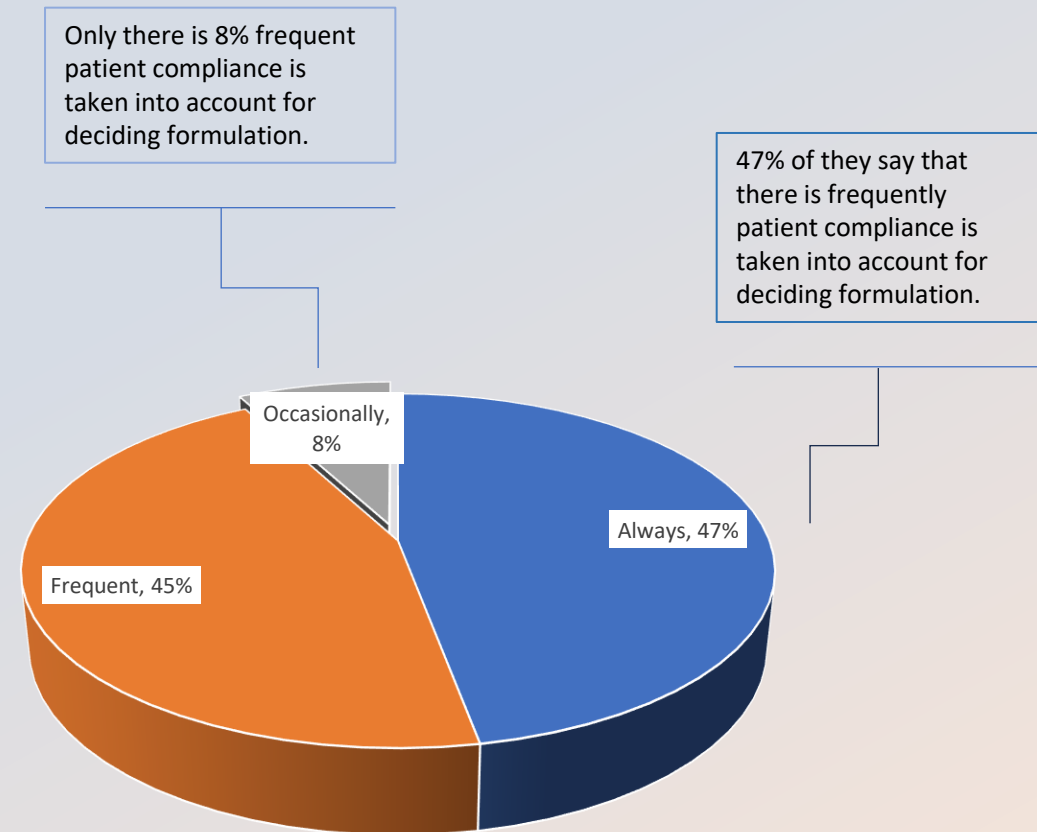
- Compliance
- Cost
- Adherence
- Accessibility



The factors that influence your prescribing specific formulations are cost which is 37% followed by compliance 31% than accessibility 19% and adherence is only 13%.

Q2. How frequent patient compliance is taken into account for deciding formulation? (Select One)

- Always
- Frequent
- Occasionally
- Rarely



Only there is 8% frequent patient compliance is taken into account for deciding formulation.

47% of they say that there is frequently patient compliance is taken into account for deciding formulation.

