

## DOCTORS' CHOICE OF MEDICAL SPECIALTY, DIFFERENCES AMONG SCHEMA THEORY

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received: 8.5.2021;

revised: 27.8.2021;

accepted: 15.12.2021

### SUMMARY

**Background:** In previous studies, the relationship between career choice and psychological factors has been discussed many times. On the other hand, we have less information about interaction between early maladaptive schemas and career choice.

**Subjects and methods:** We planned to evaluate the specialty preferences of doctors in the perspective of schema theory. Doctors from the 2 to 10 years of their careers were included in the study. A Sociodemographic data form and Young Schema Questionnaire - Short Form 3 was applied to 275 participants; 167 clinical specialties and 108 surgical specialties.

**Results:** According to our results surgeons scored higher in emotional deprivation, mistrust / abuse, social isolation / alienation, defectiveness / shame, and emotional inhibition. As schema domains, surgeons scored higher disconnection and rejection and excessive responsibility and standards.

**Conclusions:** Early maladaptive schemas can affect the choice of profession and the ability to adapt. Understanding early maladaptive schemas can play a role both in orientation towards the right career choice and in resolving negative factors related to the work environment.

**Key words:** career choice – personality - schema therapy - medical specialties

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### INTRODUCTION

Some doctors decide on their future specialties before starting medical school (Johnson et al. 2012). However, others are influenced by factors such as the duration of the specialty, the quality of the specialty's education, and post-specialty financial income. In some studies on doctors' personality traits working in different medical specialties, the relationship between specialty choice and personality traits has been emphasized (Borges & Savickas 2002, Markert et al. 2008). Some studies have even reported that personality profiles can be predictive for specialty choice (Vaidya et al. 2004, Maron et al. 2007).

Medical school education lasts six years in Turkey. Then, depending on doctors' wishes, they can apply for the Medical Specialization Exam, which has been held twice a year since 1987. People can choose to apply based on the scores they receive. The placement basis is the success ranking of the person in the exam. Specialization areas in our country are generally divided into three parts: surgical sciences (such as orthopedics, obstetrics, urology, ophthalmology, cardiovascular surgery); clinical sciences (such as internal medicine, pediatrics, chest diseases, psychiatry); and basic sciences (such as microbiology, histology, anatomy).

Early maladaptive schemas consist of emotion, cognition, behavior, and bodily sensations that develop during childhood or adolescence and repeat throughout a person's life (Young et al. 2006). Early maladaptive schemas (EMS) evoke psychopathology patterns and mental disorders. However, studies point to the importance of schema organizations, albeit at a lower intensity, in people without mental illness (Cámara & Calvete 2012) and mental health professionals (Sahoo Saddichha & Pradhan 2012, Bamber & McMahon 2008). The presence of EMS does not directly lead to psychopathology; many studies are showing that it is present in the 'healthy' population (Dozois et al. 2009, Zhu et al. 2016, Shorey et al. 2017). Also, previous studies suggest that there may be EMS profiles associated with particular occupations (Bamber & McMahon 2008, Kaeding et al. 2017). People may somehow prefer work in environments that are 'familiar' to them based on EMS (Bamber & McMahon 2008). This situation can sometimes be an advantage and sometimes a disadvantage depending on the severity of EMS. For example, the unrelenting standards scheme seems to be an essential structure for a person to be a successful employee. However, in a study of 1297 clinical and consulting graduate psychology trainees, it was reported that the unrelenting standards scheme predicted burnout (Kaeding et al. 2017). Previous

studies indicate that a significant number of mental health professionals have turned to this field due to their past lives (Bamber 2006). EMS can act in more than one way. When a schema is triggered, people often respond with an incompatible coping style (e.g. overcompensation, avoidance, surrender), which continues the scheme (Young et al. 2006).

