

Pakistani Physicians: Exploring the Paradox of Public Service Motivation and User Orientation

Rizwan Shabbir¹, Muhammad Abrar¹, Mohsin Bashir¹, Sharjeel Saleem¹, Arfan Ali^{2*},
Fasih Asghar²

¹Lyallpur Business School, GC University, Faisalabad, Pakistan; ²Department of Public Administration, GC University, Faisalabad, Pakistan

*E-mail: arfanaligcuf@gmail.com

Received for publication: 16 April 2019.

Accepted for publication: 26 June 2019.

Abstract

The desire to support single beneficiary of public services (user orientation) has divergence with desire to support society at large, both motivations compete in same dimensional space. Extra ordinary usage of broad spectrum antibiotics creates negative externalities for society as large because excessive use of antibiotics creates resistance among bacteria that become hard and expensive to cure. There exists large gap to comprehend difference between discrete choices of both motivations of public service. The antibiotics prescriptions behavior of Pakistani general physicians (Doctors) has been analyzed in this study to investigate the association between Public Service Motivation and user orientation with this behavior. 250 Pakistani general practitioners were chosen in both private and public sector to investigate the PSM relationship with user orientation. The findings indicate that there is different association between Public Service Motivation and user orientation regarding prescription behavior of the general physicians (Doctors). This entails that it is necessary to investigate this behavior difference to know whether the public service provider is fascinated towards helping single beneficiary or be concerned more about society.

Keywords: Public Service Motivation, User orientation, public sector doctors

Introduction

In this age of highly advanced medical treatments it is deplorable to know that some of common diseases for example pneumonia, food poisoning and sexually transmitted diseases are consequential of bacteria that have gained antibiotic resistance by injudicious use of antibacterial drugs. All drugs are not truly effective on some bacteria, because they change their genes after some generations to become mutant and some particular antibiotic become ineffective to kill them, these bacteria also exchange genes between species to become mutant and develop resistance from particular antibiotics (Chang et al., 2015). Some cases have been witnessed that after some time the antibacterial drugs have no effect on bacteria which were used by patients in past. In reaction more powerful drugs are used by doctors that have their own side effects, causing dangerous conditions such as kidney damage. Moreover, some of the bacteria contain genes that mutate and develop resistance from latest drugs (WHO, 2016). The medical practitioners at John Hopkins Bloomberg School of Public Health have observed that they are witnessing the increase in antibacterial resistance from top of the chart antibiotic drugs that are last weapon of the practitioners to save patients against attack of deadly diseases for example *colistin* and *carbapenem* class. The scientists have also learned that the genes that provide resistance against powerful drugs are being exchanged by different species of the bacteria that make the condition most bothersome that can exchange genes and become mutant was

found in China in 2015 against the drug *colistin* that is last line of defense against these type of bacteria gene and such bacteria has also been spotted in USA at different times (Draper et al., 2015).

In a country like Pakistan where sophisticated medical treatment is scarce, it is necessary to control this problem unless it is too late and too expensive to overcome. Already, Pakistan does not spend enough money on health therefore it cannot face the plight of antibiotic resistance. This study provides an understanding regarding the phenomenon of Public Service Motivation of general physicians (Doctors) to provide recommendations for policy makers of Pakistan to develop programs to control antibiotic resistance in Pakistan.

Conceptualization of Public Service Motivation

Yanti, (2012) argued that altruistic behavior which drives human beings to serve others than fulfilling own interests is more common in employees of public service organizations as compared with individuals employed in private sector organizations. Public Service Motivation is aligned with other theories of motivation that have basis of theories proposed by Perry & Porter, (1982) defined as “a force that energize direct and sustain behavior” there is another definition for these altruistic motivations that entail to the passion ,coarse and perseverance of endeavor to achieve the target “ described by (Robbins ,2004) .

Perry and Wise (1990, 2004) explained that impetus for helping the society should be considered the difference in psychological fulfillment of the person, this shows that it is the ultimate desire of a person to fulfill the obligations towards society by contributing that is actually person’s accomplishment of personal attainment. Perry & Wise, (1990) postulated PSM basically a person’s inability to stop own temptation to serve the interests of public institutions. After this the definition was improved by Wise (2000) by stating that the person’s public service motivation is desire to work for the betterment of the society and aspiring to improve standard of living of the humanity. Public Service Motivation has been euphemized by PSM theory as some people have tendency for responding to phylogocial incentives to serve public institutions.