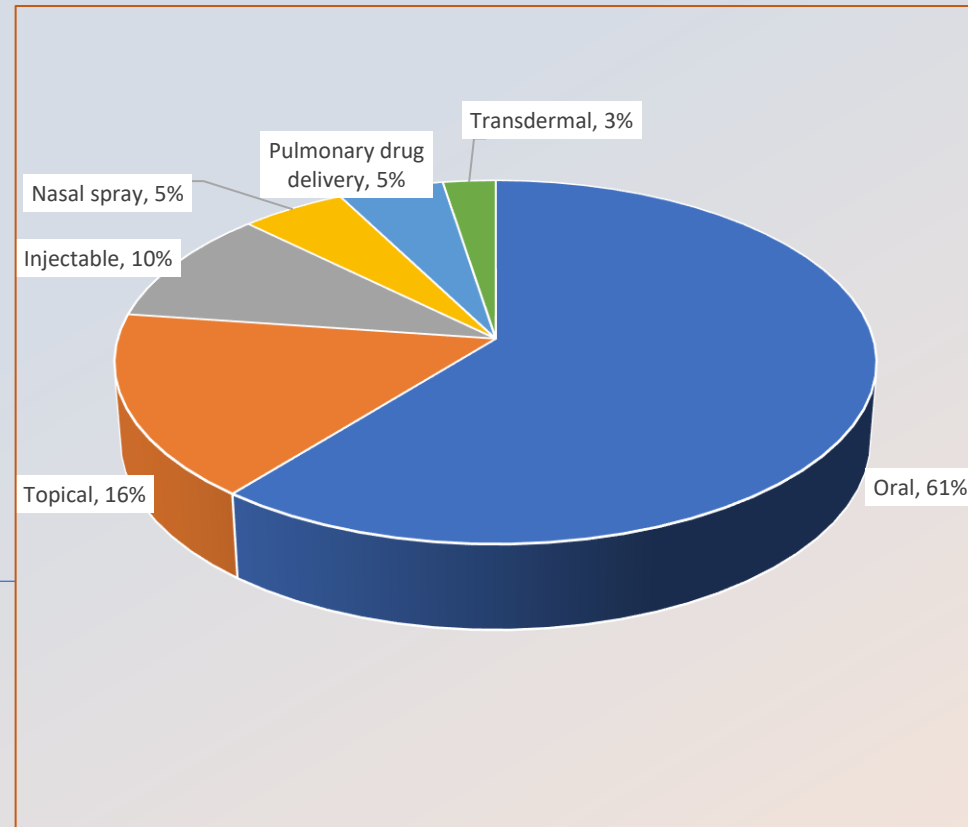
45% of Doctor's says that repeatedly or frequently patient compliance is taken into account for deciding formulation.

Always there is frequent compliance which is 47%, than frequently it is 45% and occasionally it is 8%.

Q3. Which formulation, in your experience tends to have better patient adherence?

- Oral
- Injectable
- Nasal Spray
- Topical
- Pulmonary Drug Delivery
- Transdermal

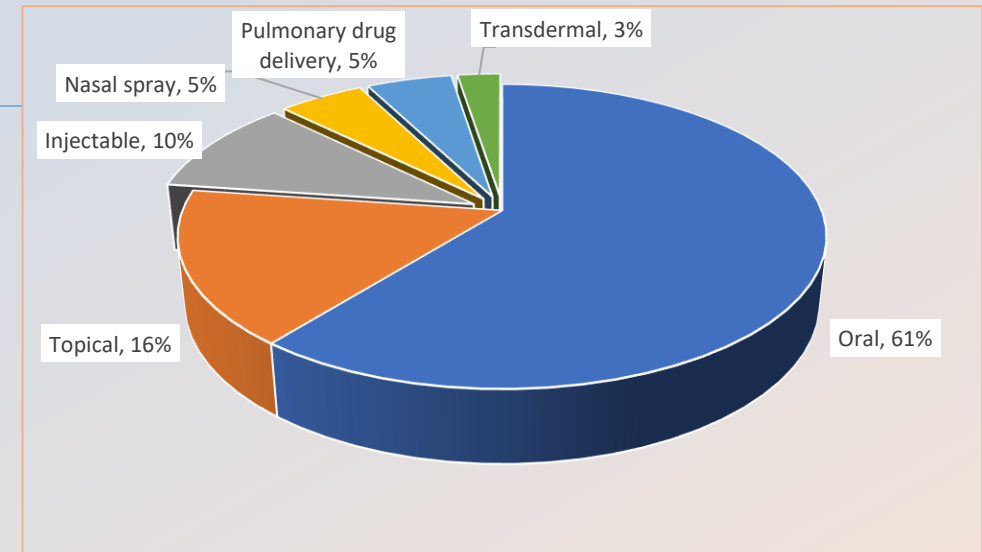
According to the doctors, Oral formulation have 61% of better patient adherence followed by topical which is 16%, Injectable is 10%, Nasal spray is 5%, Pulmonary Drug Delivery 5% and lastly Transdermal which 3% is very less patient adherence.



