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MEDICAL STUDENTS' TIME MANAGEMENT SKILLS AND STRATEGIES IN CONNECTING TO SELF-DIRECTED LEARNING: A QUALITATIVE STUDY

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Abstract

Self-directed learning (SDL) is the ability to direct and regulate one's learning which is crucial to success, and it is associated with life-long learning in the medical profession. However, medical students' have low readiness for SDL, and therefore, it warrants improvement in the training curricula of medical and post-graduate studies. Several factors influence SDL among medical students and one of the crucial factors is the time management. However, data correlating poor time management with SDL readiness among the medical students in Saudi Arabia has remained underexplored. Thus, exploring the experiences of the medical residents based on Macan's theory of time management would help understand the importance of time management skills as part of the SDL in Saudi Arabia. Hence, for them to be competent, skilful and self-directed lifelong learner, this study would explore the strategies which could be utilized by the Saudi Medical residents in managing their time by answering the following question: "What strategies do Family Medicine residents use to manage their time to meet the desired learning outcomes?"

The study consisted of twenty-five (n=25) participants who qualified the prescribed set of inclusion criteria. Ethical principles included the informed consent, autonomy, confidentiality, privacy, and anonymity were ensured throughout the entire research.

The emergent themes that were generated from the focus group discussions (FGD) were observed to be associated with the widely known model of Macan' Time Management (1994). The management process involved four steps which included the planning, organizing, directing and controlling of time which reflected in the experiences shared by the family medicine residents in achieving the desired learning outcomes through SDL. This study concluded that there would be positive outcomes if the tested strategies of time management are used to train the medical residents.

Keywords

Self-Directed Learning, Students, Time Management, Time Management Strategies

1. Introduction

In today's education system, self-directed learning (SDL) constitutes one of the fundamental educational concepts, and it needs critical reappraisal, especially, in the medical and post-graduate training curricula. It is, presently, regarded as one of the essential components of adult learning and it is increasingly being used in higher education, particularly in medical schools (Tagawa, 2008; Barbosa et al., 2017).

Several studies have underscored the importance of SDL in the medical profession, especially in the learner's self-reflection. SDL is known to be a rich avenue for educators to teach their students to be an excellent lifelong learner, and serves as a means to engage students in self-reflection and evaluation processes while they complete their learning goals and objectives towards their professional study requirements, and it has been observed that constant reflections by physicians helped them to become a critical thinker scholarly and develop their clinical competencies. (Zumbrunn, Tadlock, & Roberts, 2011).

Numerous literature published in various regional and international journals are replete with studies reporting relevant factors which could impact SDL's management processes, specifically in the planning, organizing, directing and controlling phases such as: the use of problem-based learning, quality of teacher experiences, motivation concerns, and time management (Leatemia, et al 2016; Regan 2013; Soliman &Al-Shaikh ,2015 and Guardiola et al 2016). Amongst the several factors mentioned, the time management was one of the most crucial factors affecting SDL for medical students. (Balapumi & Aitken, 2012; Emblen & Gray, 1990; Huang, 2008; Kim & Park, 2011; Gruppen, et al. 2000; Guardiola et al, 2016; Leatemia, et al, 2016; Lie et al 2010; Regan, 2003; and Shepard, et al.2012).However, students have been reported to often underestimate their ability and sometimes also fail because of the inappropriate and inefficient time management, and imparting time

management skills is widely the best way to promote student's SDL approach which improves their skills to cope with the assigned tasks efficiently and successfully. (Balapumi and Aitken, 2012).

Therefore, it was concluded that students still needed various kinds of support (i.e. learning methods) especially relating to the planning and utilization of time in engaging with SDL. (El-Gilany, 2013). Previous studies have also observed similar findings, suggesting that medical students needed support in managing their time (Abraham et al., 2011; Soliman and Al-Shaikh, 2015; Salih et al., 2016).