Perry & Wise (1990) formulated another definition that physiological gap push individuals to fulfill their commitments towards society and they want some meaningful purpose in their life to serve the people, neighborhood and do some good deeds (Brewer & Selden, 1998). Resultantly the theory corresponds to the ability of individual who has higher PSM has more tendency to join public sector job to contribute one’s desire to serve public. This opportunity makes individuals better about themselves giving more internal satisfaction finding the incentives of psychological rewards that cannot be easily calculated in monetary terms. Although most of the studies verify these claims but researchers are still skeptical and need more rigorous studies applying multidimensional research designs (Wright, 2008).

Evolution of Public Service Motivation

PSM scale has been developed by Perry, (1996) relying on statements adopted from existing literature by analyzing comprehensively. He has positioned these theoretical rational explanations into practical normative scale to measure PSM. At the start of his work the scale consists of six dimensions with forty questions that dimensions are elaborated below:

- 1) Attraction to public policy making
- 2) Self sacrifice
- 3) Compassion
- 4) Commitment to the public interest
- 5) Social justice
- 6) Civic duty

The statements related normative part relates to inspiration for public policy, rational motive, commitment to public interest, social justice and civic justice while empathy was regarded as normative category (Yanti, 2012; Perry, 1996). However the dimension related to self sacrifice is broad dimension and cannot fit exactly in motivation for PSM exactly but PSM construct requires it that's why it was maintained (Yanti, 2012; Perry, 1996). After these constructs were developed and studies were done with them being tested by confirmatory factor analysis (CFA) the constructs were revised by Perry (1996) and reduced to 24 items scale left with only four dimensions that are:

- 1) Attraction to public policy
- 2) Compassion
- 3) Self-sacrifice
- 4) Commitment to public interest

Moreover these constructs were accepted as consistent with further studies that confirmed their validity (Perry, 1997). The coefficient alpha value was 0.77 for Public Service Motivation. Moreover internal consistency has been observed by these constructs to be called acceptable. The coefficient alpha values were 0.77 for Attraction to Public Policy, 0.69 for Public Interest, 0.72 for Compassion and 0.74 for Self-Sacrifice respectively.

Public Values and PSM

It has been elaborated in introduction to PSM by Perry and Wise's (1990) that is also congruent to observation of Elmer Staas (1998) that ethics and values of the employees working in public sector organizations are shaped by pooled beliefs that is different combination of values that are resultant of organizational policies and decisions taken by policy makers (Rayner et al., 2010). It has been the center of research in current times to comprehend the difference between public values and Public Service Motivation, the main deliberation is given to fact that Public Service Motivation is very broad based theory that cannot be confined to sectors while the public values can be constrained inside the organization that limits its broader viability (Horton, 2008; Rayner et al., 2010).

It is pertinent to mention that it is necessary to first explain the reasons for accepting the fact that PSM and user orientation can be taken as determinants of behavior of the individual before discussing the different outcomes of PSM and user orientation on behavior of person's behavior. PSM motivated personalities intend to support others and benefit the society at large provided their jobs give them opportunity to do so they serve the society by satisfying their psychological needs. A person creates one's own values according to the level of Public Service Motivation that serves as stimuli for behavior pattern of the person, it also serves as secondary purpose by providing satisfaction to the individual that life has meaning for that reason his behavior drives himself to do some extra work for the benefit of the society to give something in return (Perry and Wise 1990). Ritz (2009) contends that this is explanation for many studies that found there is relationship between PSM and performance, PSM and user behavior. This behavior pattern can be easily found in studies executed by (Andersen and Serritzlew, 2012) on physiotherapists of Denmark concluded that obliging the society by contributing with helping public is linked with high Public Service motivation. In this thesis the behavior was identified by the priorities level of the physiotherapists as they were treating the disabled patients that are regarded as economically less beneficially than able customers but physiotherapists consumed more time towards disabled patients for their satisfaction for public Service motivation. The less time is taken by able patients and they pay more but the disabled patients were given more time and care. This patient group is taken as group equaling to overall society. The investigators managed to differentiate that the physiotherapists who have more level of Public Service Motivation registered more number of disabled patients in their respective clinics compared with the physiotherapists who have low level of Public Service Motivation registered less patients with disabilities (Andersen and Serritzlew, 2012). At the same time it can be argued that Public Service Mo-

tivation have different outcome of behavior the same can be associated with reciprocity that the individual who is dispensing is thinking the same that one is facilitating the single person of benefiting the society at large . Thus we developed the related hypothesis.