Q4. Regarding adherence & compliance of usage, patient prefer which of the formulations?

- Oral
- Injectable
- Nasal Spray
- Topical
- Pulmonary Drug Delivery
- Transdermal

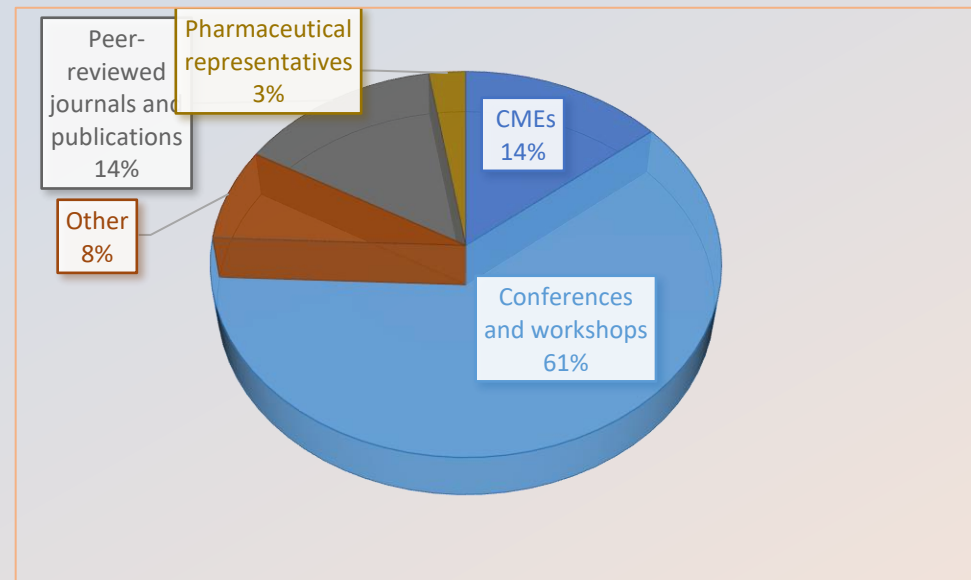
Regarding adherence and compliance of usage, patient prefer Oral which is 61%, Topical (16%), Injectable (10%), Nasal Spray (5%), Pulmonary drug delivery (5%), Transdermal (3%).



Q5. In order to help your patients how do you stay up-to-date with the latest developments in NDDS?

- Conferences and Workshops
- CMEs
- Peer- reviewed journals and publications
- Pharmaceutical representatives.

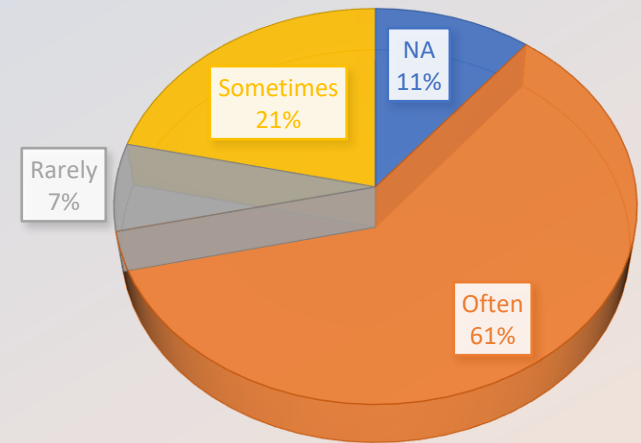
With latest developments, 61% of doctors are of the opinion that Conferences and workshops can help patients to stay up-to-date. 14% of them say about CMEs and Peer- reviewed journals and publications, other's are 8% and Pharmaceuticals reps are 3%.