In light of the available literature, it may be concluded that students of medicine and other professional courses lack time management skills, hence, warrants undertaking more studies in order to introduce efficient, better approach and strategies to provide time management skills to medical students in Saudi Arabia. Thus, in spite of all these observations, the answer to the timeless question, "how does the time management work in SDL?" has remained elusive and hence, this may be attributed to the lack of research on the time management in Saudi Arabia.

In 1994, Macan proposed a theory, which served as a 'model for time management', and it became a standard for handling the time management, effectively. This theory was, later on, supported by three other studies (Adams and Jex, 1999; Jex and Elacqua, 1999; Davis, 2000).

Macan's theory proposed that obtaining the skills and subsequently connecting to the behaviours could make a way to accomplish greater control over time. Macan's model was extensively pragmatic in its approach to the investigation of the time management which included the theoretical process that incorporates the theory of planned behaviour (TPB). Moreover, Macan's theory also spearheaded to scrutinize the correlation of the time management behaviours and TPB through reconnoitring the associations of the theoretical foundations and the perceived control over time.

In Saudi Arabia, Studies have highlighted that Avast majority of medical students were incapable of managing and utilizing SDL time in the best possible way. Also, it has been highlighted that there is a lack of qualitative studies which could adequately elaborate on strategies influencing the effective time management among medical students.

Thus, based on the experiences of participants on the Macan's theory, it is expected that Macan's theory would also help guide the present research objectives to answer the prevailing gaps, and it would also explore new learning tools which hopefully could be added to the existing armamentarium of Saudi medical education.

1.1 Research Objective

The study aimed to investigate the various strategies that could be used by Saudi medical residents in managing their time, based on the Macan's time management theory, in order to meet the desired learning outcomes, to be competent, skillful and self-directed/lifelong learner, in King Abdul-Aziz Medical City (KAMC) by answering the main question: *"What strategies do Family Medicine residents use to manage their time to meet the desired learning outcomes?"*

2. Methodology

2.1 Research Design

This research (qualitative descriptive research) was conducted in King Abdul-Aziz Medical City (KAMC) in Dammam, where the Saudi Board of Family Medicine (SBFM) program was established in 2013 to meet community needs. The program consists of four residency training levels containing between 20-25 residents annually.

2.2 Participants

The inclusion criteria for this study were as follows: Saudi locals serving as post-graduate residents on the Saudi Board of Family Medicine in both junior (1-2 years) and senior (3-4 years) residency levels of the training program. Participation was not excluded based on gender, age, or sociocultural group. FGDs were conducted among 25 residents (both males and females).

2.3 Material and Methods

A set of interview instructions were created to guide this study's FGDs. This included a semi-structured interview guide used to initiate dialogue. The following are examples of questions included in the interview guide: *(1) How do you manage time during your studies and in private life? (2) Do you feel that you are controlling your time? (3) Do you achieve your goals in an optimal period of time?* Such questions were used to keep the dialogue on-topic.

Data were collected during the FGDs, in which an audio recording device was used.

The FGDs led to in-depth interviews that uncovered information on how residents managed their time and whether they felt that they controlled their time to achieve self-directed/lifelong learning targets.

2.4 Data Analysis

When data were obtained, transcript files received qualitative explication to reveal themes.

This procedure was patterned after Collaizi's content analysis method to obtain rich textual descriptions of participant experiences through FGD.

Initial data analysis involved reading and analyzing participants' responses to the questions asked. All statements or phrases considered essential to the research topic were extracted to formulate multiple meanings.

All formulated meanings were gathered and classified into parallel clusters in separate word files. A cluster of themes was created from the formulated meanings to determine the emergent themes.

2.5 Ethical Considerations

Written informed consent was obtained from FGD participants. This study's protocol was directed according to appropriate ethical considerations (e.g., informed consent, confidentiality, privacy, and anonymity) (Salvador et al., 2016; Morse, 1998).