Current studies conceptualize 18 schemas in four domains: disconnection and rejection, impaired autonomy and performance, excessive responsibility and standards, and impaired limits (Bach et al. 2018). Each of these four areas reflects some of the unmet needs that may have contributed to developing the schemas (Bach & Bernstein 2019). The disconnection and rejection domain includes emotional deprivation, social isolation/alienation, emotional inhibition, defectiveness/shame, mistrust/abuse, and pessimism/negativity. Impaired autonomy and performance domains also include dependence/incompetence, failure to achieve, subjugation, abandonment/instability, enmeshment, and vulnerability to harm. The excessive responsibility and standards domain includes self-sacrifice, unrelenting standards, and self-punitiveness. Finally, the impaired limits domain includes entitlement, approval/admiration-seeking, and insufficient self-control (Bach & Bernstein 2019).

In Turkey, the choice of specialization depends on the result of an exam. The limited quotas can prevent doctors from specializing in the specialties they wanted. For this reason, in this study, we concluded that evaluating individual specialties would make it exceedingly difficult to control the effects of individuals' scores in the exam. However, although the quotas are limited, people can choose clinical or surgical specialties with similar scores. For this reason, we planned to make our assessment based on the people's surgical and clinical specialties choices. Also, to limit the effects of periodic differences due to changes in working conditions of different specialties in the long term, we limited the participants to those who have worked in their professional careers for 2-10 years. This study aimed to examine the relationship between doctors' EMS in surgical and clinical specialties and present empirical data in this sense. As far as we know, there is no study examining the relationship between EMS and the choice of specialty in doctors. For this purpose, the main hypothesis of the study was that there would be a difference between the EMS of surgeons and non-surgeons.

## SUBJECTS AND METHODS

This research is a quantitative, cross-sectional study in which scales were administered online to evaluate the relationship between EMS and specialty

selection. Participants were divided into two groups as surgeons and non-surgeons. Basic sciences doctors working in anatomy, histology, and microbiology, who mainly worked in laboratories, were not included in the study. Doctors working in any specialty for 2-10 years were included in the study. Sociodemographic data form created by the researchers, Young Schema Questionnaire - Short Form 3 (YSQ-SF3) was sent to volunteers online. Ethics committee approval was obtained from Muğla Sıtkı Koçman University Non-Invasive Studies Ethics Committee (Application number: 200255, Registration number: 44).

The forms for the study were sent to 420 doctors in physician social media groups with a total of 9000 members. All participants were informed about the study. A total of 312 doctors participated in the study. The data of participants currently receiving psychotherapy or psychiatric treatment were not included in the analysis because they could change the schema scores. Also, the results of 11 people and 26 people were not included due to unreasonable survey completion times (under 35 minutes). In this way, analyses were performed with a total of 275 people. When the distribution was made according to the specialties, analyses were performed with participants from 167 clinical specialties and 108 surgical specialties.

## Scales

Sociodemographic data form: The form was created by the research team in which the characteristics of the participants such as age, sex, education year, and branch were questioned.

### *Young Schema Questionnaire - Short Form 3 (YSQ-SF3)*

In this study, the third version of the short form of the Young Schema Questionnaire (YSQ-SF3) was used to evaluate early maladaptive schemas (Young & Brown 2005). The Turkish validity and reliability study of the scale has been conducted (Soygüt et al. 2009).

## Data analysis

The data was evaluated using the IBM SPSS Ver. 15.0 for Windows Evaluation Version (Statistical Package Program for the Social Sciences). The sociodemographic information of the patients is shown as percentages. Numerical variables are indicated as mean and standard deviation, and categorical variables as number and percentage. The participants were dichotomized as surgeons and clinicians, and the two independent samples t-test was used to evaluate the differences between the groups.

## RESULTS

Our analyses were conducted on 167 clinicians and 108 surgeons. According to our findings, there was no difference between the groups in terms of age, sex, and marital status. Interestingly, the participants were asked, "If you could, would you change your specialty?" Approximately one-third of the participants in both groups answered positive. "Was your specialty your first choice?" About 60% of the participants answered positive to the question. The mean age was 32±4 years for non-surgeons and 32±5 years for surgeons, and there was no significant difference in age between the groups ( $P=0.786$ ) (Table 1).