Q6. How often do you think NDDS are in improving patient outcomes? (Rate from 1 to 5)

- Often
- Sometimes
- Rarely

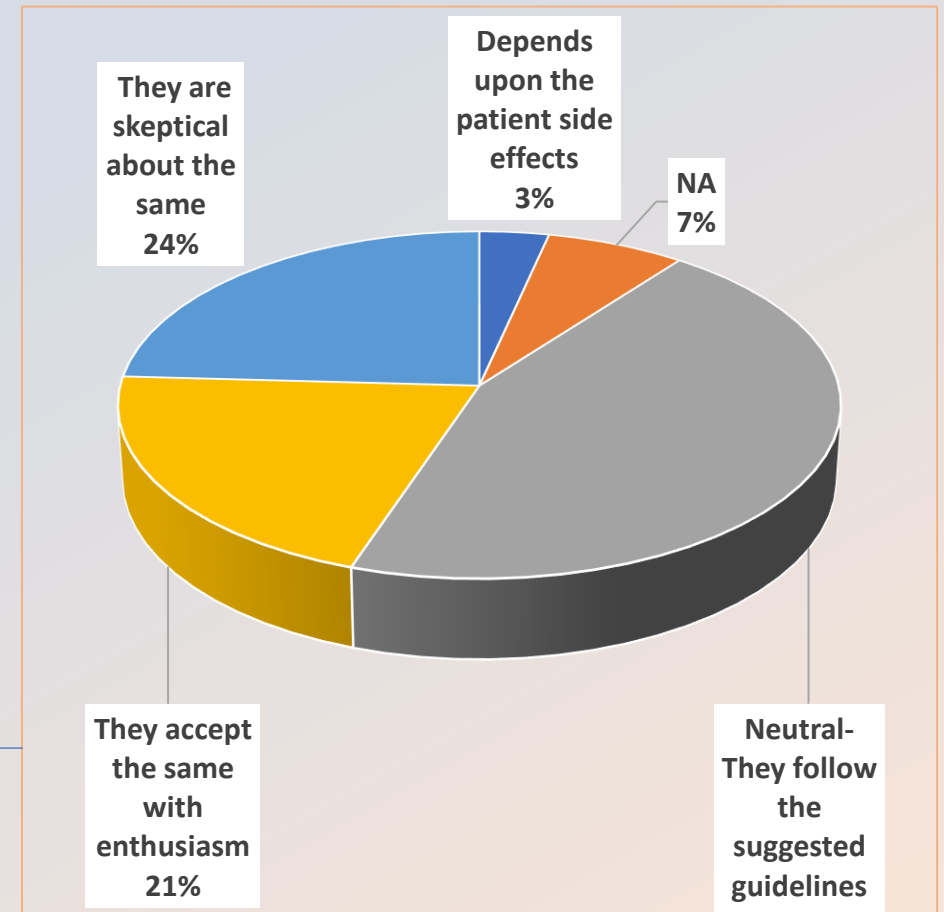
NDDS are in improving patient outcomes which is 61% Often, sometimes it is 21%, Rarely it is 7% and rest is NA which is 11%.



Q7. How do patients generally respond when you recommend a drug which is used as NDDS?

- Neutral- They follow the suggested guidelines
- They accept the same with enthusiasm.
- They are skeptical about the same, they have doubt regarding the same.

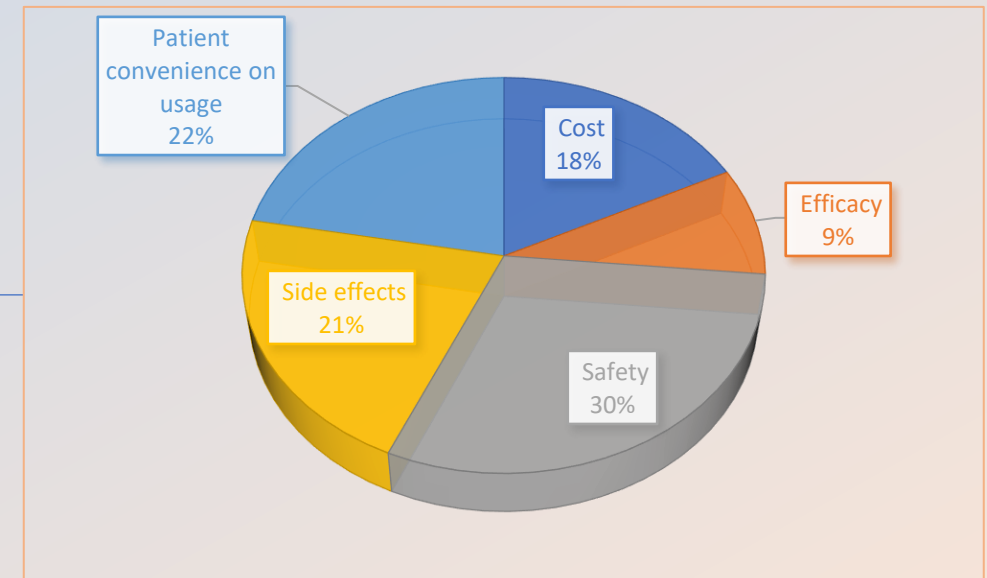
Patients generally respond when they recommend a NDDS drug, 45% of patients are Neutral- They follow the suggested guidelines, 24% are Skeptical about the same, 21% accept the same with enthusiasm, 3% depends upon the patients side effects and 7% are NA.