Hypothesis 1: There is positive effect of PSM on behavior of individual who is responsible for providing public service with impetus to benefit public.

Hypothesis 2: There is positive effect of user orientation on behavior of individual who is responsible for providing public service with impetus to help single beneficiary.

Our expectation asserts Public Service Motivation and user orientation have same outcome of the respective behavior if both public at large and single beneficiary have same level of wellbeing. For example if a student gets help from teacher to improve grades then this behavior is regarded as positive externality of that action because its benefiting the student but it has negative consequences for society at a large . This type of scenario creates substitution effect in which repercussions of behavior can be witnessed. In this regard it becomes necessary to investigate the repercussions of PSM and user orientation on the behavior of individuals who are responsible for providing public service.

Different scenarios have different demand for contemplation to take decisions, same is the case for individuals who are responsible to provide public services, and their decisions can have profound effect on the repercussions that may be beneficial for one group but can have negative consequences for other group. These situations can arise due to competition of time and space for same service hence occur the dogma of exclusiveness where one beneficiary tends to utilize resources of other for example utilizing time of health expert , these types of situations arise when trying to help one group harms the other one . Next is explained that how our research design is designed to comprehend the behavior repercussion of user orientation and Public Service Motivation.

Methodology

Research Design

This paper consists of study conducted by recording the opinion of 250 Pakistani general practitioners in both private and public sector to investigate the PSM relationship with user orientation, the behavior of general practitioners regarding prescribing the anti-biotic drugs was central point of the research. As it is generally known in Pakistan that general physicians (Doctors) are paid fixed amount of money to see per patient, the public physicians are paid fixed salary while the private clinics pay fix salary albeit the physicians who run their clinic charge fee to each patient but that is also fixed amount of money as they are not paid separately for prescribing each of the drugs. For that reasons our study revolved around investigating the PSM and user orientation in the setting where delivery of service is dispensed to public where both motivations can be observed i.e. Public Service Motivation along with user orientation referred as of the individual to support society at large or provide benefits to single individual. Alternately there has been found strong association between prescribing injudicious antibiotics with the increase in the resistance of the bacteria to the drugs that makes the sense that society should use the anti-biotic drugs with great concern and general practitioners who are important players in this equation must act accordingly (Goossens et al. 2005). The adjacent consequence of the increase in resistance of antibiotics is that the bacteria become resistant towards the drugs and cause illness that is almost impossible to cure (Costelloe et al. 2010).

Contrary to this deliberation there is another contemplation that the single patient who comes to general physician for treatment of the disease to get antibiotics to improve the status of one's health. Therefore it is pertinent to mention that the general physician has to take two important decisions that repel the effect of each other that either she should prescribe the anti-biotic or restraint

from it. This predicament that there is tussle between the inclination to support the society at large or protect the choices of single person is more complicated than general physician first decision to whether to restraint from prescribing antibiotics or not .

It can be specified that there are two groups of antibiotics; that are narrow-spectrum and broad-spectrum. Narrow spectrum are antibiotics that target specific bacteria according to the disease and its related bugs while broad spectrum is antibiotic that target multiple types of bacteria , the antibiotic that can treat many bug related diseases . Although it is widely accepted that the society at large face consequences of using broad spectrum antibiotics however the general practitioners have to dig it more to find the exact type of antibiotics for the patient that is narrow-spectrum. To find out the exact type of narrow-spectrum antibiotic the general practitioner has to involve in practice of micro-diagnostics that is extra work which takes time. Whether a general physician goes for any antibiotic treatment the decision is required to be taken that either prescribe or not, if yes than what salt should be proposed for treatment. Research conducted by Wood et al. (2007) in UK on forty general practitioners found that practitioners of both motivations that are Public Service Motivation and user orientation respectively social responsibility was inspiration for behavior of the individual.

This behavior of the general physician substantiated by prospect that it was found by investigators that the reason the practitioners prescribing more antibiotics was that they did what best set of choices they have for patient. While the general practitioners who restricted themselves for prescribing more antibiotics were conscious about the society at large and think that there should be judicious use of antibiotics to control the antibiotic resistance (Wood et al., 2007).