3. Result and Analysis

The emergent themes that were generated from FGDs can be linked to a widely known '*management* process'. This process has four steps ─ 1: Planning; 2: Organizing; 3: Directing; and 4: Controlling. These steps have been reflected in the experiences shared by the family medicine residents in achieving their desired learning outcomes based on SDL (see figure 1).

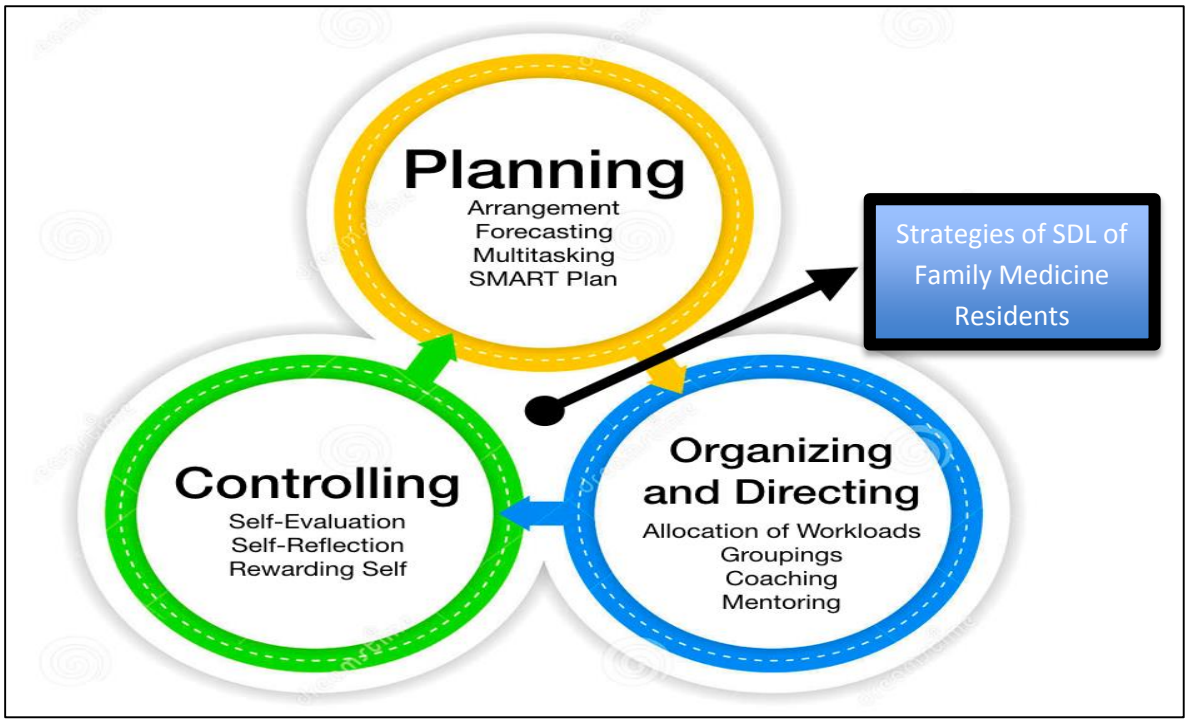

Figure 1: *Conceptual Diagram Illustrating Various Strategies of Family Medicine Residents towards Self-Directed Learning Based on the Emergent Themes*

3.1 Emergent Theme 1: Planning To-Do List with Deadlines

The first emergent theme "*planning to-do list with deadlines"* depicted one of the strategies of the participants towards actualizing their desired learning outcome based on the medical curriculum's SDL. The participants spoke about their best practices and by analyzing their statements, three clusters of themes were generated namely *planning ahead of time, setting up the time frame, barring multitasking and determining a measurable, attainable and realistic plan of activities*, which will be explored, later, and discussed in the succeeding paragraphs.