We then examined the difference between the groups in terms of 18 EMS. Surgeons scored higher in emotional deprivation ( $P=0.005$ ), mistrust/abuse ( $P=0.047$ ), social isolation/alienation ( $P=0.007$ ), defectiveness/shame ( $P=0.042$ ), and emotional inhibition ( $P=0.010$ ), and there was a significant difference between the groups (Table 2).

Finally, we examined the difference between the schema domains and the groups. A significant difference was found in the domains of disconnection and rejection ( $P=0.004$ ) and excessive responsibility and standards ( $P=0.021$ ), again due to the higher surgeons' scores (Table 3).

**Table 1.** Sociodemographic Data

	Sample group		P
	Clinicians N (%)	Surgeons N (%)	
Gender			
Male	57 (34.1%)	44 (40.7%)	0.212
Female	110 (65.9%)	64 (59.3%)	
Marital status			
Single	63 (37.7%)	42 (38.9%)	0.725
Married	99 (59.3%)	64 (59.3%)	
Other	5 (3.0%)	2 (1.9%)	
If you had the opportunity, would you change your specialty?			
Yes	53 (31.7%)	34 (31.5%)	0.965
No	114 (68.3%)	74 (68.5%)	
Was your specialty your first choice?			
Yes	103 (61.7%)	69 (63.9%)	0.712
No	64 (38.3%)	39 (36.1%)	

**Table 2.** Relationship Between EMS and Specialty Choice

EMS	Clinicians	Surgeons	p
Emotional Deprivation	8.51 (±4.00)	10.14 (±4.98)	0.005
Abandonment/Instability	12.06 (±3.72)	12.34 (±3.69)	0.538
Mistrust/Abuse	12.44 (±4.41)	13.61 (±4.96)	0.047
Social Isolation/Alienation	11.74 (±4.59)	13.30 (±4.80)	0.007
Defectiveness/Shame	8.63 (±3.81)	9.66 (±4.40)	0.042
Failure to Achieve	9.47 (±4.05)	9.13 (±4.04)	0.492
Dependence/Incompetence	8.68 (±3.70)	8.67 (±3.74)	0.983
Vulnerability to Harm	11.60 (±4.49)	11.69 (±4.09)	0.858
Enmeshment	11.04 (±3.99)	11.43 (±3.74)	0.415
Subjugation	11.05 (±4.11)	10.98 (±4.56)	0.900
Self-Sacrifice	16.11 (±4.67)	17.14 (±4.51)	0.071
Emotional Inhibition	11.53 (±4.97)	13.19 (±5.58)	0.010
Unrelenting Standards	17.23 (±4.14)	18.04 (±4.13)	0.110
Entitlement	15.56 (±4.14)	16.10 (±4.03)	0.288
Insufficient Self-Control	13.95 (±3.98)	14.48 (±3.74)	0.272
Approval/Admiration-Seeking	16.66 (±4.74)	16.30 (±4.67)	0.538
Pessimism/Negativity	14.01 (±4.61)	14.49 (±4.44)	0.395
Self-Punitiveness	13.82 (±4.03)	14.78 (±4.04)	0.056

EMS: Early Maladaptive Schemas

**Table 3.** Relationship Between EMS Domains and Specialty Choice

EMS Domain	Clinicians	Surgeons	p
Disconnection and Rejection	11.14 (±3.20)	12.40 (±3.92)	0.004
Impaired Autonomy and Performance	10.65 (±2.92)	10.71 (±3.22)	0.876
Excessive Responsibility and Standards	15.72 (±3.21)	16.65 (±3.32)	0.021
Impaired Limits	15.40 (±3.35)	15.63 (±3.12)	0.558

EMS Domain: Early Maladaptive Schemas Domain

## DISCUSSION

Our findings partially supported the hypothesis that there would be a difference in EMS between surgical and clinical doctors. However, the results cannot explain why this discrepancy occurred. Why do surgical specialties achieve higher scores in some EMS? Or are those who have high EMS scores inclined to surgical specialties? It is not possible to answer these questions; however, we discuss some possible interpretations of the findings below.