In these conditions that injudicious use of antibiotic cause's danger to the society so there should be more utilization of narrow-spectrum antibiotics, these narrow-spectrum antibiotics are more desired by the human beings in comparison with broad-spectrum antibiotics. Hypothesis 1 states that fewer antibiotics will be prescribed by general physicians who have their PSM at higher scale and will treat their patients more by narrow-spectrum antibiotics. Contrary to that the antibiotics given to patient support the health of single person the hypothesis 2 states that more antibiotics will be administered by general physicians who tend to help single individual and have higher level of user orientation

Table 1 The results of testing hypotheses 1 and 2 for behavioral implications

Behavioral measures	Testable implication of hypothesis 1	Testable implication of hypothesis 2
GPs' number of antibiotic Prescriptions	General physicians at higher level of PSM prescribe less antibiotics than their peers with lower scale of PSM	General physicians at higher level of UO prescribe more antibiotics than peers with lower level of UO.
GPs' proportions of broad-spectrum antibiotic prescriptions	General physicians at higher level of PSM prescribe less broad –spectrum antibiotics than their peers with lower scale of PSM	

Contrarily we do not indisputably suppose that there is obvious association between broad-spectrum antibiotics and user orientation. Meanwhile it is also important that broad-spectrum antibiotic drugs are useful to treat many diseases caused by different bugs, this ability of broad -spectrum to treat various kinds of diseases becomes helpful in early initiation of the treatment of the individual before any specific treatment (Walsh, 2003). However if the antibiotic use is not judicious it will

create problem when disease related to narrow-spectrum antibiotics arise that will be challenging and detrimental the health of the patient (Hulscheret et al., 2010), this is done by the making the bacteria immune to certain drugs if problem arise in future. It is understood that the general practitioners have to contemplate on both considerations while treating the patient so no clear signs are expected from data related to more or less prescriptions of broad-spectrum antibiotics. Consideration is given to this assumption that's why the prescription behavior of general practitioners regarding antibiotics can be an interesting study for testing theoretical foundation of motivational theories that what is impetus for general physician that whether she prefers to help the society or support a single person.

Data

This study was completed by taking data from 250 Pakistani general practitioners (Doctors) from cities of Lahore and Faisalabad from both public and private hospital doctors, Doctors practicing at their personal clinic were also approached for data collection. The instrument was developed accordingly and doctors were personally reached out to fill the questionnaire to investigate the prescription behavior. The questionnaire also contained socioeconomic data related to the study.

Measures

Explanatory Variables

The multidimensional property of the Public Service Motivation construct has been discussed earlier (Perry, 1996). To measure this multidimensional construct Perry's (1996) 15-item scale was adopted (Jacobsen et al., 2014). All four dimensions of PSM can be covered by this instrument, namely 1) attraction to policy making, compassion, commitment to public interest and self sacrifice. To scale the items of latent variables 5-point likert scale has been used where coding 5 represents strongly agree and coding 1 represents strongly disagree. PSM was treated as a single construct that has characteristics of all four dimensions of Public Service Motivation. By following the recent arguments to investigate the characteristics of latent variables and how individual items converge around them CFA Confirmatory Factor Analysis was performed. Commitment to public interest, compassion, attraction to public policy making and self sacrifice are sub dimensions of Public Service Motivation.

Standardized factor loadings of each item converged around its latent respective variable. All loadings were significant else than two loadings, convergent validity was found to be satisfactory that ranges from 0.48-0.79. Moreover it has been indicated by model fit that the model is even-handed fit for our data. where $(\chi^2(67)= 124 \text{ } p < 0.10$, root mean square error of approximation = 0.06 while CPI comparative fit index is 0.974 (Schumacker and Lomax 2010) internal consistency have been found medium to high ranging from 0.54 to 0.9 and Jöreskog's rho ranging from 0.60 to 0.79.

Dependent Variables

To investigate the conduct of the general practitioner, prescription behavior was taken as dependent variable that has further two dimensions, one is total average number of antibiotic prescriptions per patient for each general practitioner and second the percentage of broad spectrum antibiotics from total antibiotic prescriptions by general practitioner.

Controls

The controls were added as characteristics of general practitioner, the properties of clinic and information about the locality of the clinic to investigate the association between prescription behavior of the general practitioner and Public Service Motivation. The personal characteristics of general practitioner were added as the existing studies indicates that there is association between prescription behavior and the age, experience and gender of the general practitioner and Public Service Motivation (Perry ,1997). It is noteworthy that all general practitioners (doctors) have same level of

