

Assessing the intention of healthcare providers to adopt biosimilars using the theory of planned behavior

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It has been observed that spending on biological drugs has increased significantly in the United States (1). Around \$2.0 billion was spent on biologic agents, nonfederal hospital costs and three of the top five most expensive drugs. Biological medications have also enhanced the quality of life and altered the progression of several life-threatening diseases or conditions (2). However, many reasons prevent the use of biological medicines, including the high manufacturing cost. Biological drugs are more expensive than conventional drugs (3); many patients cannot afford those (4). Recently, biosimilars have been offered as cost-effective and cost-saving alternatives (5). Nevertheless, studies have found that many healthcare providers have different perceptions that result in biosimilars not being used for their patients. Most physicians prefer originator products for biologic-naïve patients and hesitate to switch from biologics to biosimilars.

Aims: 1) To investigate the association between the sociodemographic characteristics and psycho-social behavioral attributes (attitude, subjective norm and perceived behavioral control) on healthcare's intention (6) [Figure 1]. 2) To explore the healthcare physician's intentions towards prescribing biosimilars among the US-South Florida.



Figure 1. TPB model in predicting intention toward biosimilars selection and use.

Methodology: A quantitative survey based on the theory of planned behavior was developed and electronically distributed to 17,311 licensed physicians in south Florida.

Findings: The total responses were 263 (high intentions: 134 and low intentions: 129) and there were significant associations between years of practice and age with intentions towards biosimilars (Table 1). Also, there were significant associations between intentions and behavioral beliefs, normative beliefs, attitudes and subjective norms (Table 2).

Conclusion: This study's innovation is that it applies the Theory of Planned Behavior to investigate intentions toward behavior. This will shed light on the barriers and challenges that prevent biosimilar adoption, which will result in cost savings and increased patient access.

| | | Total n=263 | High intentions n=134 | Low intentions n=129 | P-value |
|------------------------------|--|----------------|-----------------------------|----------------------------|---------|
| Gender | Male | 187(71.4%) | 96 (72.2%) | 91 (70.5%) | .770 |
| | Female | 75 (28.6%) | 37 (27.8%) | 38 (29.5%) | |
| Age | 25-30 | 6 (2.3%) | 3 (2.2%) | 3 (2.3%) | .823 |
| | 31-35 | 54 (20.5%) | 23 (17.2) | 31 (24.4%) | |
| | 36-41 | 37 (14.1%) | 15 (11.2%) | 22 (17.1%) | |
| | 42-50 | 42(16.0%) | 21 (15.7%) | 21(16.3%) | |
| | 51-60 | 46(17.5%) | 25 (18.7%) | 21 (16.3%) | |
| | >=61 | 78 (29.7%) | 47 (35.1%) | 31 (24.0%) | |
| Ethnicity | Asian Asian American, Pacific Islander | 45 (17.8%) | 20 (15.5%) | 25 (20.2%) | .749 |
| | Black, African American | 6 (2.4%) | 5 (3.9%) | 1 (0.8%) | |
| | Hispanic, Latino | 68 (26.9%) | 38 (29.5%) | 30 (24.2%) | |
| | White, Caucasian, Anglo American | 121(47.8%) | 58 (45.0%) | 63 (50.8%) | |
| | Other | 13 (5.1%) | 8 (6.2%) | 5 (4.0%) | |
| Profession rank | Residency | 10 (3.8%) | 4 (3.0%) | 6 (4.7%) | .997 |
| | Fellowship | 18(6.8%) | 10 (7.5%) | 8 (6.2%) | |
| | Specialist | 51 (19.4%) | 27 (20.1%) | 24 (18.6%) | |
| | Attending | 175(66.5%) | 89 (66.4%) | 86 (66.7%) | |
| | Other | 9 (3.4%) | 4 (3.0%) | 5 (3.9%) | |
| | Federal | 40(15.2%) | 17 (12.7%) | 23 (17.8%) | |
| Sec tors | Private | 199 (75.7%) | 108 (80.6%) | 91 (70.5%) | .970 |
| | Other | 24 (9.1%) | 9 (6.7%) | 15 (11.6%) | |
| | | 50 (19.0%) | 20 (14.9%) | 30 (23.3%) | |
| Year of Pract ice/Y | <5 | 50 (20.9%) | 24 (17.9%) | 31 (24.0%) | .019 |
| | 5-10 | 55 (20.9%) | 24 (17.9%) | 31 (24.0%) | |
| | >=11 | 158 (60%) | 90 (67.2%) | 68 (52.7%) | |
| State county | Florida- Broward | 89 (35.2%) | 50 (38.8%) | 39 (31.5%) | .322 |
| | Florida- Miami-Dade | 121 (47.8%) | 58 (45.0%) | 63 (50.8%) | |
| | Florida-Lee | 25 (9.9%) | 13 (10.1%) | 12 (9.7%) | |
| | Florida-Collier | 18 (7.1%) | 8(6.2%) | 10(8.1%) | |

Table 1. Baseline demographic characteristics of study participants.

| | Total (high-low) | High intentions Mean (SD) | Low intentions Mean (SD) | P-value |
|--------------------|------------------|------------------------------|-----------------------------|---------|
| Behavioral beliefs | 40.1 (8.93) | 44.6 (6.69) | 35.5 (8.57) | <.001 |
| Normative beliefs | 15.3 (3.17) | 16.3 (2.99) | 14.3 (3.06) | <.001 |
| Control beliefs | 25.0 (6.13) | 28.1 (4.94) | 21.8 (5.56) | <.001 |

Table 2. The associations between the prescribers' beliefs and the outcome (intentions).

Biography

Mohammed A. Alqahtani has done B. Pharm, M.S. in [Pharmacoeconomics](#), PhD Candidate in Social and Administrative Pharmacy/Consultant and expert in regulatory affairs for pharmaceutical products in the US, Europe, Middle East and North Africa (MENA) region.

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