Schema theory is based on the fact that early experiences can indicate how one perceives oneself and others (Young et al. 2006). Schema patterns form part of the personality and then act as a prototype for thoughts, attitudes, and behaviors (Young et al. 2006). Although avoidance strategies are reported as the most common coping attitude associated with EMS (Aldao et al. 2010, Compas et al. 2017), it is important to know that the same EMS can offer different strategies to individuals. For example, activation of an EMS can sometimes lead to avoidance behaviors, sometimes causing it to behave in a pure schema trajectory (surrender), sometimes the opposite of EMS (overcompensation) (Young et al. 2006). People may be turning to their own EMS. In this case, it is possible to have problems related to EMS.

However, because EMSs represent stable structures (Young et al. 2006), it is not conceptually wrong to examine them in non-clinical samples. Using a non-clinical sample may have some advantages. The absence of prominent psychopathologies can provide more objectivity in the assessment made with self-report scales, preventing the relationship in mood states and schema activations from exaggerating the results. The results may represent the general population more clearly (Carr & Francis 2010).

According to our findings, surgeons scored higher in emotional deprivation, mistrust/abuse, social isolation/alienation, defectiveness/shame, and emotional inhibition among 18 schemas. The relationship between EMSs and past trauma experiences is essential. As a somewhat speculative comment, it may be expected to determine EMS higher in surgeons than in non-surgeon doctors in general because surgeons can physically create trauma and repair trauma.

The disconnection and rejection domain is conceptualized as acceptance, trust, care, empathy, sharing feelings, and not meeting the need for respect. It has

been stated that the typical characteristics of the families of people with this scheme are detached, cold or rejecting (Young et al. 2006, Bach et al. 2018). Except for pessimism/negativity, we found a significant difference in all schemas in this area when considered individually, and the total score of this domain was found to be higher in surgeons. A previous study evaluated general surgeons, anesthesiologists, and family physicians, citing surgeons to be more rigid-minded, more determined, and less empathetic (Borges & Osmon 2001). It is stated that people with the disconnection and rejection schema domain have low empathy levels because they avoid expressing their feelings in their relationships (Young et al. 2006).

Emotional deprivation is a state in which the expectation of emotional support cannot be satisfied sufficiently. It can be considered as lack of interest, lack of empathy and lack of protection. An operating room can be the ideal setting if a doctor with an active scheme uses the delivery route as a coping strategy. An emotion-free, cold and rational environment can be an ideal work environment to reduce triggering the scheme. On the other hand, outside the operating room, being a more prestigious and greater 'healer' who does more risky jobs can provide intense emotional attention. In a study that evaluated nurses with early maladaptive schemas, the presence of early maladaptive schemas seemed to cause poor communication skills. It has been reported that difficulties in verbal communication skills may increase the risk of burnout syndrome and cause professional dissatisfaction (Mohammadi et al. 2020). Considering this study, the selection of surgical specialties in which verbal communication with patients is less prominent suggests the delivery mechanism used to deal with this scheme.

Mistrust/abuse can be summed up as the expectation that others will be abuse or deceived. The expectation is to always be the person to 'draw the short straw.' Therefore, the skepticism scheme can be a positive construct for a surgeon. But why do people with skepticism schemes want to become surgeons? Under anesthesia, a surrender of communication to the doctor may be an avoidance strategy for doctors with a skepticism scheme.

Social isolation is the feeling of not being part of a group or community, and feeling different from everyone else (Arntz & Jacob 2017). There may appear to be a mismatch between family past experiences and

current achievements for some people with this scheme. The success of being the first and only educated member of a poor and low-educated family has been described as a typical example (Arntz & Jacob 2017). In most studies conducted on surgeons using the relevant Five-Factor Model, it seems that extraversion scores are high (Borges & Savickas 2002, Stilwell et al. 2000). Interestingly, the social isolation scheme, which seemed to be in the opposite direction in our study, received higher scores in surgeons. This situation may suggest that the results that we consider as extroversion follow an overcompensation strategy in coping with social isolation schemas.