education that is all are minimum MBBS in Pakistan so it is not required to control for education. Secondly I have controlled for the average number of patients that a general practitioner see in a day, that measure shows the workload on each general practitioner. More patients' means there is less time for general practitioner to contemplate on patients and materialize the concepts of PSM and user orientation. It also contemplates that not as much sufficient time is available for general practitioner to be micro-diagnostic activities. Four measures were used to scale this measure that are 1) percentage of male patients 2) percentage of children and adolescents that are children aged 3-19 years 3) percentage of female patients who can reproduce that is generally taken as age group 18-40 years and 4) percentage of elderly patient who are above 60 years of age. Average price of antibiotics prescribed by the general practitioner was also kept under consideration to investigate the price effect on the behavior related with some direct benefits to the general practitioner from the pharmacy companies in Pakistan. The above table illustrates the behavior of general physician regarding prescription of antibiotics per patient as a result of ordinary least squares regression. It is evident from table 2 that the general physicians who have higher value of Public Service Motivation will use smaller quantity antibiotics and they will try to use narrower-spectrum antibiotics for risk aversion of antibiotic resistance. While hypothesis 2 entails that general physician who is more attracted towards user orientation will prescribe more antibiotics in comparison with their lower user orientations peers.

The results of first dependent variable operationalization have been shown in table 2 that is the average number of prescriptions per average patients. These results validate our first hypothesis that large number of antibiotics to each patient will be given by general physicians who have higher level of user orientation. Moreover distinctly on average 0.482 more prescriptions were given to each patient by general physician who has highest level of user orientation compared with physician who has lower level of user orientation . It has been illustrated by findings that the individual is being benefited by the general physicians who are attracted towards user orientation. Moreover the individuals who have greater PSM tend to benefit the society at large that is illustrated by their negative PSM coefficient as a result they prescribe less antibiotics per patient. Even though at 0.1 level of significance the results are not significant. The behavior of general physicians suggests that they will tend to favor the society at large but as a result will create negative externality for the individual patients. This table also illustrates that there is positive relationship between proportion of older patient visiting the general physician and the price of prescriptions by the general physicians that are significant at 95 percent confidence interval. The remaining variables not mentioned in the table were although showing some change but were insignificant.

Table 2. The results of first dependent variable operationalization regression

Variable	Value
Public service motivation	-0.54
User orientation	0.482
Price of antibiotic	0.53
Proportion of elder Patients	0.15
Intercept	73
R ²	0.964
N	230
F	3.51

The results of second dependent variable operationalization regression have been shown in the above table; percentage of broad-spectrum antibiotics prescribed by each general physician.

The table 3 illustrates the second dependent variable operationalization ordinary least square results. These results validates our prospect that those general physicians who have higher Public Service Motivation will give less broad spectrum antibiotics than the general physicians who have less Public Service Motivation. Clustering standard errors to account for different modes of employment that is public or private hospitals for potential difference in job nature of the general physician, also the same trend is obtained by clustering price of subscription as the general physicians who prescribe more cost associated with their prescription is still negative and significant at confidence level of 95 percent, that implies that private hospital general physicians tend to prescribe more antibiotics in comparison with general physicians working in public hospitals. The results show that the general physicians who have high level of Public Service Motivation try to serve the society at large confirming hypothesis 1. There is very strong relationship between price level increase and broad-spectrum antibiotics. I have not tested hypothesis 2 because no association was found between user orientation and broad spectrum antibiotics because it is difficult to estimate the link. Finally the general physicians who have higher proportion of elder patients and children prescribe less broad-spectrum antibiotics.

Table 3 The second dependent variable operationalization ordinary least square results

Variable	Value
Public Service Motivation	-0.73
User orientation	0.7
Gender (male=1)	0.123
Nature of Employment	-0.16
Experience	-0.316
Elder Patients	-0.005
Price of antibiotic	0.93
Intercept	76
R2	0.963
N	230
F	4.72

Discussion and Conclusion

This has been illustrated by the analysis of our study that there is behavior prospective arrangement between different motivation types regarding public service motivation, user orientation and prescription behavior of Pakistani general physicians (Doctors). This phenomenon related to behavior of general physician makes it appropriate predicament regarding prescription behavior of the general physician that is trapped between the decisions of supporting the society at large or help a single individual. In this dissertation two measures were combined to investigate the behavior of prescription of Pakistani general physicians (Doctors), our interpretation is that the general physicians who have high level of public service motivation try to support the society at large while the general physicians who have high value of user orientation try to support the individual person.

Moreover it can also be attributed towards the difference between private and public hospitals as private hospital and individual clinics are more concerned about their reputation in Pakistan to treat patients in early than can also be reason for prescribing more antibiotics while public hospitals

have no such concerns. Furthermore the private and individual clinics prescribe more expensive antibiotics while public hospital general physicians refrain from such practice, this can be interpreted as the private clinics may be getting some incentives from pharmaceutical companies although more rigorous study is needed to investigate the direct effect. The study also confirms the claim that public service motivation is not only attributed to public institutions but it can be present in private institutions and individuals (Kjeldsen, 2012).

