

## Psychosomatic Factors Impinge on the Medical Students' Choice of Rural Practice – A Systematic Review

J. Shanmugapriya<sup>1</sup>

<sup>1</sup>Assistant Professor, School of Business and Management, Jaipur National University, Jaipur – India.

### Abstract

*There will be a great shortage of 4.3 million Doctors in 2030 in world level stated by WHO, their shortage in remote areas is an immense challenge. This review examines the evidence base of factors and preferences influencing medical students towards rural placements as they are the future workforce. The study adopted the PRISMA protocol. The factors reasoned for their aversion were formed into the framework of Alderfer's ERG needs and classified based on positively and negatively perceived. Poor living conditions and social isolation is the major cause for the aversion of rural placements. But the proximity of the village and less competition were positively perceived in terms of existential needs. Family relationship, administrative hurdles and communication with rural people were perceived negatively perceived relationship needs, except availability of more support staff. The growth needs such as serving for poor, social status, Knowledge on rural diseases in an altruistic way, but only by rural background/rural upbringing students, Yet the urban origin students have a strong dislike for the reasons of professional stagnation, fewer career advancements, insufficient learning, and research opportunities in rural placements.*

**Key-words:** Medical Students, Perception, Motivation, Career Intention, Review.

### 1. Introduction

“The designed medical education does not adequately prepare the students for rural service, and the students expressed that doctors reluctant to work in rural areas due to the insufficiency of physical amenities, communication facilities, and professional advancements.” (Sapkota & Amatya, 2015). “Professional, Administrative and personal barriers are highly perceived by students to rural practice.” (Arscott-Mills et al., 2016). “Students from capital city areas had significantly more negative views about the rural doctor role.” (Young, Lindsay, & Ray, 2016), “Medical students living in the capital city were found unwilling to practice medicine in rural areas and their intent to migrate

after completing medical training was very high, it creates a huge potential for brain drain.” (Deressa & Azazh, 2012). “Most health professional students do not intend to work in rural areas after they graduate.” (Kizito, Baingana, Mugagga, Akera, & Sewankambo, 2017). “Urban background students have more negative descriptors about rural areas” (Ray, Young, & Lindsay, 2015), “Students expressed concerns about being ‘forced’ to work in non-metropolitan hospitals and received little warning of the location or clinical expectations of the placement, causing anxiety and concern” (Brodribb, Zadoroznyj, & Martin, 2016).

“Few rural students are willing to have initial practice in rural areas, than urban background students.” (Deressa & Azazh, 2012). “Almost half the students wanting to work overseas within five years.” (Schofield, Fletcher, Fuller, Birden, & Page, 2009). “The majority (66.2%) were only willing to work in rural areas for less than a year in Chhatisgarh – India” (Jain, Gupta, Gupta, & Roy, 2016). “subsequently, practice in major cities, and more than half wanted to emigrate to other countries.” (Ahmed, Majumder, & Rahman, 2011). “Many of them from the rural stream had no long-term plans to establish rural practices.” (Tolhurst et al., 2008). “working in the city and a superior working environment were most strongly associated with job preference.” (Liu, Li, Yang, Liu, & Chen, 2016). “Allopathic graduates aimed to specialize and preferred private-sector jobs.” (Ramani, Rao, Ryan, Vujicic, & Berman, 2013). “Allopathic graduates aimed to specialize and preferred private-sector jobs.” (Pati, Swain, Nallala, Das, & Kasam, 2015)

All these investigations indicate that the increasing aversion of medical students towards rural placements or mandatory rural rotations, despite the efforts of policymakers in the global level. So this review sought to identify multiple psychological factors like perceptions, intentions, attitudes, interests, expectations, motivations of medical students towards rural placements. The study tries to extract Existential, relatedness and growth need factors exerted by the students in various studies. Also, it provides the glimpses on students’ preferences for future rural placements concerning with the above said needs and factors behind rural background students’ inclination towards rural areas from the literature search.

## **2. Methods**

**Sources and search strategy:** The major sources of databases used in this study are PubMed, Cochrane library Scopus, Google scholar, EBSCO host and Human Resources for Health. The key words search for this review are medical students, psychological factors, and rural location.