Defectiveness/shame can be explained as the expectation that a person is flawed and will not be accepted because of these flaws. Many positive reflections such as the practical application of scientific knowledge, ability to work under pressure, high prestige and leadership opportunities in medicine are attributed to surgeons (Mowbray & Davies 1971). Studies in the literature describe surgeons as competitive, courageous, risk-taking, and determined (Novick et al. 2015). Performing this perfect job can be considered within the scope of overcompensation as a strategy to cope with imperfection schemas.

Emotional inhibition is the suppression of natural feelings. It can manifest as anger, joy, expression of needs or extreme rationality (Young et al. 2006). In surgical specialties, suppressing emotions may be an expected and perhaps desired feature. A previous study showed that doctors had a more robust emotional inhibition scheme than psychologists (Bamber & McMahon 2008). This scheme is interpreted as excessive inhibition of emotions in disapproval or loss of control by other people. It has been suggested that this scheme's existence may prevent doctors from being affected emotionally while making difficult decisions (Bamber & McMahon 2008). Also, surgical specialties can be an ideal environment for people who have these schemas in the foreground, by considering treatments only as medical procedures and suppressing emotional burden.

Another difference is the schema domain, excessive responsibility and standards, which includes self-sacrifice, unrelenting standards, and self-punitiveness. Typical characteristics of families have been defined as overly perfectionist, controlling, and emotionally deprived (Bach et al. 2018). When these three areas were handled individually, we found that there was no difference between the groups. However, the total score was found to be significantly higher in surgeons. It can be stated that living conditions in surgical specialties in our country require a more profession-oriented life. There are busy working hours and harsh working conditions, and doctors choose this with a "pre-acceptance." They sacrifice a significant portion of their social life for their work life. The scheme's

main purpose is to meet the needs of others quickly, and it is known that there is a high proportion of people working in the fields of care and assistance (Arntz & Jacob 2017). Also, there is a stricter hierarchy in surgical specialties, and there is no room for error. Besides, surgical specialties inherently require 'leadership' and 'ability to work well under pressure'. People may feel obliged to "do their best" (unrelenting standards). If they cannot, they may face more critical consequences than other specialties. Therefore, making mistakes is unacceptable and involves a tendency to be intolerant of mistakes (self-punitiveness) (Young et al. 2006). In this sense, it becomes more understandable that this field's scores, which consists of self-sacrifice, unrelenting standards and self-punitiveness, are higher. In a way, perhaps the essential characteristics of being a successful surgeon may even require having these schemas at certain levels. When we evaluate these features, people who dominate these schemas may choose these specialties, and workplace environments can be expected to trigger these schemas.

Our limitations in the study may be that the measurements are based on self-report scales. Previous studies have illustrated the importance of obtaining information from people's immediate environment (Janovsky et al. 2020). Additionally, the study does not evaluate all factors that contribute to the choice of profession. In different societies, the workload, financial income, and social status of different specialties may be different. In this sense, it will be essential to work with more participants and re-evaluate the results. In addition, avoidance, surrender, and over-compensation strategies have not been evaluated in relation to EMS. In addition, basic sciences doctors were not included in this study. Basic sciences can be considered as a temporary job in our country before retaking the exam, especially in the first 2 years, and we were concerned that this might adversely affect the hypothesis of our study. Finally, this study is a cross-sectional study. Although it points to a relationship between branch selection and schemas, individuals' evaluations and long-term preferences before graduating from medical school will give clear results about these relationships.

## CONCLUSION

The main point to be considered in this study is that EMS can be found in every individual but this situation does not directly indicate a pathology in individuals. However, the findings will still contribute to us in terms of psychological factors why some people choose surgery, and some people choose clinical specialties. Based on these findings, we think that EMS can be an essential issue in directing individuals' professional careers and in dealing with job-related problems (such as burnout) in their current careers.

**Acknowledgements:** None.

**Conflict of interest:** None to declare.

**Contribution of individual authors:**

Fatih Yiğman & Muhammed Hakan Aksu: study design, data collection, search for literature, writing the paper.

Azat Duman & Damla Balkan: study design, search for literature.

Alp Karaosmanoğlu: study design, writing the paper.

All authors reviewed the final manuscript and gave their consent for the final version.

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