It is also relatable to mention that in this dissertation I have attempted to demonstrate that it is that there is probably contradiction regarding prescription behavior of the general physicians (Doctors) related to Public Service Motivation and user orientation. However different interpretation can be derived from this phenomenon whether a general physician wants to do good to society as a whole or benefit a single individual according to his/her own understanding of public service motivation. It can be specified that the main difference revolves around intention of general physician to treat patients to bring them to well being status of health for this they resort to prescribe more antibiotics than is practiced by general physician with higher user orientation or prescribing narrow-spectrum less antibiotics to treat patients a behavior of highly public Service motivated general physician to check bugs to become resistant to drugs. In general both types of behaviors are derived from pro-social motivation that should be priority of every individual related to provision of public service.

Limitations

It is necessary to first discuss the limitations of the study before deliberating about the contribution of our study in theoretical and practical knowledge. The most prominent limitation for this type of study is its cross sectional design that bound the investigators to represent fundamental results from the motivation of the individual and associated behavior (Wright, 2008). This is the foremost challenge in the public service motivation literature however in recent studies some researchers have tried to overcome this limitation (Bellé, 2013). In our opinion it is also noteworthy that the general physicians who exhibit higher public service motivation can be more conscious and prescribe less broad spectrum antibiotics because in public hospitals the number of patients visiting is higher that can give more diagnostic experience to the practitioners in comparison with private hospitals, more diagnostic experience increase accuracy of diagnostics (Wright & Grant, 2010). Although the education level of general practitioners (Doctors) is almost same but there is wide disparity regarding fee of the private hospitals that's why further research should focus on testing the difference in fee structure of different clinics. It can also be generalized that the general physicians who care more about individual patient tend to establish their own clinic for ease of becoming only manager of their organization taking decisions themselves avoiding red tape of bureaucratic organizations.

Recommendations

Conclusively our findings can provide material proposition for public policy makers and more specifically for managers in the medical and health institutes. The public service providers have to decide between best set of choice available to them for delivery of public service therefore it is obligatory to differentiate between these two types of behaviors that are Public Service motivation and user orientation especially in those settings where the decisions of individuals responsible to dispense public service have negative externalities for other group, we have beneficiary and losers at the same time. The regulations should be invoked after thorough planning to mask the negative effect of decisions that have different implications for single beneficiary and society over all respectively (Hoekveld & Needham, 2013). This state of affairs can be observed in the city transportation ex-

pansion projects where the planners have to deliberate of the loss of individuals whose homes are to be destroyed in the process or while declaring the natural habitat of coastlines and coral reefs preserved area the policy makers have to weight different options of the beneficiaries (Campbell and Marshall, 1998).

The competing interests between different social groups can also occur in normal distribution research based policy where the public service provider have to decide who should be the beneficiary of the service on expense of others . the can be generalized as public-property dilemma, abandoning exclusiveness can be devastating for the society at large. These prepositions are in line with health sector where the decisions to whether give cancer patients expensive medicine or not.

Our findings contemplate that Public Service Motivation can play pivotal role while constituting the antibiotic reduction programs. There is strong association between use of broad-spectrum antibiotics and increase in the resistance of bacteria and it has been suggested by our results that the general physicians (Doctors) with high level of Public Service Motivation resort to less prescriptions of broad-spectrum antibiotics. There is need to enhance the Public Service Motivation in Pakistani medical institutes and training programs shall be incepted to prevent the country from plague of antibacterial resistance in coming years. Government should be prepared for the challenges ahead. It is also pertinent to mention that the individuals with greater Public Service Motivation also have attraction to support single beneficiaries therefore this type of behavior has different insinuations. Thus it is recommended that both types of motivations should be contemplated by public managers while trying to increase the altruistic motivation of public service providers.

It is also recommend that the system of regulating the use of antibiotics should be formulated in Pakistan by development of antibiotics prescriptions online portal. The general physicians should register with portal and update the number of prescriptions on daily or weekly basis to provide data for policy makers. It is also recommend that government should regulate the behavior of pharmaceutical companies more meticulously to curtail the placate practices to increase the sales of antibiotics.