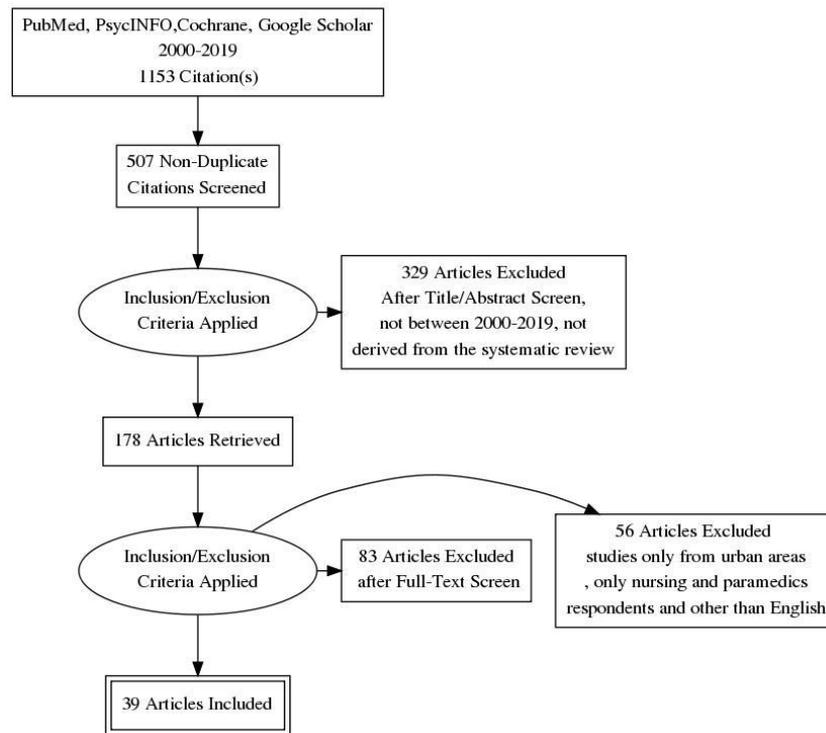
## **Inclusion and Exclusion Criteria**

The inclusion criteria were set to include all articles that were published between 2000 and January 2019 in peer-reviewed journals and reported factors influencing medical students' motivation, preference, attitude, expectation, intention, career choice and perception to work in rural areas. For this study, the authors used the terms 'rural area' or 'underserved area' or 'rural background' or 'rural upbringing'. Studies reporting practices in global countries were included. Articles from only nursing or other paramedical students and articles not published in English were excluded.

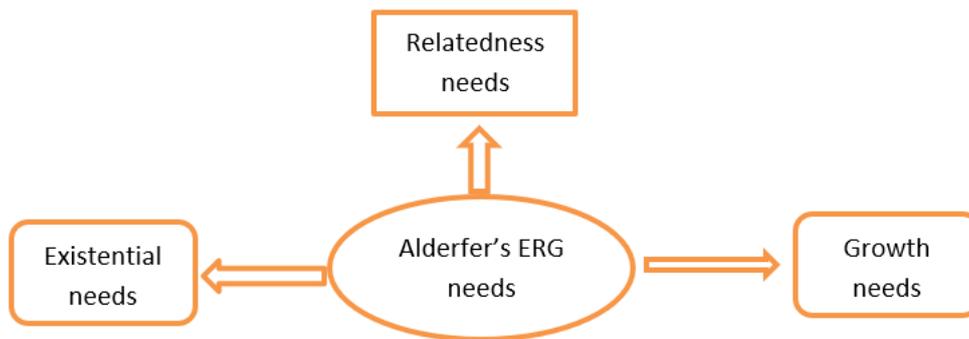
**Data extraction:** In total 1153 papers were obtained from the above-said databases, of which 507 were included as these are non-duplication to citations. Of which 329 papers are eligible publications for this review, due to the elimination of the studies not between 2000-2019, not derived from a systematic review. A title review was carried out for these papers and followed with full-text assessment for eligibility. Thus, publications included in the final review are 39. All these papers include the subjects as undergraduate medical students, interns, super specialty and P.G. diploma medical students and their motivation, career choices, intentions, preferences, attitudes, and perceptions towards their rural placements. The papers not meeting the inclusion conditions, removed for additional analysis. Afterward title, abstract, and contents were scrutinized for in-depth study. The article selection process is reported using the PRISMA Diagram generator.