Planning ahead of time and setting up time frame is one of the initial theme clusters generated from the abovementioned theme. All the participants believed that planning was one of the most essential components in managing any kind of courses especially in the field of medicine, which was tougher and complicated compared to it in any other educational curriculum. It involves planning things ahead of time as what has been done by the family medicine residents in their course of work. Most often, the effect of unplanned activities could be experienced later on during the course of working. One of the participants shared her rich textual experiences about setting up the time frame: *"Alhamdulillah mostly I do control my time. Although it is sometimes overwhelming usually if am concentrated and I had a well-prepared plan then mostly I achieve my goals in optimal time. I usually set my deadlines to keep myself updated."* (Participant 2, FGD 2). Planning ahead of time and setting up time frame are two notable strategies used and lived by the participants. Review of the literature indicates that these two elements of planning are crucial to the success of the goals and objectives.

The second theme cluster emerged from this foregoing emergent theme is called '***barring multitasking'***, which denotes that an individual can perform multiple tasks at the same time conforming to his or her preferences or depending on their capacity and own skill sets to perform two task at a time. Another participant mentioned multitasking in a normal tonal voice: *"I am trying to manage my time between academic life and social life. I allocate 2-3 hours after working hours to study at home. So, I created an organized plan each day and try to complete all tasks on time to prevent overlapping and multi-tasking." (Participant 8, FGD 1).* Multitasking works effectively in the medical profession as observed from the experiences of the participants. Most of the participants have found innovative ways and means to complete and finish their assigned tasks on time.

The third contextual category emerged from this theme is called as **'*determining a measurable, attainable and realistic plan of activities'***. Yet, another participant mentioned the importance of setting a measurable, attainable and realistic plan in her narration: *"Some goals would take* more *time than I assigned and expected. A lot of distraction nowadays in the form of entertainment activities or result from indulging in the social media. Also, the social life takes a lot*

in weekday or weekend. So I make sure to do activities that I can measure and afford to do, which are realistic and attainable." (Participant 12, FGD 1). Thus, it may be concluded that this emergent theme highlighted that planning plays important roles in the lives of medical residents. In addition, the three identified contextual categories have elucidated the most common strategies that the participants engaged to keep abreast with their desired learning outcomes. Hence, it mirrors, how planning, plays an essential role in their lives as medical residents, and therefore, the robust the planning is, the extensive advantages will be!

3.2 Emergent Theme 2: Organizing Workload and Directing Viewpoints

The second theme "*organizing workload and directing viewpoints"* portrays the experiences of the participants towards the organization and directing strategies for meeting their desired learning outcomes.

The first contextual category is called *the '**allocating of workloads and assignments'.*** This depicted organization of the participants' curricular workloads and assignments. All participants believed that organizing themselves helped get through all their tasks and responsibilities assigned to them. One participant mentioned. *"I always try to be organized by writing tasks for the week, the tasks are set according to priorities my time will be divided between private life and study tasks. As long as I get some support from my mom and my housemaid in taking care of my little daughter and working at home." (Participant 6, FGD 1).* The participants understood that allocation of tasks was an important aspect of organizing and directing. They saw it as a process, which allowed them to make personal adjustments, but these adjustments could have been minimal if a specific design was followed. It should show the part each person would play in the general social pattern, as well as the responsibilities, relationships, and standards of performance.

The second contextual category evolved from this emergent theme is called as ***'teaming up and group works'***, which depicted organizing and directing people towards the achievement of common goals and objectives. They believed the fact that it was faster and easier working with many hands and minds than working alone. Working in teams and groups makes time, effort and resources achievable; however, they believed that working in teams would require effective and efficient leadership, time management skills and teamwork along with the cooperation to accomplish the desired goals and objectives.

The third contextual category which emerged from this theme was ***'getting experts' advice and opinions',*** which denoted the participants' initiative to ask for assistance and seek guidance from the people they look up to or to personalities who they believed could help them achieve their goals and objectives.