Contributions and avenues for future research

Our key contribution in this study is that there is difference in behavior of the general physician dependent upon the nature of employment that is difference between prescription behavior of private and public hospitals along with the main postulate that there is difference between Public Service Motivation and user orientation. In both type of motivations the practitioners have to do hard contemplating to weigh different set of choices available if they have to support the society or single beneficiary by prescribing more narrow-spectrum antibiotics to control antimicrobial resistant or to subscribe broad-spectrum antibiotics to support single beneficiary by enabling early recovery of the patient. The general physicians act according to their understanding of the concept pro-social motivation. This study results support two considerations. Firstly this research provides subtle prospective of pro-social motivation research. For engaging practitioners in pro-social behavior it has been proposed by academics that the design of the job should be such that it promotes pro-social behavior among practitioners (Grant 2007, 2008). From political and managerial standpoint it is evident from our study that it is not always the case that if individual's pro-social motivation is always associated with positive outcome it can be negative. It has been demonstrated that if the general physician wants to help single beneficiary it will have negative externalities for the overall community. Therefore when designing next research related to pro-social motivation the consideration should be given to practical insinuations of these two types of motivations.

Our study can be in line with available knowledge regarding perceived values of organizations and individuals. The organizational values that are mission statement and strategic communication can only be adopted by an individual if they are according to own understandings of the individual (Paarlberg and Perry (2007)). Therefore the public service employees have higher level of performance if their individual beliefs fall within the pie of organizational values circle (Bright (2007)). It is evident from our study that if someone considers improving the performance of the organization one should give importance to understand the individual beliefs within in the organization. By following the value definition of Kluckhohn's (1951) the person who has higher public service motivation will tend to benefit the society as a whole and those who have higher user orientation will benefit the single person. Meanwhile some individual public service providers will not respond to measures predetermined by politicians and managers. Therefore Gailmard (2010) suggested that the discrepancy in value may create disagreement whether the individual to provide public should be Public Service Motivated or user oriented? That is why it is necessary to acknowledge the difference between Public Service Motivation and user orientation. Especially when it comes to decide for provision of public service the behavior consideration should be given due attention that whether the individual intends to support society as a whole or wants to support a single beneficiary.

References

- Andersen, L. B., T. Pallesen and L.H. Pedersen. (2011). Does Ownership Matter? Public Service Motivation among Physiotherapists in the Private and Public Sectors in Denmark. *Review of Public Personnel Administration*, 31(1), 10-27.
- Andersen, L. B., T. Pallesen and H.H. Salomonsen. (2013). Doing Good for Others and/or for Society? The Relationships between Public Service Motivation, User Orientation and University Grading. *Scandinavian Journal of Public Administration*, 17(3), 23-44.
- Andersen, L. L. B., & Serritzlew, S. (2012). Remunerating general practitioners with fees: Between economic incentives and professional norms. *Scandinavian Journal of Public Administration*, 15(4), 25-44.
- Bellé, N. (2013). Experimental Evidence on the Relationship between Public Service Motivation and Job Performance. *Public Administration Review*, 73(1), 143-153.
- Bright, L. (2007). Does Person-Organization Fit Mediate the Relationship between Public Service Motivation and the Job Performance of Public Employees? *Review of Public Personnel Administration*, 27(4), 361-379.
- Campbell, H. a. R. M. (1998). Acting on Principle: Dilemmas in Planning Practice. *Planning Practice and Research*, 13(2), 117-128.
- Chang Q, Wang W, Regev-Yochay G, Lipsitch M, Hanage WP *Evol Appl*. 2015 Mar; 8(3):240-7.
- Costelloe, C., C.Metcalf, A. Lovering, D.Mant and A.D. Hay. . (2010). Effect of Antibiotic Prescribing in Primary Care on Antimicrobial Resistance in Individual Patients. *Systematic Review and Meta-Analysis*, *BMJ*.
- Draper L. A., Cotter P. D., Hill C., Ross R. P. (2015). Lantibiotic resistance. *Microbiol. Mol. Biol. Rev.* 79, 171–191.
- Staats, E. B. (1988). Public service and the public interest. *Public Administration Review*, 601-ii.
- Gailmard, S. (2010). Politics, Principal-Agent Problems, and Public Service Motivation. *International Public Management Journal*, 32(2), 393-417.
- Grant, A. M. (2008). Employees without a Cause: The Motivational Effects of Prosocial Impact in Public Service', *International Public Management Journal*., 11(1), 48-66.