Q8. What are the common concerns patients express about NDDS?

- Patient convenience on usage.
- Cost
- Efficacy
- Safety
- Side effects

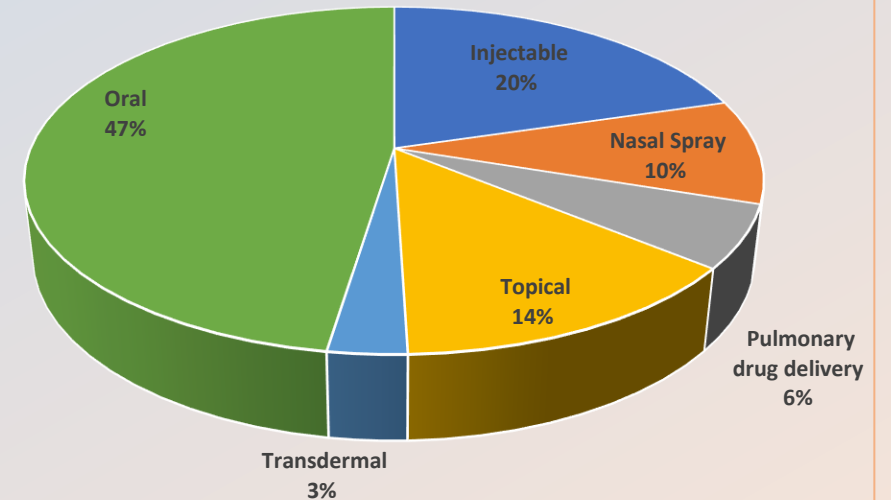
Common concerns which patient express about NDDS are- Safety which is 30%, Patient convenience on usage is 22%, side effects is 21%, cost is 18% and efficacy is 9%.



Q9. Which of the below NDDS are preferred by you as a consultant ?

- Oral
- Injectable
- Nasal spray
- Topical
- Pulmonary drug delivery
- Transdermal

NDDS which are mostly preferred by doctors are oral which is 47%, Injectable which is 20%, Topical which is 14%, Nasal spray is 10% and Pulmonary drug delivery is 6%.



Q10. Can you describe about the molecule and therapies of NDDS?

1. Chronic Obstructive Pulmonary Disease- Fluticasone, Formoterol + Beclomethasone
Emeset Intravenous Injection, Pantadoc Tablets- Peptic Ulcer disease
Glucerta sm- Blood sugar levels
Zifi Tablets- To treat Urinary Tract Infections.
3. Dapa + Metformin- To lower sugar productions in the liver.
Telmisartan- To treat high blood pressure (Hypertension).
4. Pantaprozole- Laryngopharangeal Reflux (LR), stomach pain, Vomiting, fever.
Ondansetron- Blocks the action the action of nausea and vomiting.
5. Ibuprofen- NSAID reduce fever, heqadache, toothache, back pain, arthiritis, menstrual cramps.
Zolpidem- Used in adults to treat insomnia.
6. Bendroflumethiazide- Used to treat high blood pressure.
7. Bronchodilators- Nasal sprays , Nebulizers, Pressurized metered-dose inhalers.
8. Topical- Soframycin, Neomycin, Diclogel.
9. Intravenous, Intramuscular, Subcutaneous Injections depends on patient illness.

Questions ?

Thank You!