Total of 39 papers were considered for in depth review, 5 from perception based studies, 9 of motivation, 5 of attitude, 11 of career intention, 7 of preferences and each from self-efficacy and anxiety (2) based studies.

Figure 1 - Article Selection Process



Based on the above framework, the psychological factors were analyzed to classify into three categories of needs: (1) Existential need factors (2) Relatedness need factors and (3) Growth need factors.



**Existential needs:** “This group of needs is concerned with providing the basic requirements for material existence, such as physiological and safety needs. In a work context, this need is satisfied by money earned in a job for survival and other existential requirements.” (Alderfer, 1969).

Many papers discussed the existential needs, which are not enough in the rural communities, the following studies found that these needs are perceived by the medical students as deprived. Inadequate or less facilities at the workplace (P. R. Shankar & Thapa, 2012)(Pati et al., 2015) Lower or less salary (Goel et al., 2019),(Saini, Sharma, Roy, & Verma, 2012) different income streams (Witter et al., 2011) in rural placements and preference for better salary (Ramani et al., 2013) to work

in rural areas indicated as financial constraints by medical students. Isolation is indicated as the major factor in rural areas (Young et al., 2016) (Sharma, Gupta, & Rao, 2014) (Arscott-Mills et al., 2016), poor working conditions (Sharma et al., 2014) (Witter et al., 2011), lesser travel (Goel et al., 2019) and limited transportation facilities (Aydin et al., 2015). poor living conditions (Saini et al., 2012) (Witter et al., 2011) (Aydin et al., 2015) (Ramani et al., 2013), less infrastructure (Goel et al., 2019) (Arscott-Mills et al., 2016) (Saini et al., 2012), poor recreation (Sharma et al., 2014) (Arscott-Mills et al., 2016), less security (P. R. Shankar & Thapa, 2012) (Goel et al., 2019). Less equipment (P. R. Shankar & Thapa, 2012) (Goel et al., 2019) (Witter et al., 2011), work load (Young et al., 2016), (Witter et al., 2011), limited resources (Young et al., 2016) (Anthony Amalba et al., 2018), unsatisfactory housing facilities (P Ravi Shankar, Dubey, Nandy, Herz, & Little, 2015) (Pati et al., 2015) were listed by many authors. The shortage of basic amenities like electricity, water and telecommunication facilities (P Ravi Shankar et al., 2015) were indicated for frustration. Financial incentives, political interference, lack of drug supplies and poor accommodation facilities (Goel et al., 2019) (Goel, Angeli, Singla, & Ruwaard, 2018), Poor standard of living (Saini et al., 2012), rural areas are difficult place to work (Aydin et al., 2015) poorly functioning health facilities (Arscott-Mills et al., 2016), A lack of social amenities, financial and material resources; (Anthony Amalba et al., 2018). basic amenities for family members (Jain et al., 2016) were indicated for high aversion in rural places. Some of the existential needs positively perceived by the students in one of the studies to select the rural placements were need of a job, a village in proximity, good approach and less competition (Sharma et al., 2014)

**Relatedness needs:** “This group of needs focuses on the desire to establish and maintain interpersonal relationships with family, friends, co-workers, and employers. This need includes the need to interact with other people, receive public recognition, and feel secure around people.” (Alderfer, 1969)

Few relatedness factors were reasoned for repugnance towards rural career as indicated that decreased contact with family (Tolhurst et al., 2008) (P. R. Shankar & Thapa, 2012) and difficulties in communicating with an illiterate rural people (P. R. Shankar & Thapa, 2012) Discrimination and indifferent attitudes of rural people cause anxiety and discomfort (Han & Humphreys, 2005). Concerning Official and administrative tasks, poor relationships with colleagues, support and supervision, (Witter et al., 2011) social segregation, socio-cultural gap, (Goel et al., 2019) inadequate human resource support; social isolation, (Goel et al., 2018) Spouse adjustment, (Han & Humphreys, 2005) influence of spouse (Syahmar et al., 2015). But supportive staff saw in rural practice (Arscott-Mills et al., 2016) is perceived positively by the students.