All participants during the FGDs agreed that getting support and advice from mentors helped them focus on time management. They all believed that an adviser is a person that gives advice and suggestions to people from their own experiences and expertise, likewise, having an excellent adviser provides constructive criticism rather than giving destructive commentaries which would offend a person or group of people. In the medical profession, errors and mistakes are not allowed as medical practitioners deal with human lives.

These three contextual categories represented the various strategies used by the residents in the pursuit of successful goals and objectives and accomplishments of the curriculum's desired learning outcomes.

3.3 Emergent Theme 3: Rewarding Oneself

Third and the last theme *"rewarding oneself",* the first theme cluster formed in this foregoing theme is called ***'evaluating oneself and constant self-reflection'***, which delineated a methodical determination of how a person would judge his or her actions based on certain standard criteria. From the narratives of the participants, it was observed that self-evaluations and self-reflection helped them realize things they had done, whether right or wrong. All participants were aware of the difference between self-evaluation and self-reflection and its nature and impact to oneself. For them, self-evaluation was looking back through all the steps a person had undergone such as revisiting management process to see how it went through while self-reflection in actual sense was the ability of human being to exercise introspection and eagerness to learn more about their essential nature, purpose, and essence, and thus, in the present context it was introspecting the whole management processes to see how it contributed to someone's life such as knowing a person's real nature, essence, and purpose in life. This awareness helped them set their own priorities in managing their time effectively and efficiently as depicted in their various narrations about time management. One of the participants underscored the importance of self-reflection in time management, *"I always do my self-reflection. I like to plan my time carefully at the beginning of the week but with a bit of flexibility. Knowing what social events, I want to attend this week, topics that I need to read helps me organize my time and prioritise my work. During exams, I use a planner to help me manage my time." (Participant 9, FGD 2).*

The second and final contextual category emerged from this theme was called ***'expending quality time with loved ones'*** portrayed how participants rewarded themselves in hostile conditions and malevolence encounters they faced in achieving their desired goals and objectives. All participants believed that every human being has their own ways and means to deal with the tiring and exhausting lives and relax. The participants engaged themselves in various activities in order to

relax and relive various aspects of life such as social, mental, emotional, physical and moral. One participant stated that he loved to plan unexpected activities with his family, *"I do my plan for every day and I think I control sometimes my time, as sometimes, unexpected family issue or entertainment events (picnic and sports) happened that take me away from study." (Participant 9, FGD 2)* and one female participant exclaimed that expending quality time with friend would give her relaxation, *"Every night almost I take dinner outside with my friends also spend a lot of time on social media every day add to that the entertainment activity which I participate most of the time." (Participant 14, FGD 1).*

All the contextual categories emerged from the theme '*rewarding oneself*' portrayed how the participants rewarded themselves in lieu of challenges they faced towards achieving their desired learning goals and objectives as the family medicine residents. Through, self-evaluations and reflections, participants discovered some attributions and competencies, which they had not discovered from the beginning. Moreover, one way of regaining their motivation for excellence is by treating themselves with their families for relaxation.

4. Discussion

The present study identified several strategies used by Saudi Medical residents that were associated with efficient time management. These strategies were based on Macan's time management theory and met the desired learning outcomes

We found that planning was critical in managing any kind of courses, especially in the field of medicine, which was tougher and more complicated compared to any other educational curriculum. Accordingly, it has been highlighted that planning plays a vital role in effective time management. Therefore, an individual must plan his/her day well in advance in order to make the best possible use of time. In addition, planning gives an individual a sense of direction in the institution and motivates him/her to complete tasks on time. In 1999, Stonick reported that residents, as compared to practicing physicians, spend less time planning and reacting to clinical problems in real time. Accordingly, we reported that prior planning and setting up time frames were two important strategies that were used by our residents. In line with our findings, one study reported that there must be a mechanism put in place for how to plan and use time for studying, which should be worked out and implemented (Bardbier, 1983).