- Goossens, H., Ferech, M., Vander Stichele, R., Elseviers, M., & ESAC Project Group. (2005). Out-patient antibiotic use in Europe and association with resistance: a cross-national database study. *The Lancet*, 365(9459), 579-587.
- Hoekveld, G. a. B. N. (2013). Planning Practice between Ethics and the Power Game: Making and Applying an Ethical Code for Planning Agencies. *International Journal of Urban and Regional Research*, 37(5), 1638-1653.
- Horton, S. (2008). History and persistence of an idea and an ideal. *Motivation in public management: The call of public service*, 17-32.
- Hulschert, M. E. J. L., R.P.T.M. Grol and J.W.M. van der Meer. (2010). Antibiotic Prescribing in Hospitals: A Social and Behavioral Scientific Approach. *The Lancet Infectious Diseases*, 10(3), 167-175.
- Kjeldsen, A. M., & Jacobsen, C. B. (2012). Public service motivation and employment sector: Attraction or socialization?. *Journal of Public Administration Research and Theory*, 23(4), 899-926.
- Jacobsen, C. B., J. Hvitved and L.B. Andersen. . (2014). Command and Motivation: How the Perception of External Interventions Relates to Intrinsic Motivation and Public Service Motivation. *Public Administration Review*, 92(4), 790-806.
- Kjeldsen, A. M. (2012). Sector and Occupational Differences in Public Service Motivation: A Qualitative Study. *International Journal of Public Administration*, 35(1), 58-69.
- Kluckhohn, C. (1951). Values and Value-Orientations in the Theory of Action: An Exploration in Definition and Classification.
- Paarlberg, L. E., & Perry, J. L. (2007). Values management: Aligning employee values and organization goals. *The American Review of Public Administration*, 37(4), 387-408.
- Pedersen, L. H. (2014). Committed to the Public Interest? Motivation and Behavioural Outcomes among Local Councillors. *Public Administration Review*, 92(4), 886-901.
- Perry, J. L. (1996). Measuring Public Service Motivation: An Assessment of Construct Reliability and Validity. *Journal of Public Administration Research and Theory*, 50(3), 367-373.
- Perry, J. L. (1997). Antecedents of Public Service Motivation. *Journal of Public Administration Research and Theory*, 7, 181-197.
- Perry, J. L., & Porter, L. W. (1982). Factors affecting the context for motivation in public organizations. *Academy of management review*, 7(1), 89-98.
- Perry, J. L., & Hondeghem, A. (Eds.). (2008). *Motivation in public management: The call of public service*. Oxford University Press on Demand.
- Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service. *Public Administration Review*, 367-373
- Rayner, J., Williams, H. M., Lawton, A., & Allinson, C. W. (2010). Public service ethos: Developing a generic measure. *Journal of Public Administration Research and Theory*, 21(1), 27-51.
- Ritz, A. (2009). Public Service Motivation and Organizational Performance in Swiss Federal Government. *International Review of Administrative Sciences*, 75(1), 53-78.
- Robbins, S. P. (2004). Basic motivation concepts. *Essentials of Organizational Behavior*, 8, 47-62
- United Nations (2016). Antimicrobial Global Antimicrobial Emergency
- Walsh, C. (2003). Where Will New Antibiotics Come From? *Nature Reviews Microbiology*, 1(1), 65-70.
- Wilson, T. D. (2000). Human information behavior. *Informing science*, 3(2), 49-56.
- Wise, L. R. (2004). *Bureaucratic Posture: On the Need for a Composite Theory of Bureaucratic Behaviour*. *Public Administration Review*, 64(6), 669-680.

- Wise, L. R. (2000). Examining empirical evidence on diversity effects: how useful is diversity research for public sector managers? *Public Administration Review*, 60(5), 386-394.
- Wood, F., S. Simpson and C.C. Butler. (2007). Socially Responsible Antibiotic Choices in Primary Care: A Qualitative Study of GPs' Decisions to Prescribe Broad-Spectrum and Fluroquinolone Antibiotics. *Family Practice*, 24(5), 427-434.
- World Health Assembly (2016). Global Action Plan on antimicrobial resistance
- World Health Organization. (2016). Antibiotics and associated dangers to human health.
- Wright, B. E. (2008). Methodological Challenges Associated with Public Service Motivation Research.
- Wright, B. E. a. A. M. G. (2010). Unanswered Questions about Public Service Motivation: Designing Research to Address Key Issues of Emergence and Effects. 70(5), 691–700.
- Yanti, M. (2012). Public service motivation and job satisfaction in Jambi, Indonesia. Capella University.