**Growth needs:** “These needs are about the fulfillment of desires to be creative, productive, and to complete meaningful tasks to build and enhance a person’s self-esteem through personal achievement.” (Alderfer, 1969)

Growth needs were discussed in different studies, for the extraction author classified under 4 categories such as professional, career and training, learning and research and education facilities for children. Problems with professional development(P. R. Shankar & Thapa, 2012), no scope for professional future (Sharma et al., 2014), lack of professional challenge, hostile professional environment(Goel et al., 2018) Professional stagnation. (Arscott-Mills et al., 2016) were common factors, highly discussed in many studies. Less career development and training (Witter et al., 2011) fewer career opportunities and challenges (Schofield et al., 2009) limited career progression opportunities;(Anthony Amalba et al., 2018), (Fleeson et al., 2017), not enough training.(Fleeson et al., 2017) fewer opportunities for career advancement. (Syahmar et al., 2015) there were no career growth opportunities in rural practice.(Jain et al., 2016) were demonstrated in major works. The problem of schools for the education of children(P Ravi Shankar et al., 2015), lack of education opportunities for children(Jain et al., 2016) were mainly reasoned for non-acceptance of rural practice in future (Han & Humphreys, 2005). Lesser research opportunities (Goel et al., 2019) lack of learning opportunities(Arscott-Mills et al., 2016) difficult to gain experience (Tolhurst et al., 2008)in clinical practice is perceived as hindrances for their advancements.

Some factors positively perceived by the students towards working in rural and remote places like the Provision of professional support and degree of supervision are satisfactory (Brodrigg et al., 2016) in rural practice. Altruistic intentions like Desire to serve poor, underprivileged and home community (Goel et al., 2019), health services for the poor/ benefit for the nation’, and ‘gain of knowledge about rural people and their diseases’(Saini et al., 2012)(Jain et al., 2016) play a major role in accepting rural placements. Broader clinical exposure because of preferential admission in post-graduation after working more than 2–3 years in rural areas (Goel et al., 2019) Diversity of practice in rural areas (Arscott-Mills et al., 2016) entertained as professional growth factors among medical students. Higher status and respect among rural people and achieving higher social status(Goel et al., 2019) were perceived as the self-esteem needs of students.

### **3. Discussion**

The results of the review unleashed that very few existential need factors positively perceived by the medical students to work in rural areas, i.e. proximity of the village, need of a job, less

competition, and good approach. The other need factors of basic amenities such as social isolation, infrastructure, housing, electricity, transport, health facilities, recreation, social security, ICT were negatively perceived. Hence one of the recommendations, as supported by research elsewhere, is that the Government should concentrate on living conditions. fulfillment of existential needs is an important phenomenon and therefore interventions designed at addressing the problems must consider inevitable living conditions and working environment. Although Doctors are in the Professional category, they are not only aspiring for their highest order needs but also concerned for basic needs in their workplace

The foremost relatedness needs were negatively perceived such as family and community contacts, poor communication with illiterate people, insufficient supervision, contacts with colleagues and spouse adjustment and his/her job in rural areas. The only factor positively perceived is the availability of more supportive staff in rural areas. Hence, addressing the issues related to family, spousal and children factors, and upgrading the health administrative system in rural areas will be helpful to attract and retain the health workforce in underserved areas.

As Governments in global level are started to take the measures to fulfill the advancement needs of doctors and their interventions going in a positive way, the review revealed that many altruistic factors such as desire to serve for poor, broader perspective, knowledge of rural people and their diseases, serving back to the community were positively perceived by medical students, those resulted only from rural background and rural upbringing students, but strong aversion towards rural placements progressed from urban students. But the career growth, professional stagnation, learning and research opportunities were still negatively perceived. So an integrated approach to formulating policies by health policymakers and educational policymakers to address concerns like assured higher studies opportunities with mandatory rural training, scholarships based on rural practice, etc. can be helpful and effective.

#### **4. Conclusion**

The review's thorough presentation of the study's methodological physiognomies, consequences, and commendations, makes it useful to enlighten future research on rural placement programs bearing in mind the ideal needs of students afore going with the strict measures like mandatory internships or rotations. Investigators as well need to document the factors steering the success of the designed policies and measures taken in global level. In addition, explorative and in-depth qualitative research should be considered to look at the preferences of medical students.

Furthermore, policy advisors should contemplate the evidence presented in this review, as a guide of what is expected by medical interns/ residents for their future, concurrently not ruining the health availability of underserved population.

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