Another important finding of the study was the observation that multitasking worked effectively in the medical profession, as observed from the experiences of the participants. However, according to one of the studies, participants in the mandatory multitasking condition had the lowest

performance. The study reported that participants who received interruptions while undertaking hard tasks experienced more adverse effects than those undertaking the task under optional multitasking or no multitasking at all (Alder and Benbunan-Finch, 2015). Therefore, multitasking has been reported as an essential skill that should be developed during emergency medicine residency. It was found that residents who struggled to cope in a multitasking environment complained of fatigue, stress, and burnout, and committed most of the medical errors. Accordingly, one of the studies reported that residents should have been deployed in work environments that corresponded to their multitasking abilities, and their progress should have been evaluated after identified deficiencies were remediated (Heng, 2014).

In our study, all participants believed that proper organization for the given task had helped them get through all the tasks and responsibilities assigned to them, and that allocation of tasks was an important aspect of organizing and directing their time, which could lead to better time management.

The emergent themes that were generated from the FGD can be associated with what is widely known as the "*management process*." This process has four steps: planning, organizing, directing, and controlling, which reflect the experiences shared by the residents in achieving the desired learning outcomes based on the SDL.

Planning ahead of time with deadlines was the first theme that involved the general objectives of the blueprint, answering the sub-question, "*how do you manage the time for your study and private life?*" All family medicine residents during their residency in the hospitals adopted best practices and strategies and used them to effectively and efficiently finish all their assigned tasks and responsibilities. This is called "*strategic planning*," and it is described as setting singular or collective goals and objectives, devising interventions to meet the goals, and gathering resources to achieve the ultimate goal (Mintzberg and Quinn, 1996).

The second theme, *organizing workloads and directing viewpoints,* portrays the experiences of participants toward structuring and organizing their resources (human, physical, financial, and data) to directly involve an individual or group with the strategic planning, which answered sub-question 2, "*how do you feel you are controlling your time?*" In the management process, organizing is the systematic process which amalgamates, harmonizes, and structures all the responsibilities and tasks to achieve particular goals and objectives, while directing is leading oneself and a group of people toward achieving objectives based on styles and principles of leadership and expertise in the management processes.

The purposes of organizing and directing others in the process of time management specifically with regard to SDL are to achieve expected SDL goals, optimize resource utilization (books, e-journals, blackboards, etc.), perform as well as possible as student-learners, enable personal and professional growth and development, and acquire professionalism and competencies.

The third and final theme, *rewarding oneself*, pertains to the control and evaluation of an individual based on his or her actions and that were meant to provide insights and lessons. This theme answered research sub-question 3, "*how do you achieve your goals in an optimal time?*" Family medicine residents must evaluate their performances from time to time to know where they stand at any given moment. Knowing about their progress would enable them to devise further essential strategies on how to improve their respective crafts or to simply make decisions for personal and professional development and improvement. Through coaching and mentoring from instructors, the residents would be able to establish their own ways and means to live and cope with tough situations.

In sum, the emergent and cluster of themes from our study reflect the involvement of family medicine residents toward actualizing time management for meeting and achieving their desired learning outcomes. These emergent themes were all supported with substantial arguments from various relevant pieces of literature and studies, validating that these emergent themes occurred not only in just the intended research locale but all over the world.

5. Conclusion

In conclusion, time management was found to be an indispensable and integral part of SDL, and that accountability and responsibility form a distinctive cluster in which individuals work together amicably in order to achieve all the intended program learning outcomes. This study concluded that positive outcomes may be expected if time-management strategies are implemented according to Macan's time management theory (1994). This included the need for planning ahead, organizing workloads, directing viewpoints, rewarding, and recompensing, which are essential strategies employed by the residents in successfully accomplishing all residency requirements.

Challenges and pitfalls are normally encountered during the time management process which can be efficiently mitigated and resolved through the adoption robust management processes (i.e., planning, organizing, directing, and controlling).

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